Teaching children to cope with acute stress in sport: the impact of a stress management intervention on overall enjoyment of sport and ability to cope with stress

Jennifer Myra Delany
University of Wollongong
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TEACHING CHILDREN TO COPE WITH ACUTE STRESS IN SPORT:
THE IMPACT OF A STRESS MANAGEMENT INTERVENTION ON
OVERALL ENJOYMENT OF SPORT AND ABILITY TO COPE WITH STRESS

A thesis submitted in fulfilment of the requirements
for the award of the degree of

MASTER OF ARTS (HONOURS)

from

THE UNIVERSITY OF WOLLONGONG

by

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DEPARTMENT OF PSYCHOLOGY
Knowing is not enough, we must apply.
Willing is not enough, we must do.

- GOETHE
Declaration

This thesis is submitted in accordance with the regulations of the University of Wollongong in fulfillment of the requirements for the degree of Master of Arts (Honours).

I certify that this thesis is my own work. It has not been submitted for a degree at another university or institution.

Jennifer M. Delany
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Abstract

Two studies were conducted in this thesis (1) to examine how child athletes cognitively appraise and cope with acute game-related sources of stress in sport, and (2) examine the effectiveness of a stress management training program in reducing the deleterious effects of acute stress for child athletes. In study 1, structured interviews with 16 female and 36 male junior athletes identified their experience of 10 sources of acute-game related stress. The two most frequently reported sources of stress were missing an easy shot and receiving a bad call from the umpire. Gender differences were observed in the cognitive appraisals made following the stressors, with male participants reporting a greater percentage of negative appraisals than female participants. Gender differences were also observed in the type of coping strategies employed in response to the athlete's cognitive appraisals. Male participants reported a greater use of avoidance coping strategies in response to negative appraisal than females whereas, female participants reported a greater use of avoidance coping in response to positive appraisals than males.

In the second study, the effectiveness of a stress management program for child athletes in reducing the negative effects of two acute game-related stressors was examined. These acute game-related stressors were identified in study 1 (i.e., missing an easy shot, receiving a bad call from an umpire). Participants were matched on age, gender, and competitive experience and assigned to an experimental or motivational-control group. Over a seven-session period, the experimental group received a stress management program, based on Anshel's (1990) COPE model and DeWolfe and Saunders (1992) school based stress management program for children. The program also included aspects of Meichenbaum's (1985) Stress Inoculation Training and Smiths (1980) Cognitive Affective Stress-Management Training. Experimental participants were taught a specific integrated coping sequence allowing speed and parsimony in the execution of coping
responses. The coping strategies taught to participants reflected the level of control available in response to the source of stress experienced. Thus, an approach oriented strategy was advocated with stressors amenable to control (e.g., missing an easy shot) and an avoidance oriented strategy was advocated for stressors appraised as uncontrollable (e.g., after receiving a bad call from the umpire). Participants in experimental group also received handouts and home-work sheets to assist them in using the coping strategies correctly. Measures assessed pre and post data collection included (1) global measurements of the competitive experience (e.g., fun, enjoyment, satisfaction, participation, pride in play, desire to continue playing, performance level and satisfaction), (2) assessments of how annoyed, guilty, embarrassed, angry and unhappy participants were following their experience of two selected stressors; and (3) measures of affect (using the stress arousal adjective checklist), appraisal, perceived controllability, and perceived coping efficacy.

The results of the study provide partial support for the effectiveness of the stress management program in reducing the negative effects of acute stress for child athletes. Results on the post intervention knowledge test demonstrated that experimental participants were able to learn the basic concepts and skills taught in the program: they demonstrated more knowledge than control participants in identifying signs of stress and knowledge of coping strategies and how to implement them. The experimental group also demonstrated significant increases on global measurements of the competitive experience including the level of fun experienced and the pride in the way they played and significantly reduced guilt after missing an easy shot compared to controls. Experimental participants enjoyed a more positive sport experience following participation in the program, compared to controls. However no significant improvements were observed in ratings of affect, appraisal, perceived coping and coping efficacy.
These findings lend support to the effectiveness of the stress management program and provided some evidence that young athletes could learn coping skills and strategies and apply them successfully in their sport experience. Further research is needed to replicate and extend these findings on the effectiveness of strategies to cope with the experience of acute stress for child athletes.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE</td>
<td>i</td>
</tr>
<tr>
<td>EPIGRAPH</td>
<td>ii</td>
</tr>
<tr>
<td>DECLARATION</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iv</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xii</td>
</tr>
<tr>
<td>CHAPTER 1: Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Significance of Studies</td>
<td>5</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>7</td>
</tr>
<tr>
<td>Research Questions and Justification</td>
<td>8</td>
</tr>
<tr>
<td>Assumptions</td>
<td>12</td>
</tr>
<tr>
<td>Delimitations and Limitations of Studies</td>
<td>13</td>
</tr>
<tr>
<td>Operational definition of terms</td>
<td>14</td>
</tr>
<tr>
<td>CHAPTER 2: Review of Literature</td>
<td></td>
</tr>
<tr>
<td>Definitions of Stress</td>
<td>16</td>
</tr>
<tr>
<td>Transactional Model of Stress</td>
<td>17</td>
</tr>
<tr>
<td>The Effects of Stress on Cognition And Performance</td>
<td>21</td>
</tr>
<tr>
<td>Chronic and Acute Stress</td>
<td>22</td>
</tr>
<tr>
<td>Sources of Stress in Sport</td>
<td>24</td>
</tr>
<tr>
<td>Measurement of Stress</td>
<td>28</td>
</tr>
<tr>
<td>Dispositions Influencing the Stress and Coping Process</td>
<td>30</td>
</tr>
<tr>
<td>Stress in Children and Gender Differences</td>
<td>31</td>
</tr>
<tr>
<td>CHAPTER 3: Review of Literature</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td></td>
</tr>
<tr>
<td>The Coping Process .................. 34</td>
<td></td>
</tr>
<tr>
<td>Approaches to Coping ................ 34</td>
<td></td>
</tr>
<tr>
<td>The Transactional Model ............... 37</td>
<td></td>
</tr>
<tr>
<td>Coping Responses ..................... 38</td>
<td></td>
</tr>
<tr>
<td>Coping Style .......................... 40</td>
<td></td>
</tr>
<tr>
<td>Coping Style in Sport ................. 44</td>
<td></td>
</tr>
<tr>
<td>Coping and Gender Differences ........ 45</td>
<td></td>
</tr>
<tr>
<td>Coping and Sport ...................... 48</td>
<td></td>
</tr>
<tr>
<td>Measurement of Coping ................ 49</td>
<td></td>
</tr>
<tr>
<td>Coping in Childhood .................. 50</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 4: Review of Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress Management: An Overview ........ 55</td>
</tr>
<tr>
<td>Stress Management and Children .......... 56</td>
</tr>
<tr>
<td>Stress Management in Sport ............... 57</td>
</tr>
<tr>
<td>Limitations of Previous Stress Management Research .......... 64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 5: Review of Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>The coping model in the present study .......... 67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 6: Method - Study 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants .................. 72</td>
</tr>
<tr>
<td>Measures ...................... 72</td>
</tr>
<tr>
<td>Procedure ..................... 80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 7: Results - Study 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results Overview ................ 84</td>
</tr>
<tr>
<td>Qualitative Results ............... 84</td>
</tr>
<tr>
<td>Quantitative Results .............. 101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 8: Discussion - Study 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative Findings .............. 110</td>
</tr>
<tr>
<td>Quantitative Findings ............. 118</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequency and Percentages of Sources of Acute Stress Reported by Male (n=36) and Female (n=16) Participants</td>
<td>86</td>
</tr>
<tr>
<td>2. Frequency and Percentages of Cognitive Appraisals Reported by Male (n=36) and Female (n=16) Participants</td>
<td>90</td>
</tr>
<tr>
<td>3. Frequency and Percentages of Coping Responses Reported by Male (n=36) and Female (n=16) Participants</td>
<td>93</td>
</tr>
<tr>
<td>4. Selected Examples of Coping Responses for Male (n=36) and Female (n=16) Participants and The Stressors to which they Refer</td>
<td>95</td>
</tr>
<tr>
<td>5. Approach and Avoidance Coping Styles in Response to Individual Stressors for Male (n=36) and Female (n=16) Participants</td>
<td>98</td>
</tr>
<tr>
<td>6. Correlation Co-efficients and Probability Values for Negative Appraisals, Trait Anxiety (SCAT-C) and Self Esteem (SEI-C), respectively, for Male (n=36) and Female (n=16) Participants and the Total Group (N=52)</td>
<td>101</td>
</tr>
<tr>
<td>7. Correlation Co-efficients and Probability Values for Positive Appraisals, Trait Anxiety (SCAT-C) and Self Esteem (SEI-C), respectively, for Male (n=36) and Female (n=16) Participants and the Total Group (N=52)</td>
<td>103</td>
</tr>
<tr>
<td>8. Correlation Co-efficients and Probability Values for Proportion of Positive Appraisals and Components of Self-Esteem for Male (n=36) and Female (n=16) Participants and the Total Group (N=52)</td>
<td>105</td>
</tr>
<tr>
<td>9. Correlation Co-efficients and Probability Values for Proportion of Negative Appraisals and Components of Self-Esteem for Male (n=36) and Female (n=16) Participants and the Total Group (N=52)</td>
<td>106</td>
</tr>
</tbody>
</table>
10. Means and Standard Deviations for Trait Anxiety (SCAT-C) and Self-Esteem (SEI-C) respectively, for Males (n=36) and Females (n=16), and SCAT-C and SEI-C Normative Data ................................................................. 107

11. Means and Standard Deviations for Levels of Effort, Trying Hard, Enjoyment, Fun, Pride, and Performance, and Satisfaction for Experimental (n=7) and Control (n=7) Groups ................................................................. 150

12. Means and Standard Deviations of Effort, Performance and Desire to Keep Playing as Compared to Other Team members for Experimental (n=7) and Control (n=7) Groups ................................................................. 150

13. Means and Standard Deviations for the Variables Annoyed, Guilty, Embarrassment, Anger, and Unhappy at Pre- and Post-treatment in Response to Missing an Easy Shot for Experimental (n=7) and Control (n=7) Groups ...................... 151

14. Means and Standard Deviations for the Variables Annoyed, Guilty, Embarrassment, Anger, and Unhappy at Pre- and Post-treatment in Response to Receiving a Bad Call from the Umpire for Experimental (n=7) and Control (n=7) Groups .............. 152

15. Means and Standard Deviations for Affect, Stress Appraisals, Perceived Control and Coping Efficacy at Pre- and Post-treatment in Response to Missing An Easy Shot for Experimental (n=7) and Control (n=7) Groups ...................... 155

16. Means and Standard Deviations for Affect, Stress Appraisals, Perceived Control and Coping Efficacy at Pre- and Post-treatment in Response to Receiving a Bad Call from the Umpire for Experimental (n=7) and Control (n=7) Groups .............. 155

17. Means and Standard Deviations for the Frequency of Total Coping Strategies employed after Missing an Easy Shot, Receiving a Bad Call from the Umpire, and Total Coping Strategies Employed for Experimental (n=7) and Control (n=7) Groups ................................................................. 157
18. Coping Response Classified as Percentages of Total Coping for Experimental
   (n=7) and Control (n=7) Groups and Percentages of Total Coping for Both Groups
   (N=14) at pre- and Post-treatment after Missing An Easy Shot ......................... 158
19. Coping Response Classified as Percentages of Total Coping for Experimental
   (n=7) and Control (n=7) Groups and Percentages of Total Coping for Both Groups
   (N=14) at Pre- and Post-treatment after Receiving a Bad Call from The Umpire .. 159
20. Means and Standard For Post Intervention Knowledge Questions Common to
    both Experimental (n=7) and Control (n=7) Groups (Questions 1 - 10) .......... 162
21. Means and Standard Deviations for Knowledge Questions Specific to
    Experimental (n=7) and Control (n=7) Groups .................................................. 163
22. Means and Standard Deviations for Future Intention Questions Specific to
    Experimental (n=7) and Control (n=7) Groups .................................................. 163
23. Post Intervention Questions Rating How Useful and Enjoyable the Information
    Covered in the Sessions for both Experimental (n=7) and Control (n=7) Groups.. 164
24. Means and Standard Deviations for the Intensity of Missing An Easy Shot and
    Receiving a Bad Call from The Umpire for Experimental (n=7) and Control
    (n=7) Groups .................................................................................................. 165
25. Means and Standard Deviations for the Frequency of Missing An Easy Shot and
    Receiving a Bad Call from The Umpire for Experimental (n=7) and Control
    (n=7) Groups .................................................................................................. 165
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Selected Stress Management Techniques</td>
<td>56</td>
</tr>
<tr>
<td>2. The Coping Process In Sport</td>
<td>77</td>
</tr>
<tr>
<td>3. Outline of Experimental Group Intervention Program</td>
<td>132</td>
</tr>
<tr>
<td>4. Outline of Control Group Intervention Program</td>
<td>142</td>
</tr>
</tbody>
</table>
Stress is a persistent and inherent feature of the competitive sport environment (Anshel, Gregory, & Kaczmarek, 1990), primarily due to the pressure to succeed and excel. Within the sport environment stressors can be distinguished as either chronic or acute in nature. If stressful experiences are persistent such as demands on time and energy, boredom, or poor coach/athlete relationships, the athlete may experience chronic stress (Orlick & Botterill, 1975). Research suggests the consequences of chronic stress in sport include poor performance, burnout and the athlete's eventual withdrawal from competitive sport (Smith, 1986).

In sport, sources of acute, game-related stress occur in response to the sudden exposure to events or stimuli perceived as unpleasant (Anshel, 1990). Examples include the pain of a sudden injury, making a mental or physical error, cheating by the opposition, environmental conditions (e.g., crowd behaviour, poor weather, inadequate facilities), an unfavourable game score, and receiving a "bad" call from an official. In addition to negatively affecting numerous cognitive and psychophysiological processes (e.g., concentration, attentional focus, effort, and arousal) (e.g., Allport, 1989; Smith, 1980), researchers have shown that the inability to manage or reduce repeated exposure to acute stress in sport may lead to decreased motivation, emotional distress, poor athletic performance, chronic stress, psychological burnout and withdrawal from competitive sport for both adults (Smith, 1986) and younger competitors (Scanlan & Passer, 1979). Although acute stress is inherent in competitive sport, athletes can reduce its impact on their emotions and performance by using effective coping strategies (Anshel, Brown, & Brown, 1993). Consequently, there has been growing interest in teaching athletes methods to more effectively cope with their stress (Kerr & Leith, 1993).

Recent research examining the stress response has been guided by the transactional model of stress and coping (Lazarus & Folkman, 1984; Lazarus & Launier, 1978), where stress relationships occur as a result of a "transaction" between
environmental and personal factors. In this model, the individual's cognitive appraisal of a situation is a critical factor in determining whether a particular experience will become a stressor (Lazarus & Folkman, 1984). The perception of stress develops when the perceived internal or external demands of a situation exceed or tax the perceived resources of the individual to cope with the demands (Lazarus & Folkman, 1984). In summary, the individual's appraisal of the situation, their ability to cope with the demands, and the perceived consequences of coping, strongly influence the coping process (Smith, 1980).

Coping has been recognised a critical mediating factor in stress relationships in sport (e.g., Crocker & Gordon, 1986; Mace & Carroll, 1989; Smith, 1980). Coping refers to the individuals "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p.141). Researchers agree that coping plays a vital role in the individual's physical and psychological well-being when confronted with negative stressful events (Endler & Parker, 1990; McCrae & Costa, 1986; Miller, Brody, & Summerton, 1988).

Researchers examining the effectiveness of stress management interventions in sport suggest that the individual's choice of certain coping strategies is a contributing factor in poor performance and sport dissatisfaction (e.g., Crocker, Alderman, & Smith, 1988; Mace & Carroll, 1985). Indeed, past studies have demonstrated that different coping strategies are required when dealing with different types of stressors (e.g., Matheny, Aycock, Pugh, Curlette, & Cannella, 1986; Roth & Cohen, 1986). Thus, no single coping strategy is effective for all stressors (Compas, 1987). Researchers further suggest the effectiveness of selected coping techniques is associated with individual preferences for using specific strategies in response to various stressors. That is, individuals have a tendency to employ preferred coping techniques consistently when responding to certain stressful situations coping strategy, referred to as a persons coping
style (Carver, Scheier, & Weintraub, 1989; Cohen, 1987; Endler & Parker, 1990). Endler and Parker (1990) suggest that differences in coping style play a role in choosing a particular coping strategy to combat stressors. Examining coping style is useful as it offers insight into why individuals respond to stress in a particular manner.

Roth and Cohen (1986) used the term approach and avoidance when describing coping style, to reflect the individuals ability to vary their orientation towards threatening situations by approaching or avoiding the situation. An approach style of coping reflects an orientation towards the source of stress, whereas an avoidance style reflects an orientation away from the source of stress. Several researchers have also emphasised the importance of flexibility of coping style and altering approach and avoidance tendencies according to the situational demands (Myers, 1982; Miller, 1991). Thus, a coping strategy implemented in one situation may not be appropriate for another situation (Fleming, Baum, & Singer, 1984). Miller (1991) clarified the use of a flexible coping style, as a non-rigid approach to resolving stressful situations by “sifting out when and for whom avoidance may produce health outcomes, as well as to specify when and for whom the opposite might be true” (p. 1). Previous coping research also supports the need for flexibility in coping, as reflected by changing strategies according to the demands of different stressors, and changing the coping strategy for the same stressor when demands for that stressor also change (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986a). From an intervention perspective, identifying the most appropriate and effective coping style in response to acute stress experienced in sport, will enable researchers to design more effective intervention programs. Researchers suggest, the literature on coping style in sport remains in need of further study (Krohne & Hindel, 1988; Williams & Krane, 1992).

To date, research examining the effectiveness of coping styles in response to acute stress in sport is scarce (Anshel, 1990). There is however, evidence that “skilled athletes cope with acute stress by blocking out harmful, unpleasant messages while
incorporating, learning, and implementing information that contributes to their performance success" (Anshel, 1990; p. 62). Blocking out harmful, unpleasant messages may be thought of as psychologically blunting or avoiding the threat related information, thereby reducing cognitive distractions. On the other hand, incorporating, learning, and implementing information may be thought of as monitoring or seeking out information about the threat, as in an approach strategy.

According to Meichenbaum (1985), designing an effective stress management program should include identifying the source of the problem, and then teaching appropriate coping skills. Meichenbaum (1993) further suggests that understanding the factors facilitating coping processes is important to researchers developing stress management programs, to ensure that interventions enhance those resources beneficial in producing adaptive coping responses, and reduce those conditions contributing to stress.

In sport, stress management programs (SMP) have included Meichenbaum's (1977, 1985) stress inoculation training, Smith's (1980) stress management training program, and Suinn's (1972) anxiety management training. Although these stress management programs have proved effective across sporting populations in modifying variables related to the stress process and performance itself, they were limited to the regulation of chronic stress (Crocker, Alderman, & Smith, 1988).

Stress management programs specific to acute, game-related stress in sport have been scant in the sport psychology literature (Anshel, 1990; Johnston & McCabe, 1993). Anshel's (1990, 1986) COPE model, represents the only published acute, game-related stress management program based on the transactional model of stress and coping. However, research in the COPE model has only explored the effectiveness of this program for adult and adolescent populations: it has not been examined with child populations (e.g., Anshel, 1990; Anshel et al, 1990; Anshel et al, 1993).

In summary, researchers in many sport psychology interventions have recognised that participating in competitive sport has the potential to cause high levels of stress in
many individuals (Crocker & Graham, 1995). Further, the absence of specific coping skills to respond to this stress has been identified as a factor contributing to inadequate performance and sport dissatisfaction in adults (Crocker & Graham, 1995; Crocker, 1989; Crocker, Alderman, & Smith, 1988; Mace & Carroll, 1985, 1989; Smith, 1980). Further, in children competitive stress “detracts from enjoyment of sports, causes performance impairment, and contributes significantly to the drop-out rate in youth sports” (Smoll & Smith, 1990, p. 1037).

Therefore, one of the primary purposes of this thesis was to develop a stress management intervention program in response to the acute stressors experienced by child athletes in sport. The development of coping skills specific to the stressors experienced may potentially reduce and/or minimise the deleterious effects of acute stress experienced in sport and thereby increase child athlete’s enjoyment and sport success.

**Significance of this Research**

Researchers have long acknowledged the importance of coping as a critical moderator in the physiological and psychological adaptation to stress in sport (e.g., Crocker & Gordon, 1986; Mace & Carroll, 1989; Smith, 1980). Since coping responses are a function of personal and contextual characteristics, as reflected in the transactional model (Lazarus & Folkman, 1984), it is important to differentiate between research findings in sport and non-sport literature. For example, consider the efficacy of promoting avoidance coping strategies while experiencing a chronic disease and then applying these findings to sports officials (Kaissidis, 1994). As Kaissidis (1994) notes, while avoidance coping may prove beneficial for cancer patients in terms of reducing depression and anxiety, the sports official who ignores threats of physical abuse by aggressive fans may be in danger if spectators carry out their threats.

The need for situation and profession-specific approaches in the study of stress and coping has been recognised by researchers (e.g., Krohne, 1988; Larsson, Kempe, &
According to Roth and Cohen (1986), when examining the coping process and the appropriateness of coping strategies, it is important to study only one source of stress and subsequent use of coping strategies over time. Roth and Cohen (1986) suggest this strategy allows for research on effective coping strategies to “proceed in the context of knowledge of critical characteristics of stressful events” (p. 818).

According to Krohne (1988), the specificity of stress-related factors in different sports and sport roles is especially important when examining coping in sport environments. Krohne (1988) suggests the research and application of sport-specific intervention programs need to proceed along the line of a sport-specific approach as it is “highly unlikely that one and the same training program will serve the needs of athletes in different fields” (p. 22). While the stress management literature has clearly demonstrated the influence of one’s thoughts on managing chronic stress, similar research on managing acute stress, particularly in competitive sport, have been lacking.

Although several sources of chronic stress have been identified for male and female youth sport competitors (e.g., Martens & Gill, 1976; Pierce, 1984; Pierce & Stratton, 1981; Scanlan, 1977; Scanlan & Lewthaite, 1984; Scanlan & Passer, 1978, 1979), sources of acute stress for children in sport have not been identified. Further, there is a dearth of research concerned with child athletes and coping. According to Frydenberg & Lewis (1993), it is “difficult to draw comparisons between data derived from coping research, since most of the work has been reported with adult populations” (p. 225). As Robert’s (1986) contends, children are not miniature adults, and have their own criteria influencing their perception of stress. Gould (1988) also contends that too often researchers assume research on adults may be applied to younger age groups, when in fact what applies in the adult stress and coping literature may not readily be transferred to children.
In summary, an examination of the related studies in the developmental and coping literature indicates the virtual absence of research on coping with acute stress situations in sport, and the total absence of research on coping with acute stress in sport for children. Since persistent experiences of acute stress may lead to chronic stress and subsequently reduce the athlete's satisfaction and enjoyment the present study was warranted to examine the sources of and responses to acute stress before developing a program to deal with them for child athletes.

**Statement of the Problem**

The purpose of this thesis was to examine how child athletes appraise and cope with various sources of acute stress experienced during competitive field hockey games. The transactional model of stress and coping espoused by Lazarus and his colleagues (Lazarus & Folkman, 1984; Lazarus & Launier, 1978) and styles of coping suggested by Roth and Cohen (1986) formed the conceptual framework of this study. These theoretical orientations to the coping process have not been studied to date with child athletes (Sorensen, 1993). The purposes of the present research were therefore to determine the cognitive appraisals and coping strategies of young athletes in response to sources of acute stress in sport; and examine the effectiveness of a stress management training program in reducing the deleterious effects of acute stress experienced by child athletes in competitive sport.

**Research Purposes**

The purposes of study 1 were to examine (1) the sources of, and responses to, acute game-related stress for children athletes, appraised by the athletes as highly intense, (2) the cognitive appraisals made following events appraised as highly stressful, (3) the cognitive and behavioural coping responses employed by child athletes following the stressful events, (4) the extent to which the psychological dispositions of self-esteem and
trait-anxiety, are linked to children’s appraisal and coping styles. The purpose of study 2 was to examine the effectiveness of a stress management program in reducing the negative consequences of acute game-related stress for children athletes, following two commonly experienced stressors experienced during field hockey.

**Research Questions**

**Study 1: Sources of Acute Stress, Cognitive Appraisals, and Coping Responses of Competitive Field Hockey Players**

1. This study aimed to identify the sources of acute game stress experienced by children athletes, during a hockey game. Researchers suggest that when designing a stress management program for a particular population, the first step involves identifying the sources of stress experienced by individuals in that population. The specificity of stress-relevant factors and coping strategies in different sports is reflected in studies that have examined sources of stress with athletic populations (e.g., Cohn, 1990; Scanlan, Stein, & Ravizza, 1991).

2. This study aimed to identify the cognitive appraisals in response to sources of acute stress by child athletes during a hockey game. Cognitive appraisals including primary appraisals of “what is at stake” (p.31), and secondary appraisals of “what can I do” were examined because researchers have recognised the contribution these appraisals make in shaping the coping strategies the individual will use (e.g., Folkman & Lazarus, 1984; Folkman, Lazarus, Gruen, & DeLongis, 1986b; Holahan & Moos, 1987).

3. This study aimed to identify the cognitive and behavioural coping responses employed by children athletes following acute stressors during a hockey game. These coping responses were then classified into approach-avoidance dimensions as identified in the coping literature (Roth & Cohen, 1986). Other studies have also lent support to these dimensions, including monitoring and blunting (Miller, 1980); attention and
rejection (Mullen & Suls, 1982), and avoidance and engagement (Krohne, 1989).

It was hypothesised that:

4. Higher trait anxiety would be related to a greater proportion of negative appraisals.

Trait anxiety is an important component of the stress and coping process, because it influences the appraisals young athlete’s makes in sport situations (Gould, 1993). Specifically, high trait anxious child athletes tend to perceive evaluative environments, such as competition, as threatening, in contrast to low trait anxious young athletes placed in the same competitive environment (Gould, 1993). Several researchers have examined the factors associated with high trait anxiety in young athletes (Brustad, 1988; Brustad & Weiss, 1987; Passer, 1983). For example, Passer (1983) concluded that high-competitive-trait-anxious young athletes perceive evaluation and failure as major threats.

5. Higher self-esteem would be related to a greater proportion of positive appraisals

Self-esteem also plays an important role in an individual’s appraisal of situations. Researchers have recognised that appraising events as stressful depends on two factors, those relating to the situation and those relating to the person (Lazarus & Folkman, 1984; Cohen & Lazarus, 1983). Self-esteem is one personal factor that is known to influence appraisal. Cohen and Lazarus (1983) found that individuals who have high self-esteem are more likely to believe that they have the resources to meet the demands that require the strengths they possess. Thus, if individuals high in self-esteem perceive an event as stressful, it is predicted that positive rather than negative appraisals are more likely. Thus, a child athlete’s level of trait anxiety and self-esteem can affect the stress process by influencing their perception of demands in the environment (Gould, 1993).

6. Coping style (approach/avoidance) used by child athletes would be related to their appraisal (positive/negative) of that stressor. Specifically, it was predicted that male participants would use more approach and less avoidance coping strategies than female
participants (e.g., Billings & Moos, 1981; Lazarus & Folkman, 1980, 1982; Stone & Neale, 1984).

Study 2: The Effectiveness of Stress Management Training on Specific and Global Measures of the Competition Experience for Field Hockey Players

It was hypothesised that:

1. The group exposed to the stress management intervention, as compared to the control group, would report: increases in global measures of the competition experience including, level of effort, fun, enjoyment, participation, desires to continue playing, pride in their playing, performance level and satisfaction in their play following the intervention.

   The researcher was unaware of any studies to date exploring these specific variables in sport for adults or children. However, to the extent that failure to respond appropriately to stress in sport has resulted in performance deterioration and sport dissatisfaction in adults (Crocker, 1989; Crocker, Alderman, & Smith, 1988; Mace & Carroll, 1985, 1989; Smith, 1980), it seems plausible that athletes may feel dissatisfied with their performance or the situation. Conversely, were the individual able to manage or reduce the negative effects of stress experienced in a game, their general sport satisfaction and performance level may improve.

2. The group exposed to the stress management intervention, as compared to the control group, would report: decreases in how annoyed, guilty, embarrassed, angry and unhappy they felt after experiencing the two stressors, following the intervention.

   The researcher was unaware of any studies to date exploring these specific variables in sport for adults or children. However, to the extent that failure to manage or reduce persistent acute stress in sport may result in decreased motivation, emotional distress, poor athletic performance, and withdrawal from competitive sport for both adults (Smith, 1980) and younger competitors (Scanlan & Passer, 1979), it seems plausible to
suggest the athlete may feel negatively about their performance or the situation if unable to manage or reduce the experience of acute stress. Conversely, were the individual able to manage or reduce the negative effects of acute stress experienced in a game, their experience of these variables should reduce.

3. The group exposed to the stress management intervention, as compared to the control group, would report:
   a. increased positive affect, positive appraisals (i.e., challenge), perceived controllability, and perceived coping efficacy (positive); and
   b. decreased negative affect, negative appraisals (i.e., threat), and perceived coping efficacy (negative) following the intervention, in response to “missing an easy shot” and “receiving a bad call from the umpire.”

These hypotheses were derived from stress management intervention studies, which adopted the transactional model of stress (e.g., Anshel, 1990; Crocker et al., 1988). These studies recognised that an individual’s appraisal processes have important affective and behavioural consequences. For example, Anshel found that tennis players significantly improved their affect and performance when coping with acute stress, following the COPE program advocating the use of selected coping strategies instruction. Crocker et al reported significant effects on the positive thoughts and performance of elite volleyball players following a stress management program. Similarly, it was expected that field hockey players in the present thesis would experience improvements in affect, cognitions, and coping efficacy following an intervention program designed to enhance their perceptions of control in coping with acute stress situations.

4. The group exposed to the stress management intervention, as compared to the control group, would report:
   a. more approach coping strategies after missing an easy shot, following the intervention; and
b. more avoidance coping strategies, after receiving a bad call from an umpire, following the intervention.

These predictions were based on previous research, which has linked controllability of stressors with variations in coping (e.g., Carver et al., 1989; Folkman & Lazarus, 1980). These studies demonstrated that problem-focused coping was predominant in situations judged to be amenable to control; whereas emotion-focused coping was employed in situations appraised as having little potential for control by participants. Further, Carver et al, reported that active coping strategies were positively associated with perceived control; whereas, low controllability over the situation was associated with a greater use of denial and disengagement. It was therefore predicted that the appraisal of control in situations would result in the greater use of approach strategies. Conversely, situations appraised as uncontrollable would result in greater use of avoidance strategies.

Finally, selection of the 10-12 age group in both studies was based upon the need for research into the stress and coping area and the tenets of developmental theory. As Piaget (1952) noted, the child in the age of concrete operations (ages 7-11 yrs) has evolved logical thought processes, shed some of the egocentrism of earlier stages, and the internalised cognitive activities have also developed to a point of effective social communication. Kohlberg (1964) also noted that the child of this age has begun to acquire a sense of moral order, authority, and fair play. Thus, children aged 10-12 yrs should be expected to express themselves for research purposes.

**Assumptions**

In the present thesis it was assumed that:

1. All participants were capable and willing to comply with being interviewed by the researcher.
2. The participants' current cognitive functioning would enable them to comprehend the information given.

3. All answers supplied by participants were honest and candid.

4. Child athletes experience a range of stress intensities, and these were communicated accurately by the participant.

**Delimitations of Studies**

The athletes for this study were recruited from a junior league competition in the Illawarra Region, and therefore the sources of stress, appraisals and coping behaviour identified are not representative of the child athlete population at large. Further, these results may not be generalised to stressors unrelated to field hockey competition nor to non-hockey athletes.

**Limitations of Studies**

1. The findings in the studies of this thesis relied on self-report measures. Some methodological limitations inherent in this type of assessment include subjects' desire to appear in a positive light, inadequate memory problems, language ambiguity, and retrospective falsification (Folkman & Lazarus, 1985; Lazarus & Folkman, 1984). Thus, the use of self-report measures may account for possible inaccuracies in the findings. However, at present researchers have identified that self-report methods of assessing coping represent the best way to measure and gain insight into an individual's cognitive appraisals and coping responses (e.g., Folkman & Lazarus, 1980; Lazarus & DeLongis, 1983; Lazarus & Folkman, 1984; Miller, 1992).

2. The possibility of less-than-candid comments by participants who may hold back their true thoughts and feelings for various reasons.
3. Where possible the present studies used existing scales to maximise reliability. However, as these scales were constructed with non-athlete samples, their validity in sport psychology research remains speculative. For example, the use of a non-sport specific measure for self-esteem and the use of an adult measure for positive and negative affect.

4. Although efforts were made to develop a stress management intervention that field hockey players age 10-12 yrs would find appropriate and effective, it is possible that some participants may have lacked the commitment to utilise the program to its potential. However, in an attempt to counter this problem, homework assignments were monitored throughout the program and a post-intervention knowledge and intention questionnaire was conducted (Greenspan & Feltz, 1989).

**Operational Definition of Terms**

**Acute stress**- a sudden and short-term confrontation to demanding situations that an individual appraises as taxing or exceeding their resources.

**Approach Coping**- an individual’s style or preference in coping with stress, characterised by attending to the stressful event, or its cognitive and emotional interpretations.

**Avoidance Coping**- an individual’s style or preference in coping with stress, characterised by ignoring the stressful event, or its cognitive and emotional interpretations.

**Cognitive Appraisal**- the process of evaluating a situation in terms of its characteristics and consequences for the person’s well being.

**Competitive Trait Anxiety**- a personality disposition that represents a person’s general tendency to perceive competitive sporting situations as more or less threatening.

**Coping**- all conscious cognitive and behavioural efforts by the individual to adapt to external and internal demands appraised as taxing or exceeding the individual’s resources.

**Coping style**- an individual’s preference for certain coping responses, either across
situations or over time within a given situations.

**Chronic stress** - the long-term product of exposure to persistently demanding situations that an individual appraises as taxing or exceeding their resources.

**Emotion-focused coping** - coping directed at regulating emotional responses to the stressor.

**Primary appraisal** - judgements that a transaction is irrelevant, benign-positive, or stressful. Stress appraisals include harm/loss, threat, and challenge.

**Problem-focused coping** - coping directed at managing or altering the source of the stress.

**Secondary-appraisal** - the evaluation of coping resources and coping options.

**Self-Esteem** - a personality disposition reflecting an individual's belief in their own ability.

**State Anxiety** - a current feeling of nervousness, apprehension, tension, or a combination of these, which is accompanied by physiological activation of the individual.

**Stress** - a perceived imbalance between environmental demands and the individual's resources to cope with those demands.

**Stressors** - external (environmental) stimuli and/or internal (cognitive) perceptions that cause the stress response.
Stress has been conceptualised in numerous ways in the literature. However, most researchers have defined stress in one of three ways: a stimulus, a response, or the result of some transaction between aspects of the environment and the individual (e.g., Cannon, 1932). Perhaps the most common framework adopted by psychologists for examining stress is as a stimulus. Stimulus models focus on the source of tension and discomfort resulting from environmental events, or stressors, that place excessive demands on the individual (e.g., Cannon, 1932; Holmes & Rahe, 1967). According to this definition, certain environmental events are universally stressful to all individuals. These include major environmental changes (e.g., natural disasters), major life changes, and daily hassles (Lazarus & Cohen, 1977). Lazarus and Folkman (1984) have criticised this approach because it assumes that certain situations are normatively stressful and does not allow for individual differences in the evaluation of events.

Another framework for examining stress is as a response. The response model of stress is defined as the non-specific reaction of the body to any demand placed upon it (Selye, 1956). This model has two interrelated components. The psychological component involves behaviour, emotions, and thought patterns (e.g., “you feel nervous”) and the physiological component involves heightened bodily arousal (e.g., pounding heart, dry mouth, perspiration). The main limitation of this definition arises from having to define stress by the response. Lazarus and Folkman (1984) further note, that all stimulus-response approaches to stress are circular and fail to address the question of what it was about the observed stimulus-response relationship that determined the stress. The stimulus-approach models also fail to recognise the role of cognition and individual differences in the stress process.

Defining stress as a process, or interaction, between the person and the environment, is inherent in the transactional model of stress and coping proposed by
Lazarus and his colleagues (e.g., Coyne & Lazarus, 1980; Lazarus, 1966, 1981; Lazarus & Launier, 1978; Lazarus & DeLongis, 1983; Lazarus & Folkman, 1984). According to the transactional model, stress is neither strictly a function of personal factors nor exclusively derived from the environment, but is a mutually reciprocal, bi-directional relationship between the personal and environmental factors (i.e., transactions). Stress results when the demands of "a particular relationship [transaction] between the person and environment is appraised by the person as taxing or exceeding his/her resources" (Lazarus & Folkman, 1984, p. 19), thereby posing a threat to the person's well being. Thus, stress, according to this approach, is neither a stimulus nor a response, but a dynamic process (Lazarus, 1966), in which the individual is an active agent. This latter framework of stress reflects the theoretical foundation of the present research.

The Transactional Model of Stress

The transactional model of stress (e.g., Coyne & Lazarus, 1980; Lazarus, 1966, 1981; Lazarus & Folkman, 1984; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986a) identifies two processes, cognitive appraisal and coping, as critical mediators of stressful person-environment relationships and their immediate and long-term outcomes. Cognitive appraisal and coping are both transactional variables. According to Folkman et al., (1986a) they refer not only to "the environment or person alone, but the integration of both in a given transaction" (p. 572). Cognitive appraisal is an evaluative process that determines to what extent transactions between the person and environment are stressful (Lazarus & Folkman, 1984). Coping refers to the cognitive and behavioural efforts to manage, reduce, or tolerate the internal and external demands of the person-environment transaction appraised as taxing or exceeding the individual's resources (Lazarus & Folkman, 1984). The concept of coping will be reviewed later.

In this model, cognitive appraisal of a situation determines "why and to what extent a particular transaction... between the person and environment is stressful"
It refers to the process, of categorising an encounter and its various facets, with respect to significance for individual well-being (Lazarus & Folkman, 1984). Cognitive appraisal includes both primary and secondary appraisals that are interdependent, and influence each other during an encounter. According to Lazarus and Folkman (1984), the use of the terms primary and secondary, in describing appraisal may be misleading because it suggests that one is more important than the other, or that one precedes the other in time. The authors contend that neither meaning is intended. The terms primary and secondary, therefore, represent an attempt to operationalise the two basic forms of appraisal.

Primary appraisal, refers to an evaluation of the personal significance of the transaction for the individual with respect to well-being, and addresses whether the encounter is stressful (Cox, 1987). The questions raised include "what do I have at stake in this encounter" or "am I in trouble or being benefited, now or in the future, and in what way" (Lazarus & Folkman, 1984, p. 31). Lazarus and Folkman (1984) distinguish between three kinds of primary appraisal, namely, irrelevant, benign-positive, and stressful. Irrelevant appraisals refer to encounters with the environment that hold no implication for the person's well-being. Irrelevant appraisals require no value or commitment from the person, and there is nothing to be gained or lost in the transaction. Benign-positive appraisals involve construing the outcome of encounters as positive. They are characterised by pleasurable emotions (e.g., love, happiness, peacefulness), that preserve and enhance well-being, or promise to do so (Lazarus and Folkman, 1984).

Stress appraisals, the focus of this study, involve the perception of harm/loss, threat, and challenge that develops when perceived external or internal demands exceed or tax the person's perceived sources (Lazarus & Folkman, 1984). Stress appraisals are influenced by antecedent person and situation characteristics (Folkman, 1991). Thus, the personal significance of an encounter is determined by the individual's pattern of
motivation (e.g., commitments, goals, values), beliefs about the self and the world, and their personal resources for coping with stress. It is the individual differences in these variables that help explain why encounters appraised as threatening for some, may be appraised as neutral or challenging for others.

Harm/loss appraisals refer to physical or psychological damage already sustained, including an incapacitating injury or illness, loss of a valued/loved person, or recognition of a damage to self-social esteem (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). Threat appraisals refer to the person’s expectations of future harm or losses. Threat appraisals can also influence previous harm/losses, because according to Folkman and Lazarus (1984), “every loss is also pregnant with negative implications for the future” (p. 33). Threat, however, unlike harm/loss, serves a primary adaptational function, in that it permits anticipatory coping. For example, individuals high in self-esteem may perceive an event as stressful but they interpret it as a challenge rather than a threat, because they believe they have the resources to meet the demands placed upon them (Cohen & Lazarus, 1983). The appraisal of stress, depends heavily on harm/loss and threat appraisals.

Challenge appraisals focus on the opportunity for growth or mastery in an encounter, and the potential for benefit (Lazarus & Folkman, 1984). Challenge appraisals are similar to threat appraisals in that they also call upon the mobilisation of coping efforts. Challenge appraisals are characterised by pleasurable emotions, including excitement, exhilaration, and eagerness, whilst threat appraisals focus on the potential for harm, and are characterised by negative emotions, such as fear, anxiety and anger. Lazarus and Folkman (1984) indicate that threat and challenge appraisals should not be viewed as dichotomous, but rather, as separate, and often related constructs that can occur simultaneously. The relationship between threat and challenge appraisals can alter as the situation progresses. For example, a situation initially appraised as threatening may later
be appraised as challenging because of cognitive coping efforts that create a more positive person-environment relationship (Lazarus & Folkman, 1984).

After making a primary appraisal the individual assesses coping options and available resources (e.g., “What can I do”) (Lazarus & Folkman, 1984, p. 31). This is referred to as secondary appraisal. Secondary appraisal is thus a complex evaluative process concerned with what a person thinks and does in an encounter (Folkman & Lazarus 1980), and involves efforts taken to manage, resolve, or shape the experience. Secondary appraisal also involves an expectation that a given coping option will accomplish what it is supposed to, and further, that these particular strategies can be applied effectively. Bandura (1977; 1982) emphasises the distinction between these two expectancies. Bandura used the term *outcome expectancy* to refer to the individual’s evaluation that a given behaviour would lead to certain outcomes, and *efficacy expectation* to refer to the individual’s personal conviction they could successfully execute the required behaviour. In addition, the appraisal of coping options involves an evaluation of the consequences of using a chosen strategy in the context of other internal and/or external demands occurring simultaneously. To use a sport example, consider the athlete who is facing a match game-point in tennis. The athlete knows that if they serve an ace they will win the competition. This would be an example of their outcome expectancy. The athlete’s personal belief in his or her ability to produce an ace, however, would be an example of the athlete’s efficacy expectation.

Sometimes a situation initially appraised as threatening may later be appraised as challenging (Lazarus & Folkman, 1984). This process called cognitive reappraisal, refers to appraisals that change on the basis of new information from the environment. A reappraisal, then, is “an appraisal that follows an earlier appraisal in the same encounter and modifies it” (Lazarus & Folkman, 1984, p. 38). The difference between an appraisal and reappraisal is, therefore, temporal, in which appraisal precedes the use of coping
strategies and reappraisal follows coping efforts.

Taken together, primary appraisals of what is at stake and secondary appraisals of coping options interact with each other in shaping the individual's perceptions of stress, frequency and intensity, and the strength and effectiveness of their emotional and behavioural reactions. Primary and secondary appraisal combine to "determine whether the person-environment transaction is regarded as significant for well-being, and if so, whether it is primarily threatening...or challenging" (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986a, p. 993). Identifying primary and secondary appraisal are key elements in the coping process in attempting to understand what individuals actually think and do in a stressful encounter (Holroyd & Lazarus, 1982). To date, research concerning the appraisal and coping process in competitive sport is virtually non-existent.

The Effects of Stress on Cognition and Performance

Stress is a persistent and inherent feature of competitive sport (Anshel, 1990; Anshel, Gregory, & Kaczmarek, 1990). It has been widely recognised in the sport psychology literature that stress experienced by athletes may impede performance and reduce enjoyment of participating in the sport experience (e.g., Burton, 1988; Graham & Crocker, 1995; Gould, Petlichkoff, Simons, & Vevera, 1987; Jones & Hardy, 1990).

Stress, however, may not necessarily have a negative effect well-being. A certain amount of stress is necessary for healthy living and a productive lifestyle (Benson, 1975). Stress may be adaptive, because "its physiological effect is to prepare the individual to deal with the demands of the situation" (Kaissidis, 1994, p. 24). Stress is often needed to reach and maintain optimal arousal before and during an event (Anshel, 1990; Anshel et al., 1990), or to serve as a motivator for the accomplishment of various tasks. However, when stress becomes excessive, it may have deleterious psychological and somatic effects on well-being (Anshel, 1990). When individuals believe they do not have the resources to deal with situations, an array of psychological and physiological symptoms may arise.
The short-term effects of excessive stress include anxiety, headaches, muscle tension, and reduced concentration, while the long-term physical effects may result in migraine attacks, immune system deficits, ulcers, coronary heart disease, hypertension, and even premature death (e.g., Kamarch & Jennings, 1991; O'Leary, 1990).

A plethora of sport-related studies have shown that stress is also related to sport performance and the negative effects of excessive amounts of stress on the athletes' physiological and psychological well-being has been documented (for reviews, see Burton, 1988; Wilks, 1991). For example, excessive stress in sport may inhibit physical performance and contribute to psychological symptoms, such as anxiety, and reduced satisfaction in the activity (Kleine, Sampedro, & Melo, 1988; Mace & Carroll, 1986). Findings from the stress-illness literature have also demonstrated that excessive physiological and psychological stress induced by sports competition increase the likelihood and severity of injuries compared (e.g., Kerr & Minden, 1988). Further, once injured, the athlete is subjected to even more stress, which may interfere with the healing process (Lynch, 1988).

**Chronic and Acute Stress**

The distinction between chronic and acute stress is determined by the duration of the event, and the demands placed on the individual. Chronic stress refers to those stressors that are long-term and persistent (e.g., work conditions, chronic illness), as opposed to short-term stressful events. Chronic sources of stress in sport may involve internal pressures, including anxiety about performance success and failure, fulfilling personal goals, and perceptions about winning. In sport, examples of chronic stressors include, meeting the expectations of coaches, team-mates and fans, high competition demands, demands on time and energy, difficulties with team-mates, poor skills, boredom, and poor relationships with the coach (Anshel, 1990; Orlick & Botterill, 1975). When these sources of stress are chronic (long-term), the result may lead to poor sport
performance, demotivation, burnout and the eventual withdrawal from competitive sport (dropout) (Martens, 1978; Orlick & Botterill, 1975; Smith, 1986).

Acute stress involves short term, time-limited stressors (e.g., making an error, receiving a bad umpire call) (Anshel, 1990). In sport, acute, game-related, stress occurs when the athlete is suddenly confronted with input of an unpleasant nature, and although it may include physical contact, the most common forms are psychologically based (Anshel et al., 1990). Examples of acute sport related stressors include, dealing with the pain of a sudden injury, reacting to an opponents sudden success, making a performance error (physical), a poor game score, receiving unpleasant input from observers (e.g., booing), team-mates (e.g., teasing, criticising), coach (e.g., reprimanding), or opponents (e.g., intimidating remarks, winning), and dealing with poor referee judgments (Anshel, 1990).

There are several short and long-term psychological and physiological effects of acute stress in sport (see Anshel, 1990, for a review). The short-term effects of acute stress in sport include, reduced ability to focus attention on relevant aspects of the situation, reduced ability to make rapid decisions, reductions in mental preparedness in performing and risk-taking behaviour. Acute stress may also increase muscular tension and reduce motor co-ordination. The long-term effects of acute stress include, decreased motivation, lowered self-esteem and self-expectations, poor athletic performance, and may also result in burnout and dropout of competitive activity (Martens, 1978; Orlick & Botterill, 1975; Smith, 1986). In summary, acute stressors can negatively affect numerous cognitive and psychophysiological processes.

The need to distinguish between chronic and acute sources of stress is important because researchers have recognised that different stressors may necessitate different coping strategies for effective coping (Anshel, 1990; Matheny et al., 1986; Smith, 1986). In a rapidly played sport, such as basketball or field hockey the distinction between acute
and chronic stressors is important, as the contest’s speed allows little opportunity for extensive cognitive activity during the competition. Thus, in acute stress situations, where time pressures are present, decisions must be made quickly, “on the spot” (Anshel, 1990). This allows no opportunity to study the available options (e.g., problem-solving behaviour, seeking advice, social support) or to practise the coping responses available in chronic stress situations.

Further, during the contest, it is likely players may experience some irrelevant cognitive thoughts, including distraction from external stimuli, fatigue, self-evaluations and worries about failure, and thus it would appear that the psychological skills and coping response of players must have an influence on game outcome (Anshel, 1990). It would appear, then, that different coping strategies may be more effective when dealing with acute as opposed to chronic stressors. Thus, in order to develop effective coping strategies in sport, it is essential to first identify the sources of stress considered most stressful by the athletes under investigation (Meichenbaum, 1985; Taylor, 1992).

**Sources of Stress in Sport**

Researchers over the years have examined sources of stress for athletes in various competitive sports (e.g., Cohn, 1990; Gould & Weinberg, 1985; Scanlan & Passer, 1978, 1979; Weiss, Wiese, & Klint, 1989). These include basketball, (Madden, Summers, & Brown, 1990), figure skating (Scanlan, Stein, & Ravizza, 1988; Gould, Jackson, & Finch, 1993b), golf (Cohn, 1990), gymnastics (Weiss, Wiese, & Klint, 1989), soccer (Scanlan & Passer, 1978, 1979) and wrestling (Gould, Horn, & Spreeman, 1983a, 1983b). The methods used in these studies to assess stress include structured interviews and self-report measures, were based on theoretically or empirically developed surveys. Each of these studies have indicated the deleterious effects of stress on athletic performance, as noted previously.
One area of sport psychology that has received limited attention by researchers is that of stress and coping among younger athletes. Gould (1982) reported that competitive stress placed on young athletes and helping young athletes cope with competitive stress were top priorities in a questionnaire undertaken by sport psychologists and non-school youth sport coaches. Past studies on competitive stress in youth sports have examined the interpersonal and situational factors related to stress in the young athlete as a central concern (e.g., Gould, Horn, & Spreeman, 1983b; Lowe & McGrath, 1971; Passer, 1981, 1982; Pierce & Stratton, 1981; Scanlan & Passer, 1978, 1979; Simon & Martens, 1979).

Determining the sources of stress for young athletes is important because it allows insight into the conditions that may cause or influence stress levels, help understand the causes for dropping out of sport, and is therefore an important feature in developing stress management intervention programs. As Sarason, Johnson, Berberich, and Siegel (1979) note in the general psychology literature, only when the sources of stress have been identified can more effective stress management programs be generated.

For years, researchers have addressed reducing children’s competitive stress and enhancing the general emotional quality of their sporting experience over the years (e.g., Duda, 1985; Smoll & Smith, 1988). In one study examining the sources of stress in youth sport, Pierce and Stratton (1981) surveyed 543 youth sport participants (ages 10-17) on their “biggest worry” when participating in sports. They found that “44.2% of the respondents indicated they were prevented from playing their best because of certain sources of stress” (p. 161). The most frequent sources of worry cited by respondents were, “not playing well” (63.3%) and “making mistakes” (62.5%) (p. 161). The young participants also indicated they were frequently worried about input from significant others as a source of stress, in particular, parents (11.2%), coaches (24.9%), and teammates (24.7%).

Scanlan and her colleagues (Scanlan & Lewthaite, 1984; Scanlan & Passer, 1978;
1979) investigated the intrapersonal and situational factors related to state anxiety levels of youth sport participants prior to competition using the Competitive State Anxiety Inventory (children's form; (CSAI-C) and the Spielberger State Anxiety Inventory children's form (SAI-C), as the indicant of competitive stress. The researchers found that higher pre-competitive state anxiety and trait anxiety levels were related to lowered personal performance expectancies, lower team performance expectancies, lower levels of self-esteem, greater perceived worries about failure and greater perceived parental pressure to participate. The Scanlan and Passer (1978, 1979) studies on youth soccer players, aged 10-12 years, indicated that both boys and girls were affected by common sources of stress.

In another study, Gould, Horn, and Spreeman (1983b) investigated the perceived sources of stress in 458 junior elite wrestlers prior to competition. From the 33 listed sources of stress the most frequently cited included not performing to level of ability, not improving on last performance, participating in championship meets, not wrestling well, losing, not making weight, and not being mentally prepared to wrestle. However, as the researchers noted, only 53% of the wrestlers stated they experienced some sources of stress, suggesting the importance of individual differences in relation to the frequency of sources of stress for young athletes. However, not all children, experience competitive stress, nor do all competitive circumstances induce stress in children athletes (Scanlan, 1978; Scanlan & Passer, 1978). Gould et al. (1983b) indicated the need to “replicate and extend [these] findings with samples of athletes engaged in other sports, with non-elite athletes and with female athletes” was an important one (p. 170).

Scanlan, Stein, and Ravizza (1988) studied sources of stress among former elite figure skates participating at the national level. Often viewed as the “groundbreaking and model approach in qualitative sport psychology research” (Jackson, 1994, p. 583), the aim of their research was to investigate the sources of enjoyment and stress in elite figure
skaters. The data were collected using interviews, which were inductively content-analysed to reveal five major categories of stress sources for elite figure skaters. These included the negative aspects of competition, negative significant other relationships, demands and costs of skating, personal struggles, and traumatic experiences. The use of clarification and elaboration probes allowed the participants to expand on their responses, ensuring a complete, in-depth understanding of the sources of stress identified. The researchers concluded that the skaters had to cope with diverse stress sources corresponding to the various aspects of their sport experience.

Cohn (1990) also utilised the interview approach when he examined the perceived sources of stress in high school golfers. A typology analysis of the interviews identified a number of competitive sources of stress for golfers. The most frequently cited sources of stress included trying to perform to personal standards (100%), playing difficult shots (100%), performing in front of a crowd (90%), playing in poor weather (90%), and striving to meet parental expectation (90%). These results correspond to the sources of stress reported by athletes from other sports including, wrestlers (Gould, et al., 1983b), former elite ice-skaters (Scanlan, et al., 1988).

A number of factors have been identified as prevalent sources of stress for youth participants. Examples have included difficulties with peers, problems with coaches, increased demands on energy and time, and worries about not performing well (Cohn, 1990; Gould, et al., 1983b; Orlick & Botterill, 1975; Pierce & Stratton, 1981; Scanlan & Passer, 1978; 1979; Scanlan, et al., 1988). A number of researchers contend that when these sources of stress are chronic, involving a long-term imbalance between the demands of the situation and coping resources, they can negatively affect youth sport participants. The result of chronic stress for some individuals may include lack of fun in previously enjoyed activities, poor performance, burnout and the eventual withdrawal from sport competition (Cohn, 1990; Martens, 1978; Orlick & Botterill, 1975; Smith, 1986).
In summary, researchers have identified several sources of competitive stress for male and female youth sport athletes participating in individual and team sport activities (Martens & Gill, 1976; Pierce, 1984; Pierce & Stratton, 1981; Scanlan, 1977; Scanlan & Lewthwaite, 1984; Scanlan & Passer, 1978; 1979). These include low personal performance expectancies, worries about failing, poor performance increases stress experiences during competition, losing, not playing well, and not having fun.

The Measurement of Stress

Stress in sport has been measured primarily in four ways, physiological measures, performance quality and outcome, behavioural observation and cognitive measures. Physiological measures of stress include, biochemical measures (e.g., secretion of hormones or catecholamines), blood pressure, galvanic skin response and heart rate. Limitations of the physiological approach for measuring stress include, the need to employ artificial, not real-life stressors, the need for equipped laboratories, and fostering undesirable emotions (e.g., anxiety) through using electrodes and other intrusive physiological devices (Sarafino, 1994). Performance measures of stress involve gauging the individual’s ability to perform certain tasks after exposure to unpleasant stimuli. Limitations of performance tests to measure stress include the failure to recognise the influence of environmental factors, such as the weather, athletic surroundings (e.g., the field or court), crowd behaviour, and internal factors, including fatigue and motivation of subjects.

Measuring stress in sport through behavioural observations involves evaluating the athlete’s performance by a third person (e.g., coach, spouse, supervisor) who is familiar with the criteria for performance quality. A limitation of behavioural measurements of stress is that they often fail to correlate highly with physiological or psychological instruments, which are supposed to measure similar outcomes (e.g., Rotella, McGuire, & Gansneder, 1985). The cognitive or self-report approach to
measuring stress involves interviews or psychological inventories that are designed to record the individual’s perceptions of stressful events. Arguments against the use of self-report measures are based on methodological problems and limitations inherent in survey methods (see Lazarus & Folkman, 1984, for a review). For example one cannot be sure subjects honestly report their experiences about stressful events. Researchers cite as limitations of self-report instruments, the subject’s desire to appear in a positive light, memory problems, language ambiguity, and retrospective falsification (Lazarus & Folkman, 1984). Thus, the use of self-report measures may account for inaccuracies in the findings (Lazarus & Folkman, 1984).

Because of the disadvantages inherent in the various methods of measuring stress a combination of different methods is required. Patton (1990) refers to this technique of combining methods as ‘triangulation.’ According to Patton (1990), triangulation permits the gathering of evidence in more than one way in order to provide increased support for the generated findings. Thus as Patton (1990) notes, triangulation provides an important means of strengthening a study design by “using several kinds of methods or data, including quantitative and qualitative approaches” (p. 187). According to Patton (1990), the disadvantages of the various methods of measuring stress may therefore be reduced by using a triangulation approach (i.e., combination of different methods).

Other researchers have also suggested that methods such as direct observation and physiological assessment may help verify some self-report items (e.g., Auerbach, 1989; Folkman & Lazarus, 1985). However, poor correlations identified between the physiological, behavioural and subjective responses to stress, and the financial and technical difficulties associated with collecting these data simultaneously, has meant the continued use of self-report data in field research (Cook, 1985; Crocker et al., 1988).

Self-report measures of psychological stress and coping remain the primary method of gaining insight into the coping process following stressful events. Several
studies support the use of self-report measures as adequate measures of the stress and coping process (e.g., Folkman & Lazarus, 1980; Lazarus & DeLongis, 1983; Lazarus & Folkman, 1984; Miller, 1992). Lazarus and Folkman (1984) suggest the use of self-report measures allows for a description of the coping process, and represents the primary means by which chronic and acute stress have been measured in recent years.

**Dispositions Influencing the Stress and Coping Process**

According to Gould (1993) examining trait anxiety and self-esteem in child athletes is important, because these dispositions can influence the individual’s perception of demands generated from the environment. Trait anxiety is defined as a “predisposition to perceive certain environmental stimuli as threatening or non-threatening and to respond to these stimuli with varying levels of state anxiety” (Martens, 1977, p. 9), and state anxiety refers to “existing or current emotional state characterised by feelings of apprehension and tension associated with activation of the organism” (p. 9) (e.g., butterflies, queasy feeling in the stomach). However, trait anxiety unlike state anxiety is considered to be an enduring attribute and part of one’s personality.

Passer (1983) was the first to study the high-competitive-trait anxious young athlete. He compared 163 high- and low-competitive-trait-anxious youth soccer players, aged 10-15, on self-esteem, performance expectancies, criticism for failure expectations, perceived confidence, and performance- and evaluation-related worries. Results revealed that high-anxious players worried more frequently about losing, not playing well, and coach, parent, and team-mate evaluations.

Brustad and Weiss (1987) studied 55 baseball and 55 softball players, aged 9-13, and found that male baseball players high in competitive trait-anxiety were lower in self-esteem than those males low in competitive trait-anxiety, but these differences were not apparent in the female youth softball players. However, Brustad (1988) in a follow-up study of 207 youth basketball players found that higher competitive trait-anxiety was
associated with lower self-esteem for both boys and girls.

Self-esteem is defined by Coopersmith (1967) as "a personal judgement of worthiness that...expresses an attitude of approval or disapproval and indicates the extent to which an individual believes himself to be capable, significant, successful and worthy" (p. 5). According to Weiss (1993), Coopersmith's definition is particularly relevant to sport as it highlights the extent to which a person believes himself or herself to be competent and successful. Thus, it is the individual's cognition's and perceptions of their own ability, and not their objective ability per se, that are most revealing with regard to attitudes and behaviour in a particular achievement domain (e.g., sport).

**Stress in Children and Gender Differences**

According to Sorensen (1993), gender is an important mediating variable in children's stress and coping. Miller and Kirsch (198) defined gender as "a constitutive element of social relationship based on perceived differences between the sexes" (p. 285). Sorensen (1993) has suggested that whether or not gender is the primary purpose of the research, "taking note of gender differences in studies of children seems an important methodological detail" (p. 69). Researchers have noted that although boys and girls do not differ in the number of hassles experienced, evidence suggests they are experienced differently (Kanner, Feldman, Weinberger, & Ford, 1991; Sorensen, 1993). For example, Kanner et al. (1991) noted that girls consider parents fighting, sibling interference, not liking one's own appearance, teasing, losing something, parental concerns, feeling inferior to other children, and not enough privacy, to be more 'potent' or significantly worse than did the boys. Sorensen (1993) also identified gender differences in reports of stress experiences, noting that boys identified more situational stressors than did girls, while girls reported more stressors related to self and others.

Another methodological consideration when examining stress and coping research among children concerns whether information provided about children and stress, "is
provided by children, regardless of its content” (Sorensen, 1993, p. 53). In either case there are implications for valid theory development, methodologies and clinical validity. For example, Cohen (1985) noted that even in the use of life-events scales, reliable data are best drawn from personal interview. However, in research among children, there has been limited data obtained from the children (subjects) themselves. For example, both Coddington (1972) and Chandler (1981) developed widely accepted instruments for measuring stress events in children from data gathered from mental health professional and teachers, without validation by children. Cohen (1985) further questioned the validity of using only measures of parental report, in her own study of siblings with cancer. Where possible, Cohen (1985) recommended data collection directly from child subjects. In summary, “data on the child's world is best obtained directly from the child rather than indirectly through the eyes of the parents” (Cohen, 1985, p. 29).

In the past, research about children “focused overwhelmingly on stress and stressors, with less attention paid to the processes of appraisal or coping, particularly as empirically defined or validated by children themselves” (Sorensen, 1993, p. 53). However, as Cox (1991) notes there is considerable recent multidisciplinary interest in cognition, perception, and individual meaning from the child’s point of view. It is has become increasingly evident that data from parents, teachers, or clinicians may not accurately represent the child’s worldview. For example, in a study relating stressful events to divorce, Wolchik, Sandler, Braver, and Fogas (1986) compared ratings of parents, clinicians, and children. When the rank orders were correlated, the assigned stress values as perceived by the children were notably different from those assigned by parents and clinicians, substantiating the significance of individual perception of appraisal, and the need for measures sensitive to children’s perceptions. Other studies that compared the ratings of parents, clinicians and children also demonstrated significant differences between adults’ and children’s perceptions (Ryan, 1988; Wolchik et al., 1986;
Yamamoto & Felsenthal, 1982). Recently, studies have included children's own appraisals and coping reports in particular chronic stressor situations (e.g., Grey, Cameron, & Thurber, 1991). Even in the use of life-events scales, appraisal is recognised as an important variable. Call (1983) in her study of 264 seventh-grade children demonstrated the significance of the mediating variable of individual appraisal, suggesting that, particularly among children, individual perception (appraisal) is more significant statistically and clinically, than scores on stress-events scales.

Atkins (1991) reviewed 14 studies of stress and coping from children's perspective's. Of these investigations two sought data from children in interviews at home (Taylor, 1980; Walker, 1988) with all other settings involving school classrooms or hospitals. Of these studies, five involved children as medical patients, two involved siblings of chronically ill children, and seven involved well children. Of these studies ten employed interviews with children, from which four identified inductive categories of stressor coping lists (Dibrell & Yamamoto, 1988; Ryan, 1989; Taylor, 1980; Walker, 1988). Those studies identified in Atkins review were attempts to begin to identify and define stressors from the child's point of view. In summary, Sorenson (1993) highlighted the need to identify the sources of stress, cognitive appraisals and coping responses from the child's perspective; and recognise and accommodate gender differences as the study of children's stress and coping evolves.
The proliferation of research on coping is representative of the important role of coping in mediating relationships between stressful events and adaptational outcomes (e.g., psychological symptoms, somatic illness) (Billings & Moos, 1981; Coyne, Aldwin, & Lazarus, 1981; Endler & Parker, 1990; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986a). Coping is, therefore, a vital factor in moderating and buffering stress relationships. Coping has also been defined as the "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141).

Researchers describe the coping process, as a conscious effort by the individual to minimise or manage the deleterious effects of stress. (e.g., Anshel, 1990; Endler & Parker, 1990; Stone & Neale, 1984).

Compas (1987) suggests that coping reflects a strategy, and does not inherently infer success in reducing distress. As Weidner and Collins (1993), suggest the coping process may be either adaptive (successful) or maladaptive (unsuccessful). Compas, Malcarne, and Banez (1992) note that coping is frequently equated with successful adaptation, however a given coping strategy may not necessarily be equally effective in a variety of different situations. Coping effectiveness is evaluated by the "appropriateness of the coping strategy given the demands and constraints of the situation" (Lazarus & Folkman, 1984, p. 41). Effective coping therefore depends on the 'goodness-of-fit' between both reality and the appraisal, and the appraisal and coping efforts (Lazarus & Folkman, 1984).

**Approaches to Coping**

A number of theoretical approaches have contributed to our understanding of the concept of coping. These include, coping as a psychoanalytic process, a personality trait, and a cognitive process (Cox, 1987; Cox & Ferguson, 1991; Folkman & Lazarus, 1980).
The psychoanalytic and personality trait approaches stress the importance of personality characteristics in determining how people cope with stress (Aldwin, 1994). The psychoanalytic study of coping is founded on defence mechanisms (Freud, 1933), which are primarily unconscious and directed toward internal conflict. Defence mechanisms are the means by which the ego wards off anxiety, and exercises control over impulsive behaviours, affects, and instincts (Freud, 1966). These mechanisms are assumed to be founded in unconscious conflicts stemming from childhood trauma. The focus of these defence mechanisms is, to regulate emotions and reduce anxiety by whatever means possible (Aldwin 1994), and ensure the restoration of equilibrium and tension reduction. According to Lazarus and Folkman (1984) these defense mechanisms represent neurotic modes of adaptation manifested primarily as symptoms, characterised by automatic and rigid reactions, with little attention given to the problem-solving functions of coping (Folkman, 1991; Folkman & Lazarus, 1991; Lazarus & Folkman, 1984). The primary focus in the psychoanalytic approach is the individual, based on case studies and intensive interviews or observations over long periods of time.

Researchers who conceptualise coping as a personality trait emphasise the influence of personality characteristics on coping responses (e.g., Kobasa, 1979; Krohne, 1993; Miller, 1992). A trait refers to a stable property of the person that shapes actions and reactions, and transcends to some extent the pull of situational pressures. In the trait-oriented research, the specific coping behaviour is not examined, because the person is asked how they “usually” cope in situations. Thus, there is no specific context, since the individual reports only on what usually happens, with particular situations disregarded. Thus, coping processes are inferred, but not actually studied (e.g., Kobasa, Maddi, & Courington, 1981; Kobasa, Maddi, & Kahn, 1982).

This strict personality approach ignores any environmental demands that may shape an individual’s behaviour (Aldwin, 1994). Further, in trait oriented approaches coping is primarily assumed to be the property of the person, with variations in the
stressful situation being of little importance. Lazarus and Folkman (1984) also criticise the uni-dimensional quality of most trait measures, suggesting they "do not adequately reflect the multi-dimensional quality of coping processes used to deal with real-life situations" (p. 129).

The cognitively-oriented process approach views coping as a function of the 'transaction' between personal, situational, and environmental factors. This approach rejects the view that coping can be characterised as a stable trait, or that stress reactions are caused solely by characteristics of the environment. This transactional approach assumes that coping is dependent on the individual's cognitive appraisal of the situation (e.g., Folkman, & Lazarus, 1980; Lazarus & Folkman, 1984; Lazarus & Launier, 1978). Further, the cognitive process assumes the individual is flexible in their choice of coping strategies, and can modify these strategies according to the demands of the particular problem (i.e., situational specificity). Cognitive theorists identify which coping strategies are used in specific situations, and the conditions under which the strategies do or do not promote positive adaptation.

A critical difference between the cognitive process oriented and trait oriented approaches, is the "significance given to the psychological and environmental context in which coping takes place" (Folkman et al., 1986a, p. 992). In the process oriented approach the context is critical because "coping is assessed as a response to the psychological and environmental demands of specific stressful encounters" (Folkman et al., 1986a, p. 992). Although coping processes are usually assessed contextually, their impact is usually evaluated without regard to their context. The result, is "a lack of information about the contextual variables that influence them" (Folkman et al., 1986a, p. 992), and the relation between coping processes and outcomes of the specific stressful encounter in which they occur. This information is essential for understanding variations in the coping processes.

In summary then, three themes emerge from critiques of these approaches.
Namely, that coping should be viewed as relational, in that it reflects the relationship between the individual and the environment (Folkman, 1982), as a process, in contrast to the more traditional trait oriented approaches (Cox, 1987; Folkman et al., 1986a) and finally, integrative in nature in that it links the other components of the stress process (Cox & Ferguson, 1991). These three themes are evident in the contextual (transactional) model of coping that features widely in the current coping research (e.g., Aldwin & Revenson, 1987; Anshel, 1990; Forsythe & Compas, 1987; McCrae, 1984).

The Transactional Model

The transactional approach to coping forms the foundation of the Lazarus and Folkman coping research, which features largely in the present study (Folkman, 1991; Folkman & Lazarus, 1980; 1985; Folkman et al., 1986a; Lazarus & Folkman, 1984). Lazarus and Folkman (1984) define coping as the “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). The transactional model is concerned with process and change in contrast to traditional models which are static and structural (e.g., psychoanalytic, trait approaches). The coping process has three key features, namely, what the person actually does, the particular context it occurs in (i.e., coping is responsive to contextual requirements) and finally how, what is done changes as the stressful encounter unfolds. The contextual model examines the person-environment relationship (i.e., transaction) within the context of a single stressful episode, hence the term contextual (Lazarus & Folkman, 1984). Person and environment variables influence appraisal, which determines the type of coping response. Coping outcomes, in turn, influence the appraisal process.

Cognitive appraisal refers to the process of categorising an encounter and its various facets with respect to its significance for the individuals’ well-being (Folkman & Lazarus, 1984). Appraisal refers to the cognitive evaluation of the stressors demands and
the individuals ability to respond to the demands. Coping changes continuously as a function of further appraisals and reappraisal's of the shifting person-environment relationship. Changes may result from coping efforts directed at changing the environment or the meaning (i.e., appraisal) of the situation, or environmental changes that are independent of the person.

In summary, although the study of coping has its roots in the recognition that there are individual differences in reactions to stress, the transactional approach requires a more contextual view of the situation, and specifies that coping behaviour may change in response to its effects on the situation (Lazarus & Folkman, 1984).

**Coping Responses**

Researchers have developed two major coping formulations for classifying coping responses. The first categorises coping responses according to their focus, as problem- or emotion-focused; the second according to the method or coping style of the individual, and whether the strategies are of an approach or avoidance nature.

**Focus of Coping**

An important consensus in the coping literature is the theoretical typology of coping responses proposed by Lazarus and Folkman (1984) that distinguished between problem-focused and emotion-focused coping. Indeed, many recent coping scales tap these two coping dimensions (e.g., Billings & Moos, 1981; Carver, et al., 1989; Folkman & Lazarus, 1980, 1985; Pearlin & Schooler, 1978). Problem-focused coping, also called task orientation coping (Endler & Parker, 1990), refers to cognitive and behavioural efforts to manage or alter the problem with the environment causing the distress. Examples of these strategies include, problem solving, planning, information seeking, learning new skills, actively avoiding the stressor, seeking social support, social engineering (i.e., creating a physically distant proximity from the person), and increasing efforts. Emotion-focused coping strategies are used to regulate the emotional distress
caused by the stressor, and refer to an orientation of the person (Endler & Parker, 1990). Examples of these strategies include, cognitive and behavioural withdrawal, denial, relaxation, and the venting of emotions.

Questions surrounding this theoretical classification include, whether this classification is conceptually too broad, whether it can be sustained by the available data, and whether it offers any prediction of health-related outcomes. The evidence suggests it is a weak distinction, as it is not well supported as it stands, and has only weak predictive power (Cox & Ferguson, 1991). However despite this, it remains very popular in the literature, possibly because it is relatively unambiguous in nature (Fleishman, 1984). Even Folkman and Lazarus (1985), found their two initial dimensions of coping too simplistic, and inadequate in describing the qualitative differences between various classes of coping. They later identified eight types of coping, based on an exploratory alpha analysis of their Ways of Coping Checklist (66 items, each describing a cognitive or behavioural action), and rational grounds. These included wishful thinking, detachment, self-blame, tension reduction, keeping to self, emphasising the positive, problem-focused, and seeking social support. Indeed research has typically found that responses to the Ways of Coping Scale form several factors rather than just two (e.g., Aldwin & Revenson, 1987; Coyne et al., 1981; Folkman & Lazarus, 1985; Folkman et al., 1986a; Scheier et al., 1986).

In another study using the WCQ Folkman et al. (1986a) attempted to replicate the Folkman and Lazarus (1985) results, but found a different clustering of items and different labels for these coping strategies. These strategies include distancing, self-control, positive reappraisal, escape-avoidance, confrontation, seeking informational and emotional support. Thus agreement on the actual number of strategies, and the labels of those strategies remains undecided (Aldwin, 1994). Another area that has received relatively little attention in the sport psychology literature, but has received increasing attention in the contemporary psychology literature is coping style.
Coping Style

The second formulation of coping divides coping responses into those strategies active in nature designed to confront the problem, and those strategies involving an effort to reduce tension by avoiding dealing with problem. Roth and Cohen (1986) identified this as an approach and avoidance classification system. Similar concepts in research include vigilance and avoidance (Krohne, 1993), monitors and bluters (Miller, 1987), and avoidant and non-avoidant coping strategies (Suls & Fletcher, 1985).

Researchers suggest the effectiveness of selected coping techniques has been associated with individual preferences for using specific strategies in response to various stressors (Carver et al., 1989; Cohen, 1987; Endler & Parker, 1990). That is, people are thought to possess an orientation, or disposition, toward using a preferred coping strategy. This disposition is called coping style. According to Compas (1987), “coping styles are methods of coping that characterise individuals’ reactions to stress either across different situations or over time within a given situation” (p. 394). Thus, coping style reflects the tendency of individuals to respond in a predictable manner when confronted with a specific type of situation.

Approach coping, also called attention, engagement, sensitisation or vigilance, is the process of taking “active steps” to alleviate the effects of the stressor, or those strategies characterised by an “orientation toward threat-relevant aspects of a situation” (Krohne, 1993, p. 11). Examples of approach coping may include increasing efforts to reduce stress intensity, initiating direct action, seeking information to explain the source of stress or prevent its reoccurrence, and pre-planning a coping strategy. Roth and Cohen (1986) suggest that approach coping is preferable when: (a) the situation is controllable, (b) the source of the stress is known, or (c) when the outcome measures are long term and necessitate remaining “on task” even after the period of inactivity following the stressor. Roth and Cohen contend that approach coping is more effective than avoidance coping when action is required. For example, after an opponent achieves success (i.e., following
a physical error, or a reprimand by the coach) the athlete may, ask the coach for advice to prevent the same mistake occurring again (e.g., "How can I prevent them from successfully using that play again?"), take responsibility for the error (e.g., "I should have had that one coach"), and/or analyse the problem and plan for a different response in the future (Anshel, Williams, & Hodge, 1997). These strategies allow the athlete to regain control of the unpleasant situation. The athlete may however decide it is less stressful to ignore the coach, or allow the coach to express their anger particularly when a verbal interaction is not feasible at the time. This strategy is known as avoidance coping.

Avoidance coping, also known as disengagement, rejection, or repression involves "turning away from the threat related cues" (Krohne, 1993, p. 21). Examples of avoidance coping include avoiding a stressor by seeking other company as a distraction, discounting the importance of or ignoring the stressor, and engaging in another task rather than the present task (Endler & Parker, 1990). Roth and Cohen (1986) suggest avoidance coping is preferable when (a) the emotional resources are limited (e.g., low self esteem/confidence, low-optimism), (b) the source of the stress is not clear, (c) the situation is uncontrollable, or (d) when the outcome measures are short term or immediate. For example after a "wrong call" from the umpire or referee when the contest is ongoing, the athlete needs to remain "on task" and avoid becoming distracted by the stressor (i.e., the wrong call). An avoidance coping strategy is therefore most warranted when the source of the stress is externally controlled, because confronting the stressor will rarely improve the situation or the outcome in such circumstances (Krohne, 1993).

According to Weidner and Collins (1993) the effectiveness of a specific coping strategy depends on characteristics of the event with which one attempts to cope. For example, in the case of ongoing troubled coach/athlete problems, what might be effective in the short-run (e.g., denial as a means of avoiding emotional arousal) may be maladaptive in the long-run, as denial prevents the elaboration of other forms of coping behaviours, such as problem solving. In a meta-analysis, Suls and Fletcher (1985)
concluded that neither avoidant nor non-avoidant strategies were superior. However, when the duration of the stressor was taken into account, avoidance strategies proved to be more effective for short-term stressors (lasting no more than a week), while non-avoidant/attentional (approach) strategies were more effective when coping with long-term stressors (exceeding one week in duration) (Suls & Fletcher, 1985). One exception was short-term physical stress where attention to sensory aspects of the situation (e.g., sensory reaction to a pain stimulus), but not to the emotional aspects of the situation appeared to be adaptive (Suls & Fletcher, 1985). In addition to the time-based distinction, the controllability of the situation also determines the effectiveness of coping strategies.

In general, avoidance coping is viewed as more adaptive when the situation is uncontrollable (e.g., paralysis), whereas approach coping is better when the situation is more controllable (e.g., preparing for an exam). However, in the case of transient non-physical stress, avoidance strategies are adaptive regardless of the degree of controllability. Attending to such stressors (especially with a focus on emotions) is considered maladaptive, because their brief duration means potential energy is wasted in attempting to control transient events of no particular consequence (Suls & Fletcher, 1985; Weidner & Collins, 1993). However with regard to long-term stressors, attention (approach) is generally considered more adaptive in the long run, as many events are basically controllable when the individual has sufficient resources and time.

Anshel (1993) further contends the effectiveness of a particular coping style may depend on the situation, or on the type of sport. For example, certain sport situations may require competitors to distance themselves psychologically distance from the source of the unpleasant information, and be more selective and objective in perceiving the potentially stressful situation (Anshel, Williams, & Hodge, 1997). One appropriate response would be the avoidance coping strategy of psychological distancing. This involves understanding the source of a persons behavioural patterns and maintaining 'a detached and distant view of that difficult person while he or she is in the process of being
difficult” (Bramson, 1981, p. 168). The objective of psychological distancing is to establish a separation between the source of stress and the individual, thus labelling someone as a “complainer,” or as “negative” allows a more objective and less stressful appraisal of this person's behaviour. Thus, in a sport example, rather than becoming upset or intimidated by negative input from spectators and coaches, the athlete may be able to justify, explain, or rationalise these actions (e.g., “fans have a right to boo”) (Anshel et al., 1997).

The dimensions of approach and avoidance coping styles are not independent. Roth and Cohen (1986) suggest that whilst in some situations individuals have a strong preference for either approach or avoidance responses, the use of approach and avoidance styles are not mutually exclusive and individuals may alternate rapidly between the two coping orientations (styles). For example, certain aspects of a threatening experience (e.g., an encounter with a spectator under the influence of alcohol) should be avoided, whereas other aspects of the same experience (e.g., the notification of security personnel) should be approached.

Thus, individuals’ cannot simply be “characterised as either approachers or avoiders” (Roth & Cohen, 1986, p. 816), but rather, individuals’ display a strong preference for a particular coping style in certain situations (i.e., approach or avoidance). Thus for example, after receiving first aid from an injury (approach coping) the athlete may continue to play while ignoring the pain (avoidance coping) of that injury. Playing with the injury and pain without treatment would be more common among avoiders, whereas approachers would more likely receive treatment, and be assured that further participation will not result in more serious consequences. Anshel (1993) suggests it is “likely that a person’s choice of coping technique is affected by his or her coping style” (p. 313).
Coping Style in Sport

The concept of coping style has received only minimal attention in the sport psychology research literature (e.g., Anshel, 1996; Krohne & Hindel, 1988). Previous studies in this area focused more on the selection of coping strategies by athletes as opposed to examining coping style. For example, Bouffard and Crocker (1992), Gould, Eklund, and Jackson (1993a), and Madden, Summers, and Brown (1990), each examined the coping strategies of competitive athletes, in response to stressful athletic events. Collectively, these researchers found athletes use active, problem-focused coping, as highly adaptive strategies to manage environmental and stressful demands.

Coping style in sport has thus received scant attention. In a rare sport study, Krohne and Hindel (1988) found that elite table tennis players tended to employ an avoidance coping style in sport situations in contrast to their less skilled competitors. Their results demonstrated that athletes at both skill levels who frequently used avoidance coping strategies exhibited less state anxiety following acute stress than did players who used an approach coping style. Conversely, if the athletes employed approach coping strategies, then tactical and technical skills were less likely to be deployed. The researchers surmised that avoidance coping techniques protected the athlete against distracting thoughts and actions in situations requiring immediate decisions.

In another sport study, Williams and Krane (1992) compared the effects of four coping styles on the performance and self-confidence of elite female golfers. Coping style in this study was defined as a combination of trait anxiety and measures on the Marlowe-Crowne Social Desirability Scales reflecting the individual’s need “to obtain approval by responding in a culturally appropriate and acceptable manner” (p. 135). The four coping styles included low-anxious, repressive, high-anxious, and defensive high-anxious. The results suggested that repressors (i.e., coping style similar to avoidance coping) reported higher self-confidence than low-anxious and individuals, and further that the high-anxious and defensive high-anxious individuals reported the highest cognitive
anxiety and lowest self-confidence. Although this study did not address methods of coping with acute stress during competition, Anshel (1993) suggests the findings lend credence to the effectiveness of a repressor coping style in sport.

Researchers suggest that when considering the highly specific acute game-related stress athletes are known to experience, coping style may play a more significant role in sport psychology than in the general psychology literature from which the majority of research and conclusions are based (Anshel, 1990; Anshel et al., 1990). Indeed the success of the aforementioned sport study only highlights the need to examine coping styles more thoroughly in the sport setting before generalisations based on the general psychology literature are made for sport settings.

Coping and Gender Differences

The area of coping and gender has received little attention from both the general and sport psychology literature. According to Miller and Kirsch (1987), gender has often been cited as playing an important role in individuals' choice of coping strategies (i.e., their response to stress in a particular situation) and coping styles (i.e., their characteristic modes of dealing with stress). However, there is "surprisingly little" in the literature on gender differences (p. 278) as the "majority of the studies of cognitive coping and stress...did not report on sex differences" (Miller & Kirsch, 1987, p. 280). Thus as Weidner and Collins (1993) note, the paucity of information on gender makes it difficult to draw inferences about coping effectiveness and gender.

Several studies in the general psychology literature have compared males and females on their respective coping styles, however the differences reported remain equivocal. Stone and Neale (1984) suggest a common cultural belief is that men use more often, and are more efficient with problem-focused coping strategies, while women rely more often, and are more efficient with emotion-focused coping.
An unpublished study by Weidner, Lapp, and Hustedt (cited by Weidner & Collins, 1993) compared males and females in their use of coping strategies following short term hypothetical stressful events (defined as lasting one week or less). The results indicated that males reported more avoidance strategies than females. However, when confronted with hypothetical events threatening to one's physical well being the females reported more vigilant (approach) strategies than did the males. Given the notion that attention (approach) coping may be more adaptive when faced with short-term physical stress (Suls & Fletcher, 1985) the authors concluded that women may engage in more adaptive coping than do men when faced with physical threats.

While women's coping with short-term non-physical stress may not be adaptive, their adjustment to severe stress of longer duration seems to exceed that of men's. Research on women's adjustment to stressful events found they experience fewer negative consequences (e.g., psychological distress, physical illness) following the loss of a spouse than males (Stroebe & Stroebe, 1983). Two related studies examining problem-focused coping in chronically ill medical patients both found males used action strategies (problem-focused coping) more often than females (Viney & Westbrook, 1982; Shannon, DeNour, & Garty, 1976).

Billings and Moos (1981) further noted that while females used more emotion-focused coping in response to negative events than did males, the two groups did not differ in the use of problem-focused coping. In contrast, Lazarus and Folkman (1980) reported a tendency for men to engage in more problem-focused coping when encountering work stress than did women, however no significant gender differences emerged in the use of emotion-focused coping strategies. According to Vingerhoets and Van Heck (1990) women rated emotion-focused strategies as most characteristic of how they handled stress, while men rated problem-focused coping strategies as most characteristic (see also Stone & Neale, 1984). Other studies have also noted that females are more likely than males to seek out social support (Belle, 1987), and use emotion-
focused as compared to problem-focused coping strategies (Ptacek, Smith, & Dodge, 1994).

Sorensen (1993) noted that in coping responses with children, girls reported greater use of social support while boys reported greater use physical-social activities and were more likely to use physical aggression in coping. These findings were consistent with other research (e.g., Ryan, 1989; Wertlieb, Weigel, & Feldstein, 1987). Ryan's (1989) inductive list of school-age children's coping strategies noted that boys named significantly more physical activities, whereas girls reported more emotional responses and social support seeking behaviours. Wertlieb et al. (1987) also reported that school age girls were more likely to describe support-seeking coping responses, whereas boys reported coping in a more individualistic or self-orientated way.

In a rare sport example, Anshel, Gregory and Kaczmarek (1990) identified a gender difference in athletes emotional reactions to unpleasant information (i.e., male baseball, female softball players). The researchers noted males perceived less control over their future than females and also felt more upset, frustrated, helpless, depressed, angry, aroused, and unhappy than their female counterparts. However, the researchers suggested these differences were partially attributable to the males experiencing a long losing streak, whilst the females had experienced a winning streak.

In summary, males appear better at coping with short-term events because they use avoidance coping, in contrast females adjust better to less frequent but severely stressful events (e.g., death of a spouse). Although reviews by Miller and Kirsch (1987) and Weidner and Collins (1993) cite numerous studies indicating no gender differences in the coping process, males have generally been reported to use more approach strategies (i.e., problem solving), while females engage in more avoidance strategies (with a focus on emotions). Thus, examining gender differences in child athletes and their ability to cope with acute stress in sport remains an important area for future research.
Coping and Sport

Many sport psychology intervention investigations have importantly recognised that a limited coping repertoire or the absence of specific coping skills is a factor contributing to inadequate performance and sport dissatisfaction (Crocker, 1989b; Crocker et al., 1988; Mace & Carroll, 1985, 1989; Smith, 1980). The transactional model of stress and coping emphasises the complex process between environmental demands, perceptions of the demands, and the athlete's ability to handle or manage the demands (Crocker, 1992). The transactional model rejects the common sport usage that stress is synonymous with external pressure where the athlete is seen as under stress, and stress reactions are caused solely by the characteristics of the environment (Paterson & Neufeld, 1987). The model also rejects the view of coping characterised as a stable style or trait, and as such athletes cannot be classified as good or bad capers. Further, coping within the model is viewed as a process, and not confused or confounded with outcome (Crocker, 1992).

Thus, if an athlete is failing it does not follow that they are not coping, but rather the selected coping strategies for that specific situation may be ineffective, inefficient, or inappropriate. An example of successful coping following an acute stressor in sport may require regaining composure, establishing the appropriate mental set (i.e., the psychological readiness to respond to subsequent stimuli), and maintaining concentration and optimal arousal (Anshel, 1990). An example of an unsuccessful (maladaptive) coping strategy in sport is the athlete who responds to a "bad" call by a game official with angry confrontation. Although the athlete's anger may reduce his/her frustration (and stress) the result is unintended psychomotor responses that will impede following performance.
Measurement of Coping

According to Aldwin (1994), the study of coping has been fraught with difficulties of conceptualising and measuring. Currently, measurement approaches to coping include experimental/lab-based research where stimulus and response are clearly defined and measured in a controlled setting; personality research involving paper and pencil tests of personality (and values) where individuals self-attribute characteristics (e.g., "I am usually kind and patient") or state preferences indicating values (e.g., "I would prefer to read a book than go rowing"); and qualitative research involving subjective self-reports describing what individuals actually think and do in real situations.

In coping research individuals are asked not only "what they did, or how they behaved in a particular circumstance, but also what they thought and how they handled their emotions, using a standardised format" (Aldwin, 1994, p. 109). As Aldwin (1994) notes this approach combines both qualitative field studies and personality research, each with different assumptions, goals and research strategies, "hence the controversy" (p. 109). Aldwin (1994) suggests the dilemma fuelling this controversy includes whether to assess coping styles (i.e., stable characteristics of individuals) or coping processes (i.e., fluctuating strategies changing in response to person/environment demands), and whether the content of items be broad or specific to particular situations. Further, should research identify rich complicated descriptions of coping strategies (often psychometrically messy) or simplify dimensions thought to underlie more complex characterisations that are psychometrically more satisfying (i.e., approach-avoidance) (Aldwin, 1994). Finally if defense mechanisms are used in coping with stress, meaning that coping strategies are at least partially unconscious, how can they be assessed (Aldwin, 1994).

Aldwin (1994) contends the study of stress and coping processes represents a methodological breakthrough as most prior research focused either on self-reported personality, attitudes, and feelings, or observed behaviours in experimental settings. Recently, there has been a concerted effort in the field of psychology to have people
systematically “self-report on their own cognition’s and behaviours in specific contexts” (Aldwin, 1994, p. 83). Researchers contend that subjective reports are the primary source of data about appraisal, stress, and coping, and permit more learning about stress, coping and its adaptational outcomes than any other single source despite the difficulties in validation (Aldwin, 1994; Lazarus & Folkman, 1984). As Lazarus and Folkman (1984) suggest we “cannot abandon this (self-report) source of information” (p. 322) despite its flaws, because we are dependent on what individual’s tell us about their feelings and how they construe what is happening to them.

According to Endler and Parker (1990), the most widely used coping scale in research despite its methodological weaknesses, remains the ‘Ways of Coping Scale’ (WoCS) (Folkman & Lazarus, 1985). Several researchers have criticised the WoCS for its unstable factor structure and poor internal reliability of the sub-scales (e.g., Edwards & Baglioni, 1993; Endler & Parker, 1990). Endler and Parker (1990), further suggest its use by researchers is more frequent than psychometric properties of the scale warrants. As Aldwin (1994) notes, any changes that appear to occur across situations using process measures of coping, are thus primarily due to the “unreliability of the instrument rather than any important contribution of the situational context per se” (p. 115). Further, difficulties with the WoCS include the dropping or adding items by researchers, according to the population or hypothesis under investigation (McCrae, 1984; McCrae & Costa, 1986; Scheier et al., 1986). However, despite these methodological limitations its use in research continues (Aldwin, 1994).

Coping in Childhood

According to Compas (1987), the study of coping with stress during adulthood has been characterised by increased convergence on conceptualisation and measurement (e.g., Lazarus & Folkman, 1984; Moos & Billings, 1982) however, the same “is not true for coping during childhood” (p. 393). Research on coping in children has received little
attention from both the general and sport psychology literature. According to Seiffge-Krenke (1986) the majority of empirical studies on coping over the past 20 years have concentrated on adult age groups, and the 7.2% of studies on adolescent coping focus on the way small homogenous groups have coped with critical situations including rape, kidnapping, and serious illness like cancer (e.g., Bulman & Worthman, 1979; Coletta, Hadler, & Gregg, 1981; Terr, 1979). Compas (1987) proposed that as "no systematic effort (had) been made to conceptualise coping during childhood and adolescence the adult literature must be drawn on for this purpose" (p. 393). However, as Frydenberg and Lewis (1993) contend it is difficult to draw comparisons between coping research work reported only with adult populations.

Researchers have long assumed that coping changes across the life span, however the nature of these changes remains unclear because there is little systemic research, especially longitudinal studies, charting these changes (Lazarus & DeLongis, 1983; Lazarus & Folkman, 1984). Some aspects of the changes in coping that occur in the early years are known. As Sarafino (1994) notes, children in the early years (1-6 yrs) do no cope very effectively with stress. For example, Hyson (1983) noted that when infants and toddlers were being examined by their paediatrician, they often react by trying to stop the examination, and pre-schoolers tend to protest after it is over. However, over the next several years children increasingly come to rely on cognitive strategies for coping (Brown, O'Keeffe, Sanders, & Baker, 1986; Miller & Green, 1984). For example, they learn to think about something to distract themselves from stress. According to Spivack and Shure (1982) the change in cognitive problem solving skills with age is probably a result of cognitive development.

Sorensen (1993) notes one of the most consistent findings in the child coping literature is the dramatic increase in emotion-focused coping between the ages of 6-9 (Band & Weisz, 1988; Brown et al., 1986; Compas et al., 1992; Wertlieb et al., 1987). During this period children become more able to verbalise and differentiate their feelings,
and more differentiated in the types of emotion-focused coping they use (Sorensen, 1993). According to Aldwin (1994) problem-focused coping in childhood also becomes more differentiated and context-specific as the coping repertoire increases with age. Aldwin (1994) further suggests "the appraisal processes and problem-focused coping must of necessity rest upon (the development of) cognitive skills for comprehending the physical and social environment, as well as problem solving skills and the ability for abstract reasoning" (p. 230). Researchers also note, it is between the age of 6-9 that gender differences in seeking social support emerge, with girls seeking more support than boys, a pattern that continues into adulthood (Wertlieb et al., 1987; Frydenberg & Lewis, 1990).

Aldwin (1994) suggests that children's age beliefs concerning controllability of the environment become more realistic, judgments of control become more differentiated, and control may be associated with more problem-focused coping. Thus, as children gain in coping resources they can better differentiate between controllable and uncontrollable. In summary, the coping repertoire in middle childhood increases and become more differentiated (Aldwin, 1994).

Most research on children's coping has focused on responses to major traumatic events such as illness, hospitalisation, divorce of parents (e.g., Caty, Ellerton, & Ritchie, 1984; Dibrell & Yamamoto, 1988; Taylor, 1980), or the responses of special populations experiencing major personal trauma and painful situations, such as bereavement and loss (Brown et al., 1986). Among the first and most extensive works related to stress, coping, and adaptational processes in well children was the longitudinal study by Murphy and Moriarty (1976). This research provided multiple psychometric data on 32 children over a period of 15 years, including various psychological tests, behavioural observations, and coping and vulnerability inventories. The study resulted in the development of the Comprehensive Coping Inventory. However as Sorensen (1993) notes, although the
inventory offers important data related to childhood coping it is impractical for general use as an instrument as it includes 999 complex measures.

More recently several researchers have attempted to inductively classify school-aged children’s coping efforts from self-report data directly from children. Compas, Malcarne, and Fondarco (1988) examined coping strategies actually used and the capacity to generate alternative solutions for coping in interpersonal and academic stress situations among children aged 10-14. They found that children used both problem- and emotion-focused coping strategies in response to interpersonal and academic stressors. Walker (1988) interviewed 26 well siblings of children with cancer aged 7-11, analysing the content to identify coping patterns. Band and Weisz (1988) adapted Folkman and Lazarus’s (1985) Ways of Coping Checklist for use with children to observe the nature of the reported coping responses of school-age children. They found that in 96% of all descriptions children reported using active coping, and in 3.5% of cases children responded by relinquishing control. Ryan (1989) asked one hundred and three 8-12 year old children to list coping strategies used to deal with given stressors. The results produced 13 types of coping efforts, including the use of social support, avoidant activities, distracting activities, and cognitive activities. These inductive studies represent a trend toward developing coping lists and taxonomies from children’s qualitative data.

In the conceptualisation of the coping process (e.g., Lazarus & Folkman, 1984) the distinction between coping resources, styles, and strategies have been important, however the differences between these concepts in the study of children’s coping are not entirely clear (Compas, 1987). In particular Compas (1987) suggests researchers have failed to adequately distinguish between coping styles and specific strategies. Coping styles in children have typically been assessed through self-report measures asking how they “usually respond” in a given type of situation (e.g., Krohne & Rogner, 1982; Spivack & Shure, 1982). According to Compas (1987) this method may disguise variability in the coping strategies used by children by reporting on the way they “usually” cope in
situations and not how they "actually" coped in specific stressful situations (see Lazarus & Folkman, 1984, pp. 128-130 for a discussion of this problem in studies of adult coping).

Compas (1987) notes that while the adult measures of coping have typically relied upon structured checklists (e.g., Lazarus & Folkman, 1980), more open-ended formats (e.g., Stone & Neale, 1984) are a "a promising method to pursue with children and adolescents" (p. 401) as the development of a structured checklist for children would require different versions for various age groups to reflect the changes in cognitive development and response capabilities. The research therefore promotes the examination of coping in "specific" situations rather than "usual" responses to coping and the use of self-report (i.e., open-ended format) measures of coping when dealing with children (Compas, 1987). These recommendations were therefore incorporated into the present research on coping in child athletes in sport.

Gould (1982) in his review of psychological issues of importance in youth sports research cited competitive stress placed on young athletes, and helping young athletes cope with competitive sport as foremost, placing them in the top 3 out of 29 issues. As such coping with competitive sport for children was seen to be of high importance, yet a decade after this recommendation there remains a paucity of research on children and coping in sport.
Contrary to popular views, stress management is not a specific treatment technique applied to a specific illness, labelled “stress” (Roskies, 1993). Rather, stress management is best conceptualised as a general treatment approach to a broad category of adaptational and health problems (Roskies & Lazarus, 1980). Stress management, therefore, involves an “effort to prevent or alleviate stress-related problems” (Roskies, 1993, p. 431). In recent years there has been expanding interest in the area of stress management training in many settings, including corporate workers (see Murphy, 1984, for a review of related literature), teachers (Forman, 1990), medical settings (see Ludwick-Rosenthal & Neufeld, 1988, for a review of related literature), and sport (see Cox, 1991, for a review of related literature).

Monat and Lazarus (1991) noted three general types of stress management techniques. The purpose of these techniques are to alter the person’s environment and/or lifestyle, alter personality and/or perception of stress, and alter the person’s biological responses to stress. Table 1 lists examples of each category as described by Greenberg (1990). According to Sorensen (1993) empirical evidence regarding the effectiveness of many stress management programs employing these techniques is sparse, with most stress management literature focusing on the “how to” of untested programs rather than reporting whether or not they work. As Sorensen (1993) notes, the long-term effects of stress management interventions, or their benefit in subsequent stressor situations remains unknown. Monat and Lazarus (1991) further suggest that, while stress management interventions may not cause harm, the effectiveness of many of these programs have not been proven. For example, Wilks (1991) noted that in spite of positive studies in the meditation and biofeedback literature, a review of the literature shows conflicting findings regarding the effectiveness of these techniques.
Selected Stress-Management Techniques

<table>
<thead>
<tr>
<th>Environment/Lifestyle</th>
<th>Personality/Perceptions</th>
<th>Biological Responses</th>
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<tbody>
<tr>
<td>Time Management</td>
<td>Assertive Training</td>
<td>Progressive relaxation</td>
</tr>
<tr>
<td>Proper nutrition</td>
<td>Thought stopping</td>
<td>Relaxation response</td>
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<tr>
<td>Exercise</td>
<td>Refuting irrational ideas</td>
<td>Meditation</td>
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<tr>
<td>Finding alternatives to frustrated goals</td>
<td>Stress Inoculation</td>
<td>Breathing exercises</td>
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<tr>
<td>Stopping smoking,-drinking, etc.</td>
<td>Modifying Type A behaviour</td>
<td>Biofeedback</td>
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<td>Autogenic</td>
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Note: Discussion of these and other stress-management techniques may be found in Greenberg (1990).

Stress Management and Children

Previous research in stress management and coping has tended to focus on adults. However, there has been little exploration of the stress and coping processes of children. Perhaps one reason for the paucity of research on children’s stress has been the more recent acceptance of stress as an integral part of children’s lives (Garmezy & Rutter, 1988; Johnson, 1986; Saunders & Remsberg, 1984; Youngs, 1985). As Garmezy and Rutter (1988) note, most of the literature on children’s stress and coping has focused on responses to chronic stress events such as illness, hospitalisation, or personal disaster, with less known about the effects of acute stress events.

According to Youngs (1985), when the stress management literature is examined, there are considerably fewer children’s stress management programs than adult programs. As Sorensen (1993) notes, although intervention programs in stress management have been examined for children (e.g., LaMontagne, Mason, & Hepworth, 1985), the validity of these programs in terms of the assessing their long term effects remain open for study. Researchers further note that most stress management interventions for children follow age-adjusted models of relaxation, biofeedback, guided imagery, breathing exercises, and
other educational modes, with little validation from the children themselves (Sorensen, 1993; Youngs, 1985).

As Sorensen (1993) noted, it is increasingly evident that data from parents, teachers, may not accurately represent the child's response. For example, Wolchik et al. (1986) compared the ratings of parents, clinicians, and children in a study relating stressful events with divorce. The authors noted that the assigned stress values as perceived by children were significantly different from those assigned by parents and clinicians. According to Sorensen (1993), this indicates the need for measures sensitive to children's and not adults' perceptions. Sorensen suggests in light of these findings, it is important to obtain validation from those the program is designed for, as "children are capable of sharing insights into their own needs and responses" (p. viii).

DeWolfe and Saunders (1992) study on stress reduction in sixth grade students focused briefly on learning to relax, and concentrated more on teaching children skills like identifying sources of stress in their lives, talking about their feelings, and solving problems. The program focused on learning skills that enabled the children to take an active role in confronting the causes of stress in their lives. The researchers noted significant improvements in the students' self-rating of stress and in teachers' ratings of the students' behaviours related to stress and the stress management program. The students' self-ratings of general self-esteem also increased during the program. The researchers also noted that self-esteem showed less change than feelings of stress, indicating that self-esteem was generally quite stable (Hoe, Smit, & Hanson, 1990). The results of the study supported the efficacy of direct treatment programs in helping grade school children cope with stress.

Stress Management in Sport

Stress management strategies in sport are designed to help athletes to intervene and alter their existing levels of stress and anxiety (Cox, 1991). Meichenbaum (1985)
argued that stress problems often occur because the athlete does not possess the required coping strategies to manage the stressor. Previous investigations of psychological intervention procedures have implicitly recognised that the lack of coping skills may be one cause of less-than-expected performance and sport dissatisfaction (Mace & Carroll, 1985; Owen & Lanning, 1982). According to researchers, any intervention program that assists athletes in acquiring coping skills may potentially help in the control of the stress process (Meichenbaum, 1985; Smith, 1986).

Cox (1993) referred to three types of stress management techniques for athletes. These included relaxation procedures, cognitive strategies, and “packaged,” or formal intervention programs. Relaxation procedures are techniques oriented primarily around the reduction of tension and anxiety, through eliciting the “relaxation response.” The relaxation response refers to a series of physiological changes that counter the effects of the sympathetic nervous system by reducing anxiety and tension. Examples of techniques that elicit the relaxation response include progressive relaxation training, autogenic training, transcendental meditation, and biofeedback (Cox, 1993). Cognitive strategies are psychological procedures used by athletes to mentally prepare themselves for competition. However, according to Cox (1993), because they are also used to alter existing stress, anxiety, frustration, and arousal levels of athletes, they may also be classified as intervention strategies. Cox (1993) suggests three of the most common cognitive intervention strategies include imagery, hypnosis, and goal setting.

Using karate as the athletic medium, researchers demonstrated that individualised and packaged programs were more effective than non-individualised programs (Seabourne, Weinberg, Jackson, & Suinn, 1985). The authors suggested athletes benefit most from intervention strategies designed to fit their needs, or presented in a systematic and organised fashion. They further indicated that merely informing an athlete about various cognitive stress management techniques was not particularly effective. Cox (1993) further emphasised the importance of applying these various techniques on an
individual basis, rather than discriminately to all team members.

The "packaged" or formal stress management intervention programs involve various combinations of relaxation and cognitive intervention strategies that are "packaged," or tailored, to meet the needs of individual athletes. Three packaged interventions that have received attention from psychologists, sport psychologists and researchers are Meichenbaum's (1985) Stress Inoculation Training (SIT), Smith's (1980) Stress Management Training (SMT), and Suinn's (1972) Visuo-Motor behaviour Rehearsal (VMBR).

Meichenbaum's (1985) Stress Inoculation Training (SIT) aims to develop and enhance the coping resources of the athlete, such that the person's response to stress serves as a cue for mobilising coping responses. The SIT program explores the antecedents, behaviours, and consequences of the stress reaction, employs relaxation training, develops effective self-instructional statements that serve as coping skills, and uses imagery to induce and control anxiety reactions. Thus, as the athlete learns to cope and confront a relatively mild situation they are immediately exposed to a situation of greater stress. In this way the athlete becomes inoculated to progressively increasing levels of stress. Mace and Carroll (1985) reported that the use of SIT lowered the self-reported stress and anxiety levels of their sample of abseilers. However, while SIT has also been used with squash players (Mace & Carroll, 1986) and gymnasts (Mace, Eastman, & Carroll, 1986), it was not originally designed for use in sport. The program was first introduced in the early 1970's as a treatment approach to help phobic clients who experienced multiple fears (Meichenbaum & Cameron, 1972).

Meichenbaum (1993) suggests SIT does not represent a treatment formula that can be routinely applied to distressed individuals. Rather, it is a set of general guiding principles and accompanying clinical procedures that must be individually tailored to the unique characteristics of each case. Meichenbaum (1993) suggested that "SIT with
athletes [be] packaged as an educational program in self-control, and not as a form of psychotherapy” (p. 392).

Cognitive Affective Stress Management Training or SMT (Smith, 1980) is a cognitive-behavioural coping skills program designed to teach the athlete a specific "integrated coping response" involving both relaxation and cognitive components. The three overlapping stages in the SMT include conceptualisation, skill acquisition and rehearsal, and skill application. Within the SMT program the athlete not only imagines the stressor while relaxed, but also focuses on his or her emotions and feelings that develop as a result of the stressor. The subject then gains control over these emotions and images by using self-statements and relaxation responses. However, the images and feelings the athlete must cope with are far more difficult than he or she would normally encounter.

There is however, limited empirical support for the effectiveness of SMT in sport. Crocker, Alderman, and Smith (1988) reported that using SMT had significant effects on the positive thoughts and performance of their sample of high performance Canadian volley-ball players. Crocker (1989b) suggested these results provided encouraging evidence that SMT is an effective stress management program for “real” athletic settings. However, the lack of no treatment control group weakened the ability to establish causal relations and the ability to confidently generalise to different times, settings, and athletes.

As Ziegler, Klinzing, and Williamson (1982) note “much research is still needed to establish the effectiveness of techniques already developed, [and] to generate new stress management strategies” (p. 288). Ziegler et al. examined the effects of two stress management training programs (SMT and SIT) on cardiorespiratory efficiency. Subjects in both training groups completed a mental training program including EMG relaxation training, cognitive coping strategies, and imagery training. Results of the 20-minute post submaximal run indicated significant differences between both stress management groups and the control group of runners, however, no differences emerged between the two
Suinn's (1972) Visuo-Motor Behaviour Rehearsal (VMBR) is a strategy designed to avoid performance error. VMBR involves teaching the athlete to use relaxation and imagery techniques to create lifelike situations. The underlying premise being, that going through these stressful experiences mentally should make it easier to deal with the stress of actual competition. In testing the VMBR program Suinn worked with alpine skiers (Suinn, 1972). This involved instructing subjects to imagine the racecourse and themselves skiing it. Such mental rehearsal enabled the skiers to prepare for the race and avoid errors in the race by rehearsing the correct response to each section of the course. Thus, VMBR provided the skiers with a sense of having already successfully handled the course, enabling them to appraise the course as not exceeding their perceived capabilities. The VMBR program was further tested using Olympic Nordic and biathlon athletes (Suinn, 1976), and a long-distance kicker in American football (Titley, 1980). However, while the results of these anecdotal reports were impressive in terms of perceived results, they were lacking in scientific controls and so it remains unclear whether it was the strategy which produced the improved performance of the subjects or some other factor or combination of factors.

Other investigators have studied VMBR with tennis players (Noel, 1980), and karate (Seabourne, Weinberg, & Jackson, 1982; Weinberg, Seabourne, & Jackson, 1981). These studies suggested VMBR was effective in reducing the athlete's trait and state anxiety levels. However, as Hall and Erffmeyer (1983) noted, highly skilled athletes are more effective in using VMBR training and mental practice than are unskilled athletes. Thus, as Cox (1993) suggests, the effectiveness of VMBR appears to depend upon the type of task, skill level of the performer, and the athletes' ability to relax and use imagery.

In summary, SIT, SMT, and VMBR are all programs that have been used with respect to the regulation of chronic stress in sport, however, programs and strategies for coping with acute, game-related stress in sport are virtually absent in the related literature.
Based on an extensive perusal of the literature, it appears that Anshel’s (1990) COPE model represents the only model for coping with acute stress in sport. A primary source of information in the development of the COPE model was information derived from interviews with successful professional and intercollegiate athletes and coaches (Anshel, 1990). One advantage of this model is to reduce the “paralysis by analysis” limitation of previous stress management programs by eliminating the array of coping skills from which athletes may chose. COPE is an acronym consisting of four cognitive-behavioural processes. These include controlling emotions, organising input into meaningful and non-meaningful categories, planning the next response, and executing the appropriate action. The COPE model (Anshel, 1990) allows the performer to become less affected by, even impervious to noxious input. As Anshel notes, these processes were derived from the sport and cognitive psychology literature with respect to internal coping mechanisms and information processing during stress (Carver & Scheier, 1981; Carver et al., 1979; Gauron, 1986; Greenberg, 1980; Meichenbaum, 1977).

As Anshel (1990) suggests, the COPE model differs from other models in four ways. First, other stress management models are more compatible with chronic forms of stress, COPE is specifically an acute stress model. Second, the individual in some stress management programs is viewed as a passive recipient in handling stress, while COPE is dependent of the individual’s ability to consciously attend to each of a series of pre-planned series of purposeful thoughts and actions. Third, other programs omit the athletes response following exposure to the stressor and centre exclusively on cognitive strategies to deal with the stress. While the COPE model is both cognitive and behaviourally based, in that athletes are first taught to respond psychologically and then behaviourally in the appropriate manner to maintain the proper mental and physiological readiness for subsequent performance. Finally, earlier stress programs offered a smorgasboard of
techniques that an individual could use in a particular situation. However, the strategies in COPE are planned in a proper sequence, which fosters mastery and familiarity of its application. The COPE model allows the athlete to become less affected by, and impervious to noxious stimuli.

The first stage controlling emotions, begins immediately following exposure to the stressor and may last from a few seconds to several minutes depending on the athlete’s needs, the perception of stress intensity, and the task’s cognitive and movement demands. Initially upon exposure to unpleasant stimuli (e.g., booing, coach criticism, or ridicule from fans or team-mates) the athlete is asked to engage in two cognitive-behavioural processes. The first objective for the athlete is to prevent emotional upheaval, which could be deleterious to their psychological performance and subsequent performance. The athlete’s second objective at this first stage of the model is taking responsibility for, and accurately perceiving, the cause of their performance.

The second and most difficult component of the model, suggests Anshel (1990) is organising input, that is, separating and selectively filtering out unimportant, unpleasant information from the more important content that the athlete can use. The third stage of the model, consists of planning the response. The athlete’s objective here is to attend to subsequent task demands as soon as possible after experiencing the stressor. To accomplish this, the athlete uses cognitive strategies that allow for the selection of appropriate subsequent responses.

The objective of the final phase of the model, executing the response, is to perform the necessary skills soon after the planning phase, thereby preventing, or at least minimising, the deleterious effects of unpleasant thoughts which tend to interfere with cognitive processing and performance. The athlete is further asked to think about future events, while eliminating unpleasant thoughts, such as self-doubt, uncertainty, negative self-talk, and recollections of past failures, especially the recent stressful event.
Investigations using the COPE model included Anshel’s (1990) study of US female intercollegiate tennis players. Subjects were exposed to 10, 15 or 20 pre-treatment stress trials involving exposure to noxious verbal input. It was predicted that COPE training would improve performance accuracy and mood of the subjects after exposure to noxious verbal input in contrast to the stress experienced prior to learning the coping strategies. The results indicated that the coping strategies significantly improved performance and affect for all treatment groups of pre and post-intervention comparison. However, between-group comparisons showed that competitors who experienced COPE training significantly improved their tennis performance on post-treatment scores in contrast to the other groups. However, Anshel (1990) noted the study was not without limitations, including the lack of a control group and a small sample size. However, this represents a common problem in sport research when conducting field research with elite athletes on teams consisting of relatively few players (e.g., tennis).

Another test of the COPE model (Anshel, Gregory, & Kaczmarek, 1990) overcame the difficulties in the earlier study, with a greater sample size and the use of control and placebo groups. In this study, male baseball and female softball intercollegiate athletes were trained to use cognitive strategies to cope with receiving unpleasant information feedback as opposed to placebo groups (watching sport-related videotapes) and no-treatment control groups. Results indicated that athletes who trained in a stress management program (COPE) decreased their fear of appearing incompetent and fear of negative evaluations, minimised negative affect associated with acute stress due to unpleasant feedback, and promoted causal attribution’s of their performance more to internal than external factors.

**Limitations of Previous Stress Management Research**

A primary limitation of previous research on stress in sport has been the use of a plethora of coping skills following stressful events during the contest. Approaches like
SIT (Meichenbaum, 1985), and SMT (Smith, 1984) are based on the belief that athletes who are taught cognitive strategies will be able to successfully manage any stressful transaction (Johnston & McCabe, 1993). Crocker et al. (1988) for example, employed eight different skills for coping with stress. However, since stress during performance occurs in a physically and psychologically demanding context where time is limited, and where an athlete may have only a split second to choose a coping strategy, such an approach to coping with stress appears inappropriate (Johnston & McCabe, 1993). Further as Johnston and McCabe suggest, because of the inappropriateness of this approach to a sporting situation, such research on coping is limited in the generalisability of the experimental results.

It has been suggested that the effectiveness of a particular strategy depends on the type of stressful transaction being experienced (Folkman & Lazarus, 1984). Lazarus (1974), cautioned against training individuals in too many strategies, since this may have the negative effect of inducing indecisiveness and confusion in the individual confronted with a stressful demand who is unsure of which strategy would be effective to use. Anshel (1990) referred to this effect as 'paralysis by analysis.' It is argued that assisting athletes to master a 'smorgasbord' of coping strategies is not a means of enhancing athletes' performances, since coping with stressful transactions requires parsimony and speed (Johnston & McCabe, 1993).

Further, as Johnston and McCabe (1993) note, effort on the part of the athlete is required to learn and master cognitive strategies. Further, given that such strategies are to be used in complex, psychologically demanding situations where time is limited, it appears that what is required is a simple strategy that will enable the athletes to identify the particular stressor involved and employ the appropriate coping strategy quickly and efficiently, so that any imbalance between perceived demand and perceived capability is reduced or removed allowing competent performance to proceed.
The present research involved the application of a stress management program to children experiencing acute stress during the contest. As Gould (1993) noted, little research has been conducted on stress management training with prepubescent athletes. According to Smith and Smoll (1992, p. 1035) stress management programs have promising applications with child athletes for several reasons. First, it is highly desirable to acquire adaptive coping responses prior to adolescence. Second, unlike many adults, children have not generally developed maladaptive coping strategies that are deeply ingrained and therefore difficult to change. Third, the athletic arena requires child athletes to cope with stress evoking situations on a regular basis and, thereby providing many opportunities to practice and strengthen coping skills in situations. Finally, developing a range of generalisable coping skills should enhance the child athlete's ability to handle stress not only in athletic situations, but also in other aspects of their lives. In summary, proponents of youth sports suggest that one of the great benefits of sports is that they provide a training ground for developing coping skills (Smith & Smoll, 1992). Thus, as Anshel's (1990) COPE model represents the only model designed specifically for coping with acute stress in sport situations, and the present research is concerned with coping with acute stress in hockey for children, the COPE model provides the logical theoretical background for the present stress management application.
The Coping Model in The Present Study

The model of coping used in the present study was developed by Anshel (presented at 6th International Stress Management Association (ISMA-6) conference, October 1996). The model integrates concepts identified in the Lazarus and Folkman (1984) transactional model of stress and coping, and also examines evidence for the concepts of approach and avoidance coping (Krohne, 1993; Roth & Cohen, 1986).

The present study was guided by the conceptual framework developed by Lazarus and his colleagues (e.g., Folkman & Lazarus, 1980; Lazarus & Folkman, 1984; Lazarus & Launier, 1978) which holds that stress relationships occur as a result of a transaction between the environment and person factors. Lazarus and Folkman's (1984) conceptualisation of coping therefore focuses on situational determinants of coping (i.e., coping efforts can shift during different stages of a stressful event). The transactional model recognises the two processes of cognitive appraisal and coping as critical mediators in the stressful person-environment relationship. According to Lazarus and Folkman (1984), the meaning of an event is determined by cognitive appraisal processes, that distinguish between irrelevant, benign/positive, and stressful appraisals. The three stress appraisals include harm/loss, threat, and challenge. Within this transactional framework, coping is defined as the cognitive and behavioural efforts to manage specific internal and external demands appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). The coping response is therefore a conscious strategy that mediates between perceived stressful events and outcomes.

Coping style refers to methods of coping that are stylistic and dispositional in nature, and reflect the tendency of individual's to respond to stress in a particular manner when confronted with specific circumstances (Carver et al., 1989; Cohen, 1987; Compas, 1987; Krohne, 1990, 1993; Roth & Cohen, 1986). In the literature the typical framework underlying coping style involves the concepts of approach (attention) and avoidance
(Krohne, 1993; Roth & Cohen, 1986). Approach coping refers to those strategies active in nature designed to confront the problem and reduce its effects, while avoidance coping refers to those strategies designed to reduce tension by avoiding dealing with problem (Krohne, 1993; Roth & Cohen, 1986).

Johnston and McCabe (1993) examined the effectiveness of an approach-avoidance dichotomy of coping strategies in a sporting situation, where the criteria for efficacy was determined by whether control of the transaction was available or not. The researchers examined whether subjects who learnt a strategy that was appropriate to the demand of the task (an approach strategy) performed better and reported less stress than the subjects who learnt a strategy that was inappropriate to the demand of the task (an avoidance strategy), or those who were not taught a cognitive coping strategy. The authors noted, that the group taught the appropriate (approach) strategy perceived their capability to be significantly better than the group taught the inappropriate (avoidance) strategy and the control group. They further noted, in the approach condition where control of the transaction was an appropriate response, an approach strategy was more effective than an avoidance strategy. While in the avoidance condition where no control was available since the transaction involved negative input from an external source, the researchers suggested an avoidance strategy was more effective than an approach strategy.

Johnston and McCabe (1993) concluded the availability of control of the stressful transaction determines which coping strategy (approach or avoidance) would be more appropriate and more effective for the athlete. Johnston & McCabe suggested their research "demonstrates the importance of an athlete utilising a coping strategy which is appropriate to the stressful transaction being confronted" (p. 42) and "lend(s) support to the validity of an approach-avoidance dichotomy of coping strategies" (p. 41) in sport.

The approach/avoidance coping style dichotomy has been strongly criticised by
Aldwin (1990) as "too simplistic to realistic capture coping efforts" (p. 120), and suggesting that in general trying to solve your problems is useful and avoiding them is not. Aldwin (1990) further criticises the approach/avoidance dichotomy for categorising "all emotion-focused coping as avoidant, when in actuality this type of coping could [also] serve to facilitate problem-focused coping" (p. 120). However, the Anshel (1996) model used in this current study accounts for these limitations following the example set by Moos and his colleagues (Moos, Brennan, Fondacaro, & Moos, 1990). These researchers overcame the limitations by combining approach/avoidance with a more multifaceted process approach. This multifaceted approach retained the overarching approach/avoidance dichotomisation, and emotion- and problem-focused coping subcategories were included within each of the overarching categories.

Thus, within approach strategies there are sub-scales reflecting both behavioural and cognitive efforts, thereby resolving the earlier criticism that the simple approach/avoidance dichotomies "failed to differentiate between those emotion-focused strategies that obviate and those that support problem-solving efforts" (Aldwin, 1990, p. 121). Similarly within the avoidant coping category there are also cognitive and behavioural sub-scales.

This hierarchical factor structure had been suggested by previous researchers (Carver et al., 1989; Tobin, Holroyd, Reynolds, & Wigal, 1989) as a logical manner in which to study a person's consistency in their use of selected coping techniques. Thus, the approach and avoidance coping styles are evident in both problem-focused and emotion-focused coping strategies, because the emotional and behavioural characteristics of the problem/emotion-focused coping strategies can be applied in either an approach-oriented or an avoidance-oriented context (Tobin et al., 1989). Endler and Parker (1990) also contend that both types of coping (i.e., emotion/problem focused) may involve both behavioural and cognitive reaction modalities. As Wilks (1991) advises, a multi
dimensional approach that includes cognitive and behavioural strategies may be more appropriate to address the needs of sports participants.

A study by Anshel (1993) examining coping styles among young competitive adolescent athletes reflected this multi-dimensional interpretation of coping style. The four types of coping responses in the study included (a) problem-focused/approach (e.g., physical confrontation or seeking information), (b) problem-focused/avoidance (e.g., rapid execution of the next task), (c) emotion-focused/approach (e.g., becoming psyched up or angry by thinking about an error), and (d) emotion-focused/avoidance (e.g., the planning of the next task). A study by Anshel, Williams, and Hodge (1997) further used this hierarchical factor structure when examining cross-cultural and gender differences on coping style in sport. An example of an approach/emotion coping strategy would be “I felt anger toward (the stressor),” while an approach/task strategy would be, “I verbally disagreed with the coach.” An avoidance/emotion strategy would be “I accepted (the stressor) since there was nothing I could do,” and an avoidance/task technique would be “I engaged in physical activity almost immediately” (p. 9). However, the authors preferred the term “task-focused” for sport, in contrast to Lazarus and Folkman’s (1984) concept of problem-focused. The authors defined task-focused coping as “action-oriented” coping strategies that are specific to competitive sport environments, and may be directed internally (e.g., ignoring the coach’s reprimand, getting psyched up) or directed externally at the environment (e.g., keep playing after experiencing pain).

Lazarus and Folkman (1984) contend problem-focused coping involve “defining the problem, generating alternative solutions, weighing the alternatives in terms of their costs and benefits, choosing among them, and acting” (p. 152). However, Anshel et al., (1997) suggest that coping with acute stress in sport often does not permit sufficient time to engage in these processes, and instead, requires pre-planned cognitive and motor responses (e.g., rapidly engaging in a defensive strategy after making an error).
In summary, the model adopted in the present study examines the transactional process variables of cognitive appraisal and coping, but also recognises the importance of coping style and the behavioural and cognitive sub-scales within these coping styles (i.e., approach and avoidance).

Figure 2: The Coping Process in Sport (Anshel, 1996)
The purpose of study 1 was to examine the cognitive appraisals and coping strategies following various stressful situations experienced during the game of competitive children hockey players. Prior to assessment, the procedure of the study and content of the interview were approved by the Human Research Ethics Committee at the University of Wollongong.

Participants

The participants, all volunteers in the present investigation, involved athletes (N=52, 36 males and 16 females) aged 10-12 yrs. The participants competed in field hockey for one of three local clubs in the Illawarra region, New South Wales (Australia) and were members of the NSW Junior Hockey Association. For their involvement in the study, participants were required to complete a consent form (see Appendix A) that explained the general purpose of the study and informed them they were able to withdraw from the study at any time without penalty.

Measures

The Interview - Development and Use

An interview was designed for this study to identify sources of stress, appraisals of stress, and coping strategies. The interview was undertaken with all participants during the data collection sessions of study 1. There were no previously published instruments that incorporated these elements in regard to child athletes and acute stress in sport. Interview development, therefore, consisted of adapting items from previously published literature on acute stress and coping. Interview questions, were also generated with the assistance of academic and practise experts who were familiar with the relevant literature and who examined the wording, layout and general features of the interview for its applicability to children aged 10-12 yrs. The interview was comprised of several parts
(see Appendix B), including general orienting instructions, the acute stressors that athletes may encounter whilst playing sport, the cognitive appraisal of acute stressors identified, and the coping strategies employed in response to the sources of acute stress. Interviews were conducted in person at the teams training sessions (14 males, 5 females), or over the phone where this was not possible (22 males, 11 females) and lasted between 20-35 minutes. The interviews were tape recorded and later transcribed verbatim.

In Part 1 the participants were oriented to the interview process, including an overview of the nature of the investigation and the type of questions that would be asked. The athletes were also asked permission to tape the interview and participants were informed that information gathered would be strictly confidential. Further, in an effort to encourage honest responses, participants were reminded there were no right or wrong answers, and only what they thought and felt was important. General background information (e.g., age, years playing hockey) was also elicited. Stress was defined for each participant as ‘those times during the game when you were really upset, worried, and annoyed by nasty and unpleasant things.’ The participants were introduced to the concept of rating the intensity level of the acute stressor on an “Experience of Stress” Likert scale (see Appendix B) ranging from 1 (not at all stressful) to 5 (extremely stressful), similar to the five-point Likert scale used by Long (1993). Participants were instructed to report only those sources of game stress they would classify as highly intense, commensurate with number 4 or 5 on this scale. This was done to ensure the reported sources of acute game-stress reported were of similar and considerable intensity for the individual participants. It was felt that reporting highly intense stressors would provide a more reliable report of the coping strategies actually employed by participants in these “very/extremely stressful” situations, rather than those strategies the athlete could have employed.

Part 2 of the interview focused on identifying the acute stressors the athletes may
encounter whilst playing sport. The sources of stress questions were preceded by time
frame recall questions. These questions were designed to stimulate associations between
the game and the stressors experienced thereby aiding the recall process (Fowler, 1988)
by encouraging the athlete's memories of a recent game before asking specific questions
about events during the game (e.g., "Do you remember your game last week," "What
team did you play"). Although researchers (e.g., Patton, 1990; Scanlan et al., 1989) have
demonstrated that qualitative data often provide valuable insight into the participant's
thought processes, efforts to assist memory recall by limiting the time frame can aid in
more accurate recall self-report among participants (Fowler, 1988).

Participants were then provided with a 10-item list of possible sources of acute,
遊戲-related stress. All items in this section had been identified as sources of acute stress
during sport competition by Anshel (1990), Anshel, Brown, and Brown (1993), and
Gould, Horn, and Spreeman (1988b). This procedure was followed to aid the participants
recall of the acute, game-related stressors as the initial testing of the interview suggested
an under-reporting of stressors when participants were not provided with a list to aid
memory recall. When participants identified a stressor from the 10 item list provided,
they were requested to provide a specific personal example of that stressful situation.
Their responses formed the data for this study. As Sorensen (1993) suggests, reports of
stress-coping variables are more accurate when the stress and coping processes actually
occurred rather than ones based on hypothetical events. Thus, while the 10 item list of
acute stressors was provided for participants the actual stressors reported were individual
to each participants experience. After participants finished describing two sources of
stress from the list provided, they were asked to elicit any other sources of stress (e.g.,
"anything else?"). This allowed the researcher to ensure that all sources of stress had
been elicited for each participant. Clarification probes induced the participants to repeat
and clarify any unclear sources of stress mentioned (e.g., "Would you please go over that
again” or “How do you mean. Can you give me an example”) (Scanlan et al., 1991).

Each participant was asked the identical sequence of questions.

In Part 3 of the interview, the participants' appraisals for each game stressor were identified. All appraisal items were identified by Lazarus and Folkman (1984) and adapted to acute sport settings provided in Anshel's (1996) study. However, it was felt that distinguishing between harm/loss, threat and challenge appraisals was beyond the comprehension of children aged 10-12 yrs. Moore (1995) found that harm and threat appraisals combined to form one appraisal dimension during cluster analysis of her measure of primary stress appraisal. Thus, harm/loss and threat appraisals were combined to form a negative appraisal category, and challenge appraisals became a positive appraisal category. The classification of appraisals reported by participants into negative (i.e., harm/loss and threat) or positive (i.e., challenge) was initially achieved by referring to Lazarus and Folkman's (1984) definition of these dimensions. In addition, face validity was enhanced by having two independent academic researchers, familiar with the transactional model of coping, confirm the classification of each item as reflecting either a negative or positive appraisal. The participants were asked to describe what they “felt/thought” immediately following each source of stress. The participant was allowed to independently initiate the response, however, if no response was forthcoming a prompt was given (e.g., after experiencing a game error did you think “I should have done better” or “I’ll do better next time”).

The final part of the interview examined the participants’ immediate coping response to each source of acute stress. The coping responses provided were based on the Adolescent Coping Checklist (ACC - Frydenberg, 1993), the Ways of Coping Checklist (WOCC - Lazarus & Folkman, 1988), and the Ways of Coping With Sport (WoCS - Crocker, 1989b). Although these inventories are reliable and valid measures of coping, each inventory possessed limitations for use in this study. For example, the ACC and
WOCC are not related to sport and do not address acute stress, but rather, focus predominantly on chronic sources of stress. Thus, since no validated inventory previously existed for the subject group in the present study, the researcher generated appropriate items with the assistance of experts who were familiar with this literature. The classification of coping strategies present study, into approach or avoidance was initially achieved by referring to Roth and Cohen's (1986) definition of these dimensions. In addition, face validity was enhanced by having an independent academic researcher, familiar with the study of approach and avoidance, confirm the classification of each item as reflecting either an approach or avoidance strategy.

As with the sources of stress, participants were provided with a list of possible coping strategies to assist in their recall (e.g., 'I thought about what I would do next,' 'I tried to forget the whole thing,' 'I talked to my team-mates'). Once identified, the participant was requested to provide a specific example of the strategy employed. When the participants had finished describing their coping response to the stressor they were asked to elicit any further coping responses (e.g., “how did you handle that” and “what did you do next”). Again, the interviewer asked the athlete to clarify or repeat any unclear responses (e.g., ‘would you please go over that again’) (Scanlan et al., 1991).

Pilot Interviews

Prior to the initiation of the investigation, an initial format of the interview was tested on 6 athletes aged 10-12 yrs who played hockey in the same competition as the athletes participating in the study. The purpose of this exercise was to gain information about the clarity and ease of comprehension of instructions, phrasing of items, and the child’s general understanding of what was being asked of them for both the interview. All athletes were asked to complete the interview and the two inventories used in the study (i.e., SCAT-C and SEI-C). The pilot interviews were completed prior to, or during
time out from training sessions in settings similar to those in the main data collection settings for study 1.

The feedback from the pilot interviewees as well as critical appraisal by the investigator and other experts was used to evaluate and revise the interview guide to ensure clarity and comprehensiveness. Consequently, several changes to the wording of some instructions and a number of items were made. For example, in the initial interview, participants were asked if they remembered anything that happened during a recent game that really worried, annoyed, or upset them. That is, participants were asked to independently initiate the sources of stress they had experienced. It was found that participants were unable to generate this information independently, resulting in a list of 10 sources of acute stress as a prompt for the questions on sources of stress. A further subtle change on the 'Experience of stress' Likert scale ranging from 1 (not at all stressful) to 5 (extremely stressful) involved making the middle score 3 less vague by removing ancillary labels (i.e., 'rather stressful' 'So-So'), instead referring to the item as 'moderately stressful.'

**Self-Esteem Inventory - for Children (SEI-C)**

The Self-Esteem Inventory for Children (SEI-C-Coopersmith, 1967) was completed by athletes during the data collection in Study 1. The SEI-C is a 58-item self-report measure of self-esteem for children aged 8-15 yrs that has been used extensively by researchers. SEI-C items include short statements such as "I'm a lot of fun to be with" (item 5), and "No one pays much attention to me at home" (item 44)." Scoring options involve noting whether each statement given is usually "like me" or "unlike me". All statements are worded for comprehension with children aged 8-10 yrs.

As noted by Coopersmith (1984) written narrative was kept to a minimum, the instructions were read aloud by the researcher, and participants were provided with an opportunity to raise any questions. The inventory was presented as the 'Coopersmith
Inventory' and participants were informed that the questionnaire they were filling out would help the researcher know more about their likes and dislikes. The SEI-C was completed by participants at the teams training session, or over the phone where this was not possible. The time taken by participants to complete the SEI-C was approximately 3-5 minutes at training session and 5-10 minutes respectively, over the phone. In the latter situation, the instructions and questions of SEI-C were read to the participants. Importantly, when items were read to participants in the phone interviews care was taken to avoid making any statement seem inherently positive or negative.

The SEI-C was designed and validated in the US with school children (Coopersmith, 1967). The SEI-C has demonstrated adequate internal consistency, test-retest reliability, and construct validity. Test-retest reliability analysis indicated that self-esteem as measured in this inventory, was a fairly stable disposition when measured across time. Test-retest reliability assessed at intervals of five weeks and after three years produced correlation co-efficients of $r = .88$ and $r = .70$, respectively. Kuder-Richardson reliability co-efficients (KR20) ranged from .87 to .92 demonstrating a high degree of internal consistency. Evidence for the concurrent validity of SEI-C was obtained by demonstrating significant relationships between self-esteem and other personality constructs. For example, correlation co-efficients of .42 to .66 were obtained between general self-concept scales and the SEI-C scale.

Although the SEI-C is not sport specific, it was included in the present study because apparently no sport specific self-esteem measure exists for children in the published literature. In the absence of a sport specific measure, the SEI-C provides for a total self-esteem score and separate scores on four sub-scales including, general social/peer, home/parents, school/academic, and it also includes a lie scale to measures an individuals defensiveness or testwiseness.
Sport Competition Anxiety Test - for Children (SCAT-C)

The SCAT-C is a self-report 15-item measure of children's competitive A-trait anxiety in a sport situation. Examples of items include, “Before I compete I feel uneasy” (item 2), and “Before I compete I am relaxed” (item 11). The scoring options involve noting whether you “hardly ever,” “sometimes,” or “often” feel this way when you compete in sport and games.

As Martens, Vealey and Burton (1990) suggest, it is important when administering SCAT-C to make sure participants responded to each item according to how they generally feel in competitive sport situations. Thus, before each participant began the SCAT-C the researcher ensured the instructions were completely understood, and that any questions by participants were addressed. Participants were instructed to answer all questions. Martens et al. (1990) also suggested the SCAT-C not be administered in competitive situations because the proximity of competition may confound the dispositional nature of competitive A-trait. Instead, they recommended administering the SCAT-C in “a baseline, or non-competitive situation in which the subjects can focus on their usual responses and not be affected by the saliency of a particular event” (p. 112). Thus, the SCAT-C was completed by participants while at the teams training sessions or over the phone where this was not feasible. In the latter situation, the instructions and questions of SCAT-C were read to the participants.

The SCAT-C has demonstrated adequate test-retest reliability, internal consistency and concurrent validity. Test-retest reliability assessed at intervals of 1 hour, 1 day, 1 week and 1 month for school children in grades five to six, and eight to nine produced correlation coefficients of .70 to .90. Kuder-Richardson reliability coefficients (KR20) ranged from .95 to .97 demonstrating a high degree of internal consistency. Evidence for the concurrent validity of SCAT-C was obtained by demonstrating significant relationships between competitive A-Trait and other personality constructs. For example,
general A-Trait scales when correlated with one another yielded correlation co-efficients of .50 to .60, and correlation co-efficients of .28 to .46 were obtained between general A-Trait scales and this sport specific A-Trait scale.

Procedure

The three clubs involved in this study were initially approached by phone contact through the clubs Junior Co-ordinator. The researcher provided a brief description of the investigation and sought permission to contact individual coaches for the teams with athletes between the ages of 10 to 12 yrs. The team's head coach, contacted individually, was provided background on the study and permission to approach their players to invite them to participate in the study was obtained. Head coaches representing each of the six teams in the study provided information to their players about the study (e.g., voluntary participation, confidentiality, information on study) and invited them to participate. Following this step, the investigator attended a training session for each team and informed the participants of the investigation and invited them to participate. The investigator also provided those parents attending training sessions with the same information. It was emphasised to both child athletes and their parents that participation was voluntary and all data would be kept strictly confidential. Due to the young age of the athletes, consent was also sought from their parent or guardian in accordance with the ethical guidelines for research of the University (Human Research Ethics Committee, University of Wollongong). It was explained to the participants that the interview would be held in person where possible or over the phone at an agreeable time. The interviews took place at training sessions with the coaches permission for players to be interviewed during this time. The interview process was standardised as much as possible with all interviews conducted by the same researcher following the qualitative research methodology as delineated by Patton (1990), Lincoln and Guba (1985).
Design

According to Sorensen (1993), qualitative methodological philosophies generally preclude the existence of particular presupposed theoretical frameworks. Although the present investigation followed a qualitative descriptive design, current stress and coping cognitive-transactional theories (as discussed earlier) contributed to the philosophical and methodological orientation from which the rationale, purpose, and methods of the study evolved. The present study thus emerges from a theoretical orientation, however, as Sorensen (1993) notes, "specific, adequately developed, theoretical frameworks related to stress-coping phenomena in children do not yet exist" (p. 84). The aim of the present investigation was description rather than hypothesis testing.

Treatment of Data

Qualitative Data

Following procedures recommended by Patton (1990), a deductive content analysis was used to classify items into pre-determined categories (e.g., the list of 10 stressors, positive/negative appraisals, and the 28 item list of coping strategies). The frequency and percentage of responses to the 10 sources of acute stress were calculated for both males, females and the total group. This provided information on the most commonly used and most frequently reported source of stress and also allowed for gender comparisons. Krippendorff (1980) has endorsed such quantitative applications to summarise qualitative data. Qualitative examples were also provided in the narrative to enhance the knowledge of these sources of stress. It is important to note that athletes differed in the number of sources of acute stress they reported.

All appraisals in response to stressors were classified as either positive or negative. To do this, the researcher and two academics familiar with the appraisal literature made independent classifications of these appraisals. No appraisal was classified as positive or negative until 100% agreement was reached between all three
parties. The frequency and percentage of cognitive appraisals for each stressor as positive or negative were also explored separately for males, females, and the total group. Qualitative examples of appraisals were also provided in the narrative.

The coping strategy (approach/avoidance) used in response to appraisals (positive/negative) of each stressor was also explored. Before this analysis was conducted the list of 28 coping strategies were classified as either approach or avoidance oriented strategies. This process was completed by having these coping dimensions independently classified by two individuals familiar with this literature (the researcher and a sport psychology academic/researcher). These individuals attained 100% consensus on this classification. The frequency and percentages of coping strategies (approach/avoidance) were then calculated for males, females, and the total group.

Quantitative Data - Dispositions and Cognitive Appraisals

To examine the nature of the relationships between the dispositions of self-esteem and competitive trait anxiety, and for positive and negative appraisals, respectively, Pearson-product moment correlations were computed. Specifically, hypotheses about the relationships between trait anxiety and proportion of negative appraisals, and self-esteem and positive appraisals, were explored for the total group. The appraisals were calculated as a total proportion of one for each participant to account for the fact that an unequal number of stressors, and consequently, unequal appraisals were reported. For example, if an individual reported a total of three stressors, two of which were appraised as negative and one as positive, the proportion of these appraisals would total .66 and .33, respectively. Similarly, if an individual reported a total of only two stressors, one of which was appraised as positive and one negative, the proportion of these appraisals would total .50 and .50, respectively. The relationships between trait anxiety and the proportion of positive appraisals, and between self-esteem and negative appraisals, were
also explored for the total group. Finally, all relationships between dispositions and appraisals were explored for gender differences.

Quantitative Data - Coping Strategies

To examine the nature of the relationship between coping strategy (approach/avoidance) and appraisal type (positive/negative), a Pearson-product moment correlation was computed. A multivariate analysis of variance (MANOVA) was also computed to examine gender differences on coping strategies (approach/avoidance).
Two different types of data analyses were conducted, qualitative and quantitative. The qualitative analyses involved using deductive content analysis to examine the athletes' sources of acute stress, the athletes' appraisal of these stressors, and their coping responses. These results are reported as frequency and percentage figures, with examples of verbatim responses from participants provided. The quantitative analyses included Pearson product-moment correlations to examine the relationships between cognitive appraisals (negative/positive) and the dispositions of competitive trait anxiety and self-esteem, respectively. Multiple analysis of variance (MANOVA) was computed to examine the influence of gender on coping style (approach/avoidance), and reliability coefficients indicated the reliability of the SCAT-C (Martens, 1977) and SEI-C (Coopersmith, 1967) scales used in the study.

Qualitative Analysis

Sources of Acute Stress

As indicated earlier, child athletes were asked to give specific examples of stressful events they had experienced, as depicted in Appendix B. Qualitative analysis revealed comparisons between responses of the gender groups, which provided valuable insight into the children’s’ responses. A summary of the sources of acute stress for male and female child athletes is located in Table 1. The stressors are classified according to the frequency and percentage with which the athletes experienced each stressor. In most cases, the total percentage of players reported for each stressor exceeds the actual percentage of players who reported that stressor. As indicated earlier, this was because players differed in the number of sources of acute stress they reported for each stressor group. For example, the stressor, hearing unpleasant comments from the opposition was reported by 10 males, reflecting 27.8% of the total male sample (n=36), but only 9.9% of the total number of stressors reported by all males (n=101). Further, 'getting a bad call
from the umpire' was cited 22 times, reflecting 21.8% of the total stressors reported by males (n=101) and 61.1% of all males participants (n=36).

A gender comparison of the sources of stressors listed in Table 1 indicates the most frequent source for both males and females was 'getting a bad call from the umpire' (61.1% and 43.8% for males and females, respectively), followed closely by 'making a physical game error' (55.5% and 50%). There were also a number of differences between the sources of stress identified by males and females. For example, females reported the stressor 'hearing unpleasant comments from the sideline' considerably more than males (31.3%, 13.9%) respectively, and males reported 'getting a bad game score' considerably more than females (36.1%, 18.8%). The percentage of males citing the stressors, 'hearing unpleasant comments from coaches' and 'hearing unpleasant comments from team-mates' were 8.3% and 11.1%, respectively, but these stressors went unreported by females. However, several sources of stress identified in Table 1 were similar among both genders. These included, the 'sudden success of the opposition' (33.3% and 31.3%, for males and females, respectively), 'the pain of sudden injury' (27.8% and 37.5%), and 'unpleasant comments from the opposition' (27.8% and 18.8%). Frequency of the stressor, 'cheating by the opposition,' was also similar for males and females (5.5% and 6.3%) although the overall percentage was considerably lower than other stressors. In summary, the percentages in Table 1 suggest greater similarity than disparity in the frequency of stressors reported by male and female participants.

**Athletes Responses to Sources of Stress.**

Researchers have identified a number of common (i.e., similar) themes and dimensions into which most sources of stress can be categorised (Cohn, 1990; Gould et al., 1993b; Scanlan et al., 1991). These similar themes, identified through in-depth studies with athletes (golfers and elite ice-skating competitors) include, the 'negative aspects of competition,' 'demands and costs of competition,' 'negative significant other
<table>
<thead>
<tr>
<th>Stressor</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
<th>Total Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq</td>
<td>%①</td>
<td>%②</td>
<td>Freq</td>
<td>%①</td>
<td>%②</td>
</tr>
<tr>
<td>The pain of a sudden injury</td>
<td>10</td>
<td>9.9%</td>
<td>27.8%</td>
<td>6</td>
<td>15.8%</td>
<td>37.5% (3)</td>
</tr>
<tr>
<td>Making a physical game error</td>
<td>20</td>
<td>19.8%</td>
<td>55.5% (2)</td>
<td>8</td>
<td>21%</td>
<td>50.0% (1)</td>
</tr>
<tr>
<td>Sudden success of the opposition</td>
<td>12</td>
<td>11.9%</td>
<td>33.3%</td>
<td>5</td>
<td>13.2%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Hearing unpleasant comments from the sideline</td>
<td>5</td>
<td>4.9%</td>
<td>13.9%</td>
<td>5</td>
<td>13.2%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Hearing unpleasant comments from the coach</td>
<td>3</td>
<td>3.0%</td>
<td>8.3%</td>
<td>0</td>
<td>%</td>
<td>0%</td>
</tr>
<tr>
<td>Hearing unpleasant comments from the opposition</td>
<td>10</td>
<td>9.9%</td>
<td>27.8%</td>
<td>3</td>
<td>7.9%</td>
<td>18.8%</td>
</tr>
<tr>
<td>Hearing unpleasant comments from teammates</td>
<td>4</td>
<td>4.0%</td>
<td>11.1%</td>
<td>0</td>
<td>%</td>
<td>0%</td>
</tr>
<tr>
<td>Getting a bad call from the umpire</td>
<td>22</td>
<td>21.8%</td>
<td>61.1% (1)</td>
<td>7</td>
<td>18.4%</td>
<td>43.8% (2)</td>
</tr>
<tr>
<td>Getting a bad game score</td>
<td>13</td>
<td>12.9%</td>
<td>36.1% (3)</td>
<td>3</td>
<td>7.9%</td>
<td>18.8%</td>
</tr>
<tr>
<td>Cheating by the opposition</td>
<td>2</td>
<td>2.0%</td>
<td>5.5%</td>
<td>1</td>
<td>2.6%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Total</td>
<td>101</td>
<td>100%</td>
<td>55.5%</td>
<td>38</td>
<td>100%</td>
<td>61.1%</td>
</tr>
</tbody>
</table>

Note: Frequency - number of stressors reported for each group
%① - represents the percentage of all stressors reported by males (n=101) and females (n=38)
%② - represents the percentage of the total sample for males (n=36) and females (n=16) who reported each stressor
% Total Group - represents the percentage of all stressors reported for the total group
relationships,' 'personal struggles involved in competition' and 'miscellaneous.' Using these common themes from previous research the 10 responses to acute stress identified by child athletes in Table 1 were categorised under the two themes of 'negative aspects of competition' and 'negative significant other relationships.' In an effort to improve the clarity and coherence of narrative, the athletes’ sources of stress responses were adapted (i.e., paraphrased) while maintaining the original statements integrity.

The following sources of stress were categorised by the ‘negative aspects of competition’ theme. Response examples to the stressor ‘the pain of sudden injury’ included, “I was winded, by an opposition ball that hit me in the chest” and “I was hit by an opponents ball on the leg.” Responses to the stress of ‘making a game error’ included, “I missed a tackle as my opponent approached my goal,” “I missed a shot at goal because of a performance error” and “I made a mistake passing the ball to a teammate.” Responses to the stress of ‘the sudden success of the opposition’ included, “the opposition won by scoring a number of goals at the end of the game,” “we were beaten by the opposition who made a number of sudden attacks on our goal” and “when my team tried to get a goal, the opposition would tackle us and quickly approach our goal and score.” Responses to the stress of ‘hearing unpleasant comments from the sideline’ included, “I heard people behind the goal shouting negative comments at out goal keeper” and “people on the sideline were teasing and making fun of my eye problem.” Responses to the stress of ‘hearing unpleasant comments from the opposition’ included, “when my team made a mistake the opposition were shouting and swearing at us,” “the opposition were laughing and teasing me about my eye problem” and “I was threatened by a player on the opposition after the game because I saved his shot at goal.” These later comments indicate that even at the young age of 10-12 yrs child athletes can be quite aggressive during the competition.

Common examples of bad calls from the umpire reported by both sexes included poor line calls, and awarding undeserved short corners (i.e., play advantage) and free hits
(i.e., penalties) to the opposition. Responses to the stress of 'getting a bad call from the umpire' included, “the umpire mistakenly awarding the opposition the ball after they had made an error” and “the failure of the umpire to notice and penalise fouls committed by the opposition.” Responses to the stress of 'getting a bad game score' included, “my team were beaten 1-11” and “a player on the opposition kept getting past our tackles and scoring.” Responses to the stress of 'cheating by the opposition' included, “the opposition cheat by touching the ball illegally and not admitting the mistake, when the umpire has not seen it” and “the unfairness of the opposition cheating, to those who do not cheat.”

The following sources of stress were categorised by the 'negative significant other relationships' theme, previously identified in research. Responses to the stress of 'hearing unpleasant comments from the coach' included, “the coach was shouting and criticising me for not playing better” and “the coach was shouting at me telling me I was doing something wrong.” Responses to the stress of 'hearing unpleasant comments from teammates' included “I missed a pass from a teammate and my teammates teased me and gave me a hard time” and “my teammates criticised and teased me about my weight and size.” These two examples suggest that comments from team-mates can be directed at either the individuals performance or the individuals personal characteristics. In summary, it is apparent from the response examples that the sources of stress were of real concern to the child athletes.

**Appraisal of Acute Sources of Stress**

The content analyses of the participants' cognitive 'appraisal' of stressors are listed in Table 2. Results are reported for the frequency of appraisals, the percentage of athletes citing the appraisal, and the percentage of all appraisals for each gender. As suggested earlier, the disparity in the total frequency and percentage figures reported reflects not all participants reporting an equal number of stressors and subsequent
The results, as indicated in Table 2, suggest that differences between the two appraisal types, categorised as negative and positive, were more pronounced for males (72.3% of all appraisals were negative and only 27.7% were positive). The female participants also reported more negative than positive appraisals (57.9% and 42.1%, respectively), however, the disparity between these two appraisals was considerably smaller than for males. In summary, the percentage of negative appraisals made in response to acute stressors was considerably more than positive appraisals for the total group, 68.3% and 31.7%, respectively.

Examples of the positive appraisals made by females included, “It made me feel that we should try harder because they shouldn’t be down near us anyway, down near our goals” (i.e., a bad call from the umpire- giving away a penalty), “I was upset with myself but I thought we could still win it, it was probably a good thing because I wanted to play better” (i.e., a game error), and “It makes you feel like you want to try harder” (i.e., a bad game score). The negative appraisals made by females included, “It made me feel as though I was stupid, I should have got up and done what I was supposed to do” (i.e., sudden success of the opposition), “They were giving our goalie a hard time and I was thinking how she didn’t deserve it, and I felt sorry for her” (i.e., unpleasant comments from the opposition), “I thought I’d let the whole team down” (i.e., a game error), and “It annoyed me because the umpire didn’t do anything about it” (i.e., unpleasant comments from opposition - swearing).

Examples of positive appraisals cited by males included, “I’ll have to try harder and try to score and help my teammates score” (i.e., a game error), and in response to cheating from the opposition, “It made me feel like I would try to play harder and tougher,” “Try and show them how good I am without cheating,” and “We’re just going to not cheat, score goals and win.” Examples of negative appraisals reported by males included, “I felt a bit tense because when they tackle you they could hit you or hurt
### Content Analysis of Stress Appraisals

#### Table 2

Frequency and Percentages of Cognitive Appraisals reported by Male (n=36) and Female (n=16) Participants

| Appraisal Type | Males | | %<sup>1</sup> | %<sup>2</sup> | Females | | %<sup>1</sup> | %<sup>2</sup> | Total Group |
|----------------|-------|---|---|---|-------|---|---|---|
|                | Freq  | %<sup>1</sup> | %<sup>2</sup> | Freq  | %<sup>1</sup> | %<sup>2</sup> | Freq  | %
| 1. Negative    | 73    | 72.3 | 202.8 | 22    | 57.9 | 137.5 | 95    | 68.3 |
| 2. Positive    | 28    | 27.7 | 77.8 | 16    | 42.1 | 100.0 | 44    | 31.7 |
| Total          | 101   | 100  |      | 38    | 100  |      | 139   | 100  |

**Note**
- Frequency - indicates number of appraisals cited by athlete
- %<sup>1</sup> - represents percentage of all appraisals reported by males (n=101) and females (n=38) (N of athletes citing appraisal/N of total appraisals) \times 100
- %<sup>2</sup> - represents percentage of appraisals by the total group for males (n=36) and females (n=16) (N of athletes citing appraisal/N of total athletes) \times 100
- % Total Group - represents the percentage of all stressors reported for the total group
you again” (i.e., injury from opposition), and in response to umpires bad calls “It made me feel a bit angry because one of the bad calls they got their break and that’s when they scored their goal,” “I was disappointed because we controlled the whole game, but they won because of the ref,” The ref’s not very good and he shouldn’t have made those mistakes” and “I felt annoyed because the ref didn’t call anything and they scored from it.” In response to a game error examples included, “I felt really bad because I know that I can do it and I just didn’t on that occasion because I wasn’t concentrating enough,” “It made me feel very disappointed in myself and gave me a surge of lack of confidence.” Further examples included, “I felt pretty disappointed because they’re supposed to be helping me” (i.e., unpleasant comments team-mates), and “It made me feel very embarrassed because they were all around me shouting and muttering bad comments at me” (i.e., unpleasant comments opposition).

Coping Responses to Sources of Stress

The coping responses of child athletes to acute stressors were also examined in this study. The frequency and percentage of individuals who reported each coping response for both males and females are reported in Table 3. Participants usually identified more than one coping strategy for each source of stress and, as a consequence, the total number of coping strategies reported often exceeded the number of participants. As indicated in Table 3, the number of coping responses for all males and females was 459, with 330 and 129 for males and females, respectively. The large difference between the male and female figures is a reflection of the sample size in each group. As shown in Table 3, the most frequently reported coping responses for acute stressors from all participants were, ‘I tried to concentrate on what I had to do next’ (13.3%), ‘I tried to forget the whole thing’ (12.6%), ‘I didn’t let it get to me and tried not to think about it too much’ (9.4%), ‘I wished I could change what had happened or how I felt’ (8.9%), and ‘I accepted it as there was nothing I could do’ (8.7%). Further coping responses that were
highly reported included, 'I talked to my team-mates' (7.7%), 'I thought it was due to bad luck' (7%), 'I talked to myself to build up my confidence' (5.4%), and "I wished the situation would be over or go away" (5.4%) for females, and for males 'I thought it was due to bad luck' (6.1%) and 'I talked to my team-mates' (5.7%).

Selected examples of the 'verbatim' coping responses identified by participants are presented in Table 4. An examination of these responses demonstrate that the child athletes in this study, both males and females, employed a variety of cognitive strategies to deal with the acute stressors experienced during field hockey. For example, the 4 coping responses listed for the stressor 'pain of injury' included, "thinking about what to do next," "thinking it was due to bad luck," "accepting it as there was nothing the individual could do" and "wishing the situation would be over." These coping responses highlight the variety of methods employed to cope with this and other stressors in the present study. The present study did not examine the effectiveness of the coping responses employed by child athletes. However, the effectiveness of an intervention program to improve coping efforts with acute stress in sport was examined in study 2.

The categorisation of athletes coping strategies following positive and negative appraisals, as approach or avoidance oriented (i.e., coping style), are presented in Table 5. As previously mentioned, participants usually identified more than one coping strategy for each source of stress (and appraisal) and as a consequence, the total number of coping strategies listed as approach and avoidance exceeded the number of participants. Thus, the total number of coping strategies for both males and females was 459, with 330 and 129 for males and females, respectively. Again, the gender frequency disparity is a reflection of differing sample sizes for each group. As indicated in Table 5, the coping strategies are classified according to the frequency and percentage with which athletes experienced each stressor (and appraisal of that stressor).
<table>
<thead>
<tr>
<th>Coping Response</th>
<th>Male Freq</th>
<th>Male %CD</th>
<th>Male %®</th>
<th>Female Freq</th>
<th>Female %CD</th>
<th>Female %®</th>
<th>Total Freq</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I tried to concentrate on what I had to do next</td>
<td>38</td>
<td>11.5% (2)</td>
<td>105.9%</td>
<td>23</td>
<td>17.8% (1)</td>
<td>143.75%</td>
<td>61</td>
<td>13.3% (1)</td>
</tr>
<tr>
<td>I thought about what I would do next</td>
<td>11</td>
<td>3.3%</td>
<td>30.6%</td>
<td>6</td>
<td>4.6%</td>
<td>37.5%</td>
<td>17</td>
<td>3.7%</td>
</tr>
<tr>
<td>I talked to myself to build up my confidence</td>
<td>9</td>
<td>2.7%</td>
<td>25.6%</td>
<td>7</td>
<td>5.4%</td>
<td>43.75%</td>
<td>16</td>
<td>3.5%</td>
</tr>
<tr>
<td>I talked to myself to calm down and feel better</td>
<td>14</td>
<td>4.2%</td>
<td>38.9%</td>
<td>6</td>
<td>4.6%</td>
<td>37.5%</td>
<td>20</td>
<td>4.4%</td>
</tr>
<tr>
<td>I blamed myself for the problem</td>
<td>5</td>
<td>1.5%</td>
<td>13.9%</td>
<td>1</td>
<td>0.8%</td>
<td>6.25%</td>
<td>6</td>
<td>1.3%</td>
</tr>
<tr>
<td>I criticised or lectured myself</td>
<td>2</td>
<td>0.6%</td>
<td>5.6%</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td>2</td>
<td>0.4%</td>
</tr>
<tr>
<td>I tried to see the situation as something positive</td>
<td>6</td>
<td>1.8%</td>
<td>16.7%</td>
<td>1</td>
<td>0.8%</td>
<td>6.25%</td>
<td>7</td>
<td>1.5%</td>
</tr>
<tr>
<td>I tried to see the benefits of the situation</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>I tried to look on the bright side of things</td>
<td>17</td>
<td>5.2%</td>
<td>47.2%</td>
<td>4</td>
<td>3.1%</td>
<td>25%</td>
<td>21</td>
<td>4.6%</td>
</tr>
<tr>
<td>I thought it was due to bad luck</td>
<td>20</td>
<td>6.1%</td>
<td>55.6%</td>
<td>9</td>
<td>7% (4)</td>
<td>56.25%</td>
<td>29</td>
<td>6.3%</td>
</tr>
<tr>
<td>I tried to forget the whole thing</td>
<td>44</td>
<td>13.3% (1)</td>
<td>122.2%</td>
<td>14</td>
<td>10.8% (2)</td>
<td>87.5%</td>
<td>58</td>
<td>12.6% (2)</td>
</tr>
<tr>
<td>I went on as if nothing happened</td>
<td>7</td>
<td>2.1%</td>
<td>19.4%</td>
<td>2</td>
<td>1.5%</td>
<td>12.5%</td>
<td>9</td>
<td>2.0%</td>
</tr>
<tr>
<td>I didn’t let it get to me and tried not to think about it too much</td>
<td>33</td>
<td>10% (3)</td>
<td>91.7%</td>
<td>10</td>
<td>7.7% (3)</td>
<td>62.5%</td>
<td>43</td>
<td>9.4% (3)</td>
</tr>
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<td></td>
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<tr>
<td>Table 3: continued</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I refused to believe it had happened</td>
<td>1</td>
<td>0.3%</td>
<td>2.8%</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tried to keep my feelings to myself</td>
<td>4</td>
<td>1.2%</td>
<td>11.1%</td>
<td>2</td>
<td>1.5%</td>
<td>12.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I asked a team-mate for advice</td>
<td>2</td>
<td>0.6%</td>
<td>5.6%</td>
<td>1</td>
<td>0.8%</td>
<td>6.25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I made a promise to myself things would be different next time</td>
<td>7</td>
<td>2.1%</td>
<td>19.4%</td>
<td>5</td>
<td>3.9%</td>
<td>31.25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I accepted it as there was nothing I could do</td>
<td>31</td>
<td>9.4%</td>
<td>86.1%</td>
<td>9</td>
<td>7% (4)</td>
<td>56.25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I wished I could change what had happened or how I felt</td>
<td>33</td>
<td>10% (4)</td>
<td>91.7%</td>
<td>8</td>
<td>6.2%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I daydreamed or imagined myself in a better place</td>
<td>1</td>
<td>0.3%</td>
<td>2.8%</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I wished the situation would be over or go away</td>
<td>7</td>
<td>2.1%</td>
<td>19.4%</td>
<td>7</td>
<td>5.4%</td>
<td>43.75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I prayed</td>
<td>4</td>
<td>1.2%</td>
<td>11.1%</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tried to think what someone I admire would do and copy them</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tried to see thing from the other persons point of view</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td>1</td>
<td>0.8%</td>
<td>6.25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I reminded myself that things could be much worse</td>
<td>15</td>
<td>4.5%</td>
<td>41.7%</td>
<td>3</td>
<td>2.3%</td>
<td>18.75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I talked to my team-mates</td>
<td>19</td>
<td>5.7%</td>
<td>52.8%</td>
<td>10</td>
<td>7.7% (3)</td>
<td>62.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>99.7%</td>
<td>129</td>
<td>99.7%</td>
<td>459</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: 'Frequency - number of coping responses reported for each group
%© - represents the percentage of all coping responses reported by males (n=101) and females (n=38)
%© - represents the percentage of the total sample for males (n=36) and females (n=16) who reported each coping response
% Total Group - represents the percentage of all coping responses reported for the total group
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<tr>
<th>Stressor 1: The Pain of Sudden Injury</th>
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<tbody>
<tr>
<td>&quot;I just said next time I’ll go to make the tackle and have something ready so I can move my foot out of the way, and make up a little plan in my head&quot; (F)</td>
</tr>
<tr>
<td>&quot;This hurts and I just wish it would hurry up and get over&quot; (M)</td>
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<tr>
<td>&quot;I just thought it was bad luck on the game that would get us into the quarter finals&quot; (M)</td>
</tr>
<tr>
<td>&quot;There is nothing I can do, what’s the point in trying to do something&quot; (M)</td>
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<table>
<thead>
<tr>
<th>Stressor 2: Making a Physical Game Error</th>
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<tr>
<td>&quot;I just told em to back me up just in case I did it again&quot; (F)</td>
</tr>
<tr>
<td>&quot;I just tried to concentrate on just going up and smacking the ball as hard as I could&quot; (F)</td>
</tr>
<tr>
<td>&quot;I just tried to concentrate on making sure I was in the right position next time to not let it happen again&quot; (F)</td>
</tr>
<tr>
<td>&quot;Just like don’t let it happen again and next time just get there faster and mark up tighter&quot; (F)</td>
</tr>
<tr>
<td>&quot;Just gonna make myself be more careful next time&quot; (F)</td>
</tr>
<tr>
<td>&quot;Try to get in more tackles and look for the ball more as look for more space... look for more people and easy passes&quot; (M)</td>
</tr>
<tr>
<td>&quot;I was praying that he would maybe get in a fight with someone and maybe get sent off for the rest of the game&quot; (M)</td>
</tr>
<tr>
<td>&quot;Yeh, I just wish I could have just took more time in hitting the shot&quot; (M)</td>
</tr>
<tr>
<td>&quot;Leave it alone, it’s happened there’s nothing you can do&quot; (M)</td>
</tr>
<tr>
<td>&quot;I tried not to think about it but it didn’t really work&quot; (M)</td>
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<tr>
<td>&quot;Concentrating to keep the ball on my stick or push it at the goals&quot; (M)</td>
</tr>
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<table>
<thead>
<tr>
<th>Stressor 3: The Sudden Success of the Opposition</th>
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<tbody>
<tr>
<td>&quot;I just thought next time I’ll go in harder and do better than I just did&quot; (F)</td>
</tr>
<tr>
<td>&quot;I just said oh let it go, there’s nothing you can do&quot; (F)</td>
</tr>
<tr>
<td>&quot;I used my mind and stopped thinking about it and tried to think of something else&quot; (F)</td>
</tr>
<tr>
<td>&quot;I just get on with the game and just put it in the back of my head and think it’s nil all&quot; (M)</td>
</tr>
<tr>
<td>&quot;There was nothing I could do, just concentrate on the game and stuff like pass the ball good&quot; (M)</td>
</tr>
<tr>
<td>&quot;Think about trying to bring the ball up to their circle&quot; (M)</td>
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<table>
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<tr>
<th>Stressor 4: Hearing Unpleasant Comments from the Sideline</th>
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<tbody>
<tr>
<td>&quot;I just made myself think about something else&quot; (F)</td>
</tr>
<tr>
<td>&quot;There’s nothing I can do so why worry about it&quot; (F)</td>
</tr>
</tbody>
</table>

Note: F and M denote female and male responses respectively.
Stressor 5: Hearing Unpleasant Comments from the Coach
“Oh don’t worry, I’ll just do what the coach tells me so I don’t get in his bad books” (M)
“I just said to myself, it wasn’t your fault you’re trying your best, don’t worry about him shut him out and play the game” (M)

Stressor 6: Hearing Unpleasant Comments from the Opposition
“Oh that the whistle would blow so that I could go home and think about the next game” (F)
“Accept it because there was nothing I could do and I just didn’t want to start arguing or get a card” (F)
“I just thought of other things and just didn’t pay any attention to it” (F)

Stressor 7: Hearing Unpleasant Comments from Teammates
“Just ignore it, just don’t listen, turn my back and block them out like they’re not there” (M)
“I wished my team-mates wouldn’t give me a hard time” (M)

Stressor 8: Getting a Bad Call from the Umpire
“Oh just get on with the game, that was only one bad call” (F)
“Oh well there’s nothing you can do, so just get on with the game” (F)
“Just get on with it because sometimes if you backchat the ref they’ll give you a card or something” (F)
“There’s no point telling off the ref, I’d just get a card or something” (F)
“I was saying if you go out to that umpire now and have a go, you’ll only get a red card” (M)
“I just called them a few names in my head and that cooled me down a bit” (M)
“I prayed that someone would have the guts to stand up to the refs and ask why’d you do that… anybody” (M)
“I prayed to god to make our game go better” (M)
“You just don’t think about it, and try not worry” (M)
“You just think that you can’t do anything about it, you can’t change it, it’s his call” (M)
“I just thought it was bad luck that the ref hadn’t seen the other team were off-side” (M)
“I tried to forget the whole thing, just by saying don’t go out to the ref and have a go at him, it’s happened now there’s nothing you can do” (M)
“Yeh, I just say ignore them, ignore them” (M)

Stressor 9: Having a Bad Game Score
“I just pretended it was NIL all, and we had to score really quickly ‘cause it was nearly half time” [actually 2-0 down] (F)
“I was hoping, praying that we would do better next time” (M)
“I reminded myself that we still weren’t together and we had a new coach that didn’t know us and didn’t know what positions we were playing” (M)

Stressor 10: Cheating by the Opposition
“I thought it was bad luck that the ref wasn’t picking it up” (F)
For example, use of an avoidance coping strategy in response to a negative appraisal of stressor 1 (the pain of injury) was reported by 26 males, reflecting 72.2% of the total male sample \( (n=36) \), but only 7.9% of the total coping strategies reported by males \( (n=330) \). Further, the use of an approach strategy in response to a negative appraisal of stressor 2 (game error) was reported by three females, representing 18.75% of the total female sample \( (n=16) \), but only 2.3% of the total coping strategies reported by females \( (n=129) \). Finally, for female athletes three of the 10 stressors were not experienced at all, including, "unpleasant coach comments," "unpleasant team-mate comments" and "cheating by the opposition," while for male athletes the two stressors "unpleasant coach comments" and "unpleasant team-mate comments" attracted no approach coping response.

As indicated in Table 5, avoidance coping represented the most frequently used coping strategy, representing 85.9% and 80.55% of total coping for males and females, respectively. However, males reported greater avoidance strategies in response to negative appraisals than females, 67.5% and 47.25% of total coping, respectively. While, females reported greater avoidance strategies in response to positive appraisals than males, 33.3% and 18.4%, respectively. However, there were variations between individual stressors. Thus, for example males favoured avoidance strategies in response to negative appraisals on the stressors "pain of injury," "game error," "sudden opposition success," "unpleasant coach comments," "unpleasant opposition comments," "unpleasant comments team-mates," "bad umpire calls" and "getting a bad game score," representing a range of 2.1% to 15.2% of total coping for males. Females, however, reported greater avoidance strategies in response to negative appraisals on the stressors "pain of injury," "unpleasant sideline comments," "unpleasant opposition comments" and "bad umpire calls," representing a range of 6.2% to 13.95% of total coping for females. Further, where males favoured avoidance strategies in response to positive appraisals on the stressors "unpleasant comments sideline" and "cheating by the opposition," these
Table 5

Frequency and Percentages of Approach, Avoidance Coping Styles in Response to Individual Stressors for Male (n=36) and Female (n=16) Participants

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(Table 5: continued)

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<tr>
<td><strong>Total</strong></td>
<td><strong>Freq</strong></td>
<td><strong>46</strong></td>
<td><strong>13.8%</strong></td>
<td><strong>284</strong></td>
<td><strong>85.9%</strong></td>
<td><strong>25</strong></td>
<td><strong>19.45%</strong></td>
<td><strong>1.04</strong></td>
<td><strong>80.55%</strong></td>
<td><strong>71</strong></td>
<td><strong>15.4%</strong></td>
</tr>
</tbody>
</table>

Note: frequency - indicates the number of coping responses cited by athletes and the coping style it reflects

%<D - represents percentage of coping reported (i.e., style) by the total group for males (n=36) and females (n=16)

%® - represents percentage of all coping reported (i.e., style) by males (n=330) and females (n=129)
accounted for a range of only 1.5% to 2.4% of total coping for males. Females however, favoured avoidance coping strategies in response to positive appraisals on the stressors “game errors,” “sudden opposition success,” “getting a bad game score” and “cheating by the opposition,” representing a range of 2.3% to 8.5% of total coping for females.

The total percentage of approach strategies used by females and males was 19.45% and 13.8%, respectively, considerably less than that observed for avoidance coping. Further, the percentage total of approach coping in response to negative appraisals was 9.35% and 8.7% for females and males, and 10.1% and 5.1%, for positive appraisals, respectively. Thus, approach coping strategies were more frequently employed by female than male athletes, for both negative and positive appraisals. However, variations existed between individual stressors. For example, males used a greater proportion of approach coping strategies in response to a negative appraisal on the stressors “the pain of injury,” “sudden opposition success,” “bad umpire calls” and “getting a bad game score,” reflecting a range of 1.2% to 2.4% of total coping for males. Females, however, reported greater approach coping in response to negative appraisals on the stressors “unpleasant sideline comments,” “unpleasant opposition comments” and “bad umpire calls,” representing a range of 0.8% to 1.55% of total coping for females. In response to positive appraisal of stressors, males employed greater approach strategies in response to the stressors “game error,” “unpleasant opposition comments” and “cheating by the opposition,” reflecting a range of only 0.3% to 1.8% of total male coping, while females reported greater approach coping in response to positive appraisals for the stressor “game errors” and “bad game scores” reflecting a range of 2.8% to 4.65% of total coping for females.

In summary, male and female athletes demonstrated a considerably greater use of avoidance than approach strategies in response to both negative and positive appraisals. However, the overall percentage use of avoidance strategies in response to negative appraisals was considerably greater for males than females, whilst females reported a
greater use of avoidance strategies in response to positive appraisals. Further, females reported greater use of approach strategies than males in response to both negative and positive appraisals. Thus, the coping strategies reported by male and female athletes in response to stressful events in the present study were more dissimilar than similar.

Quantitative Analyses

A Pearson-product correlation analysis, conducted to examine the relationship between trait anxiety (as measured on SCAT-C) and the proportion of negative appraisals reported by child athletes, indicated a low and non-significant relationship (r = -.12). Thus, child athletes scoring relatively higher on SCAT-C (i.e., trait anxiety) did not report a higher proportion of negative appraisals, as expected. Rather, child athletes scoring relatively higher on SCAT-C (i.e., trait anxiety) reported a fewer proportion of negative appraisals.

Negative Appraisals

Pearson-product correlation analyses were computed to explore the relationships between trait anxiety (as measured on SCAT-C) and the proportion of negative appraisals, and between self-esteem (as measured on SEI-C) and the proportion of negative appraisals reported by child athletes, respectively. These correlation co-efficients and probability values are presented in Table 6.

Table 6

Correlation Co-efficients and Probability Values for Negative Appraisals and Trait Anxiety (SCAT-C) and Self-esteem (SEI-C), respectively, for Male (n=36) and Female (n=16) Participants and The Total Group (N=52)

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<th>Females</th>
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</thead>
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<tr>
<td>p = .82</td>
<td></td>
<td>p = .51</td>
<td>p = .38</td>
</tr>
<tr>
<td>SEI</td>
<td>.33</td>
<td>-.47</td>
<td>-.03</td>
</tr>
<tr>
<td>p = .05*</td>
<td></td>
<td>p = .07</td>
<td>p = .82</td>
</tr>
</tbody>
</table>

* significant at .05
As shown in Table 6, the relationship between trait anxiety (i.e., SCAT-C) and the proportion of negative appraisals reported was low, negative, and non-significant for females \((r = -.18)\). Thus, female child athletes scoring relatively higher on SCAT-C (i.e., trait anxiety) did not report a greater proportion of negative appraisals as expected. Rather, as the negative correlation indicates, female child athletes scoring relatively higher on SCAT-C reported a fewer proportion of negative appraisals.

The correlation co-efficient for males \((r = -.04)\) indicated no relationship between trait anxiety (i.e., SCAT-C) and the proportion of negative appraisals. Thus, scoring relatively higher on SCAT-C (i.e., trait anxiety) was not related to a greater proportion of negative appraisals reported by male athletes. While non-significant, however, the relationship between these variables was somewhat stronger for females than males \((r's = -.18\) and \(-.04\), respectively).

The relationship between self-esteem (i.e., SEI-C) and the proportion of negative appraisals reported is also shown in Table 6. The correlation co-efficient for females indicated a moderate, non-significant correlation between self-esteem and the proportion of negative appraisals \((r = -.47)\). However, while non-significant, the strength of this relationship was considerably stronger for females than males \((r's = -.47\) and \(.33\), respectively).

The correlation co-efficient between self-esteem (i.e., SEI-C) and the proportion of negative appraisals reported by males also indicated a significant, but moderate relationship \((r = .33, p = .05)\). Thus, male athletes scoring relatively higher on SEI-C (i.e., self-esteem) did not report a fewer proportion of negative appraisals as expected. Instead, as the positive correlation suggests, males scoring relatively higher on SEI-C reported a greater proportion of negative appraisals. A Pearson correlation analysis conducted to examine the relationship between self-esteem (as measured on SEI-C) and the proportion of negative appraisals reported by all child athletes, indicated a low, non-significant relationship between these variables \((r = -.03)\).
Positive Appraisals

Further Pearson-product correlation analyses were calculated to explore possible gender differences in the relationship between self-esteem (as measured on SEI-C) and trait anxiety (as measured on SCAT-C) respectively, and the proportion of positive appraisals reported by child athletes. These correlation co-efficients and probability values are listed in Table 7.

As indicated in Table 7, the correlation co-efficient between self-esteem (i.e., SEI-C) and proportion of positive appraisals reported by females indicated a non-significant but strong medium relationship ($r = .47$). Although non-significant, the strength of this relationship was considerably greater for females than males ($r's = .47$ and -.33, respectively). Thus, while non-significant the trend of the relationship between SEI-C and proportion of positive appraisals reported for females was in the direction proposed.

Table 7

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCAT-C</td>
<td>.04</td>
<td>.18</td>
<td>.13</td>
</tr>
<tr>
<td>p = .82</td>
<td></td>
<td>p = .51</td>
<td>p = .38</td>
</tr>
<tr>
<td>SEI</td>
<td>-.33</td>
<td>.47</td>
<td>.03</td>
</tr>
<tr>
<td>p = .05*</td>
<td></td>
<td>p = .07</td>
<td>p = .81</td>
</tr>
</tbody>
</table>

* significant at .05

This is supported by the probability value as listed in Table 7, which is approaching significance at the .05 level. In summary, the trend for female athletes scoring relatively higher than males on the SEI-C (i.e., self-esteem) appeared to be related to a higher proportion of positive appraisals reported.
The correlation co-efficient for males indicated a significant, yet moderate relationship between the SEI-C and the proportion of positive appraisals reported ($r = -0.33$, $p = .05$). However, while the relationship between SEI-C (i.e., self-esteem) and the proportion of positive appraisals reported for males was significant, it was considerably weaker than the correlation noted for females ($r's = -0.33$ and $0.47$, respectively). In summary, scoring relatively higher on SEI-C was related to a fewer proportion of positive appraisals reported by male athletes.

**Self-esteem**

The previous correlations reported for males and females on the relationship between the SEI-C and the proportion of positive and negative appraisals, respectively, suggested a gender variation. Thus, in order to further explore this gender difference, separate Pearson-product correlations were computed to examine the relationship between each of the components of the SEI-C and positive and negative appraisals, respectively. The measure used in the current study comprised four separate components of self-esteem that combined to form the total self-esteem score. These components included general, social, home/family, and school/academic. It was of interest, therefore, to examine any evidence of gender differences in the relationship between self-esteem and positive and negative appraisals, respectively, as related to the four components of the SEI-C. These correlation co-efficients and probability values are presented in Tables 8 and 9.

As indicated in Table 8, the correlation co-efficients between the four components of the SEI-C and the proportion of positive appraisals reported by females were, $r = .52$ (general), $r = .31$ (social), $r = .37$ (home), and $r = .19$ (school). These correlations indicate a moderate relationship between the first three components of self-esteem and the proportion of positive appraisals reported by females. However, only the general component was significant, ($p = .04$). The correlation co-efficients for males between the four components of self-esteem and the proportion of positive appraisals were, $r = -0.30$. 
(general), $r = -.33$ (social), $r = -.13$ (home), and $r = -.21$ (school). These correlations indicate a moderate relationship between both the general and social components of self-esteem and the proportion of positive reported for males, however, only the social component was significant ($p = .05$). In summary, the component of self-esteem significantly related to the proportion of positive appraisals reported by child athletes was general self-esteem for females and social self-esteem for males.

**Table 8**

Correlation Co-efficients and Probability Values for the Proportion of Positive Appraisals and Components of Self-esteem for Male ($n=36$) and Female ($n=16$) Participants and The Total Group ($N=52$)

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>-.30</td>
<td>.52</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>$p = .08$</td>
<td>$p = .04^*$</td>
<td>$p = .86$</td>
</tr>
<tr>
<td>Social</td>
<td>-.33</td>
<td>.31</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>$p = .05^*$</td>
<td>$p = .24$</td>
<td>$p = .84$</td>
</tr>
<tr>
<td>Home</td>
<td>-.13</td>
<td>.37</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>$p = .47$</td>
<td>$p = .15$</td>
<td>$p = .70$</td>
</tr>
<tr>
<td>School</td>
<td>-.21</td>
<td>.19</td>
<td>-.02</td>
</tr>
<tr>
<td></td>
<td>$p = .22$</td>
<td>$p = .47$</td>
<td>$p = .87$</td>
</tr>
</tbody>
</table>

* significant at $p = .05$

As indicated in Table 9, the correlation co-efficients between the four components of self-esteem and the proportion of negative appraisals reported by females were, $r = -.52$ (general), $r = -.32$ (social), $r = -.38$ (home), and $r = -.20$ (school). These correlations indicate a moderate relationship between the first three components of self-esteem and the proportion of negative appraisals reported by females. Only the general component was significant, however ($p = .04$). The correlation co-efficients for males between the four components of self-esteem and the proportion of negative appraisals were, $r = .30$
(general), $r = .33$ (social), $r = .13$ (home), and $r = .22$ (school). These correlations indicate a moderate relationship for both the general and social components of self-esteem and the proportion of positive reported by males, however, only the social component was significant ($p = .05$). In summary, the component of self-esteem significantly related to the proportion of positive appraisals reported by child athletes was general self-esteem for females, and social self-esteem for males. Taken together, these results suggest that the relationship between the SEI-C and the proportion of both positive and negative appraisals reported by female and male athletes differs markedly.

**Table 9**

Correlation Co-efficients and Probability Values for the Proportion of Negative Appraisals and Components of Self-esteem (SEI-C) for Male (n=36) and Female (n=16) Participants and The Total Group (N=52)

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>.30</td>
<td>-.52*</td>
<td>-.02</td>
</tr>
<tr>
<td></td>
<td>$p = .08$</td>
<td>$p = .04$</td>
<td>$p = .87$</td>
</tr>
<tr>
<td>Social</td>
<td>.33*</td>
<td>-.32</td>
<td>-.03</td>
</tr>
<tr>
<td></td>
<td>$p = .05$</td>
<td>$p = .23$</td>
<td>$p = .84$</td>
</tr>
<tr>
<td>Home</td>
<td>.13</td>
<td>-.38</td>
<td>-.05</td>
</tr>
<tr>
<td></td>
<td>$p = .46$</td>
<td>$p = .15$</td>
<td>$p = .70$</td>
</tr>
<tr>
<td>School</td>
<td>.22</td>
<td>-.20</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>$p = .21$</td>
<td>$p = .47$</td>
<td>$p = .87$</td>
</tr>
</tbody>
</table>

* significant at $p = .05$

As previously indicated in Table 7, the relationship between trait anxiety (i.e., SCAT-C) and the proportion of positive appraisals reported by females was both low, and non-significant ($r = .18$). Thus, female child athletes scoring relatively higher on the SCAT-C did not report a fewer proportion of positive appraisals. Rather, as the positive correlation indicates, female child athletes scoring relatively higher on SCAT-C (i.e., trait
anxiety) also reported a greater proportion of positive appraisals. It is interesting that while non-significant, the relationship between these variables was somewhat stronger for females than males (r’s = .18 and .04, respectively).

The correlation co-efficient for males (r = .04) indicated no relationship between trait anxiety (i.e., SCAT-C) and the proportion of positive appraisals reported. Thus, scoring relatively higher on SCAT-C (i.e., trait anxiety) was not related to a fewer proportion of positive appraisals reported by male athletes as anticipated. In summary, the relationship between SCAT-C (i.e., trait anxiety) and the proportion of positive appraisals reported was contrary to that proposed for females, while no relationship was evident for males.

**Table 10**

Means and Standard Deviations for Trait Anxiety (SCAT-C) and Self-Esteem (SEI-C), respectively, for Males (n=36) Females (n=16) and SCAT-C and SEI-C Normative data

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sd</td>
<td>Mean</td>
<td>Sd</td>
</tr>
<tr>
<td>SCAT-C</td>
<td>16.2</td>
<td>4.17</td>
<td>17.3</td>
<td>3.86</td>
</tr>
<tr>
<td>(Martens, 1990)</td>
<td>17.8</td>
<td>4.33</td>
<td>18.7</td>
<td>4.82</td>
</tr>
<tr>
<td>SEI</td>
<td>74.6</td>
<td>14.22</td>
<td>77.9</td>
<td>17.10</td>
</tr>
<tr>
<td>(Coopersmith, 1984)</td>
<td>70.1</td>
<td>13.8</td>
<td>72.2</td>
<td>12.8</td>
</tr>
</tbody>
</table>

As indicated in Table 10, the mean SCAT-C score for male and female athletes in the present study was lower than the mean SCAT-C norms reported by Martens (1990), for a similar age group. Interestingly, the small gender differences noted by Martens were also evident in the present study. The mean SEI-C scores for male and female athletes also varied to the normative data. As indicated in Table 10, the mean SEI-C for males and females in the present study were greater than the mean SEI-C norms reported by Coopersmith (1984). Interestingly, the gender difference in means for males and females reported by Coopersmith, were also noted for athletes in the present study.
It was thought that coping strategies (categorised as approach/avoidance coping) used by participants in response to stressors would be related to the individual's appraisal (positive/negative) of that particular stressor. Pearson product-moment correlations were conducted to examine the relationship between coping strategies (categorised as approach/avoidance) and appraisal type (negative/positive). Results suggested that correlations between coping strategy (approach/avoidance) and negative appraisals were low and non-significant ($r$'s = .30 and .24, respectively, $p > .05$). Further, correlations between coping strategies (approach/avoidance) and positive appraisal were also low and non-significant ($r$'s = .31 and .24, respectively, $p > .05$). These results indicated that the athletes' coping strategy (categorised as approach/avoidance) was not associated with appraisal type (positive/negative). Approach and avoidance coping tendencies were therefore independent of the individuals' positive or negative appraisals of the stressful event.

A MANOVA was conducted to examine gender differences on coping strategies (approach and avoidance). Results indicated a non-significant group main effect $F (2, 33) = .97, p > .05$. Thus, coping strategy responses (approach/avoidance) did not vary significantly as a function of gender. The calculated means for approach coping were .37 and .34 for females and males, respectively, and .83 and .81, respectively, for avoidance coping. This result indicates that males and females did not markedly differ on their coping strategies (approach/avoidance).

**Reliability of Inventories used in Study One**

The reliability co-efficients of the SCAT-C (Martens, 1977) and SEI-C (Coopersmith, 1967) were calculated to assess the reliability of the scales used in the present study. The obtained reliability co-efficients for the SCAT-C and SEI-C were .80 and .88, respectively, considered acceptably high. Intra-class reliability's were also calculated for all sub-scales of the SEI, with co-efficients of .59 (school), .70 (Social), .74
The reliability co-efficient for the Lie scale was particularly low, however, at .34. This low co-efficient may reflect the fact that a number of male and female participants had lie scale scores greater than five (on a scale from 1-8) suggesting the possibility of inaccurate reporting. Coopersmith (1984) suggested that a high score on the lie scale represented defensiveness in a participant’s response and an attempt to respond in a positive light and suggested the use of supplemental observational ratings in such situations. However, such efforts were not possible within the confines of this study, and the poor reliability co-efficient may indicate that a true representation of self-esteem scores may not have been achieved in this study. Further, as no self-esteem measures exist for child athletes, and the Coopersmith inventory is not sport-related, it is possible that this inventory may not be appropriate for use with children in sport.
This discussion is divided into two components reflective of both qualitative and quantitative analyses. The qualitative component examined the sources of stress experienced by child athletes aged 10-12 yrs in competitive field hockey and the cognitive appraisals and coping strategies in response to these stressors. The qualitative results supported a large body of previous research, however, a number of differences were also noted along with information not previously examined in sport research. The quantitative component examined the dispositions of trait anxiety and self-esteem in relation to cognitive appraisals of stressors.

Three hypotheses were proposed: that higher trait anxiety would be related to a greater proportion of negative appraisals, that higher self-esteem would be related to a greater proportion of positive appraisals, and the athletes’ coping strategies (categorised as approach/avoidance) would be related to their positive or negative appraisal of that stressor. Specifically, that male participants would use more approach and less avoidance coping strategies than females. The results of the present study did not support any of these hypotheses.

Qualitative Results

The qualitative data consisted of responses of child athletes from structured personal interviews concerned with the frequency with which the athletes experienced 10 sources of stress during competition. The results indicated that “getting a bad call from the umpire” and “making a physical game error” were the two highest ranked and most frequently cited sources of stress for both males and females. These most frequently cited sources of stress in the present study are supported by previous studies (e.g., Stratton & Pierce, 1981; Gould et al., 1983b). For example, Pierce and Stratton’s (1981) study of youth sport participants aged 10-17 years found that the two most frequently reported ‘worries’ (i.e., stressors) from a list of 10 stressors were not playing well and making a
mistake, as reported by approximately 63.3% and 62.5% of all athletes respectively. Indeed, as many as 44.2% of the athletes in the Pierce and Stratton study indicated that ‘worries’ (i.e., stressors) prevented them from playing to the best of their ability. Similarly Gould, Horn, and Spreeman (1983b) noted that poor wrestling performance (42.4%) and not performing up to one’s ability (29.7%) were major sources of stress.

The results of this study of child athletes revealed considerable variation in their perceived sources of stress. This is evidenced by the extensive range of percentages reported for stressors experienced and the fact that no stressor was experienced 100% by all athletes, whether male or female. Similarly, Gould et al. (1983b) indicated considerable individual differences existed in the perceived sources of stress reported by young wrestlers.

However, a number of sources of stress experienced by child athletes in the present study differed to those sources of stress identified in other athletic populations. This is not surprising since apparently no other published research exists on sources of stress for children aged 10-12 yrs. For example, Cohn’s (1990) exploratory study on sources of stress in youth golf involved 10 individuals aged 15-17 yrs, and the sources of stress for former elite figure skaters identified by Scanlan et al. (1988) and National champion figure skaters identified by Gould et al. (1993b) covered an age range of 22-49 yrs and 18-33 yrs, respectively. Even that research purporting to reflect sources of stress for junior athletes ignores the younger athlete similar in age to this study. For example, Gould et al.’s (1983b) sources of stress in junior elite wrestlers involved adolescent individuals aged 13-19 yrs. A survey of 543 10-17 yr olds on their sources of stress by Pierce and Stratton (1981) involved both children and adolescents, yet there was no differentiation between these two age groups in the sources of stress identified. Finally, the extensive work of Scanlan and her colleagues (1978, 1979) on child athletes aged 10-11 yrs examined only the intrapersonal (e.g., competitive trait anxiety, self-esteem) and situational factors (e.g., winning/losing, game closeness, fun) related to pre- and post-
competition state anxiety levels, but not identify the sources of stress experienced by child athletes.

A further comparison between the results in the present study and research by Gould et al. (1983b) highlights the differences between the stressors identified in these two sports (field hockey and wrestling). For example, bad calls from the umpire were the most frequently cited source of stress in the present study. This may reflect the fact that participants were playing in an amateur competition where qualified umpires are a rarity. In fact, it is commonly the case that a player from a higher grade or a sideline spectator assumes the role of umpire, and hence, the abilities of such individuals as umpires may be questionable. This could also explain why Gould et al. (1983b) found that 'getting a bad call from the umpire' was ranked low, only 22 from 33 stressors. Further, only 15% of the Gould et al. sample reported experiencing this stressor frequently, while in the present study 'getting a bad call from the umpire' was the highest ranked and most frequently reported stressor overall, representing 61.1% and 43.75% of males and females, respectively. Also, the Gould et al. study involved elite wrestlers competing at a National championship where the standard of competition and skill level of umpires would be expectedly higher and more consistent. This difference between the two samples may partially explain the difference between the top stressors reported.

For example, the three highest ranked and most frequently reported stressors by the wrestling participants in the Gould et al. study were performing up to level of ability, improving on my last performance, and participating in championship meets (53.2%, 48.6%, and 44.4% respectively). These stressors reflect the competitive situation, namely a National championship where the need to progress through a series of rounds determines entry to subsequent rounds and the final. However, the frequency of the sources of stress reported in the present study are reflective of a non-elite athlete sample, with varying abilities in a local junior hockey competition.

A further comparison between the results in this study and Cohn's (1990) study is
that the three most frequently reported stressors included playing a difficult shot, playing up to personal standards, and the first ‘t-shot,’ bear little relationship to those stressors identified in the present study, and instead, highlight the differences between these sports. Similarly Cohn’s (1990) exploratory study on the sources of stress in youth golf presents another unique situation. Again, as previously mentioned, the age range for participants was 15-17 yrs. Further, golf is a uniquely individual game. Thus, unlike Gould et.al’s study, wrestling, an open skill in which two competitors are constantly engaged in competing and a single error can ‘cost the round,’ golf, on the other hand, involves competition against a field of many players where the individual competes almost in isolation from other golfers. Further, in golf you may play very poorly on some shots but then you have the opportunity to perform better on others, and different types of performance errors are committed than a wrestler or hockey player. Thus, the sources of stress identified in previous research are highly reflective of the athletes’ experiences in the different sports.

As previously indicated, the sources of stress identified by child athletes were cognitively appraised as either negative or positive. The challenge, threat, and loss categories identified by Lazarus and Folkman (1984) were not applied in this study because distinguishing between threat and loss was thought to be beyond the cognitive capabilities of 10-12 year olds. Hence, threat and loss were combined to form negative appraisals, while challenge became known as positive appraisals.

The cognitive appraisals of the sources of stress identified by the athletes were largely negative for both males and females. However, a considerable difference existed in the percentage figures reported by each sex, with males reporting as many as 72.3% of all appraisals as negative, while females reported only 57.9%. Thus, the margin between the percentage of negative and positive appraisals reported by child athletes was considerably smaller for females than males, with females and males, respectively, reporting 42.1% and 27.7% positive appraisals. Explanations for the difference in
appraisals are absent in the literature, and remain difficult to explain. It is recognised, however, that this disparity may reflect a difference in the mean self-esteem scores for males and females (M’s = 74.6 and 77.9, respectively). Consequently, in line with Coopersmith’s (1967) definition, individuals who have high self-esteem believe themselves to be capable and successful. They should perceive themselves, therefore, as having the necessary personal resources to meet the demands of the situation, as reflected by a greater proportion of positive than negative appraisals. However, further research is needed to examine this hypothesis.

The child athletes in this study reported a variety of coping responses to deal with the acute stressors experienced in competitive sport. Indeed, participants were not limited to one particular coping strategy and usually identified more than one for each source of stress, as evidenced in the high overall total figures and percentages for coping responses. This finding is consistent with the previous adult coping literature in both general (e.g., Compas, 1987; Folkman & Lazarus, 1985) and sport psychology (e.g., Gould et al., 1993a; 1993b), in which coping is viewed as a dynamic and complex process that can involve a number of strategies, often in combination. Further, the adolescent coping literature also supports the wide usage of coping strategies by adolescents without an excessive emphasis or dominance of one or two strategies (Frydenberg & Lewis, 1991; 1993).

Recent findings by Gould and colleagues identified a variety of coping strategies employed by elite adult athletes (Gould et al., 1993a; 1993b). These strategies included thought control (e.g., blocking distractions, positive thinking, perspective taking, coping thoughts, prayer), task focus (e.g., narrow, more immediate focus, concentrating on goals), behavioural (e.g., changing/controlling the environment, following a set routine), and emotional control strategies (e.g., arousal control, visualisation). The authors noted that the most frequently employed strategies were thought control (80%), whereas the remaining three strategies were reported less frequently (40%).
In the present study, the most frequently reported coping strategies by participants were largely identical to those strategies and higher-order themes previously identified by Gould and colleagues (e.g., Gould et al., 1993a; b). For example, the two highest ranked and most frequently reported coping strategies in the present study, 'concentrating on what to do next' and 'trying to forget the stressor' reflect the use of strategies in the task focus and thought control strategies, respectively, as identified by Gould and associates. Similar to the previously mentioned findings, the predominantly reported coping strategies by participants in the present study were thought control strategies. A number of frequently cited coping strategies in the present study, considered by Gould and colleagues as involving thought control strategies, include 'wishing to change what happened,' 'accepting the stressor,' 'trying not to think about the stressor' and 'not letting the stressor get to you.'

The reason for such a predominance of thought control strategies was not readily apparent in the Gould et al. (1993a) study. The authors did, however, suggest that perhaps the majority of athletes experienced more cognitive, as opposed to somatic, stress and more often employed cognitively-based strategies. This explanation would also appear plausible for participants in the present study, as the stressors provided to participants in the interview were primarily psychosocial.

According to Frydenberg and Lewis (1991, 1993), the most consistent findings relating to adolescent coping behaviour are gender differences, where various strategies are reportedly used to a different extent by males and females. For example, researchers have suggested that females, more than males, use social support as a coping strategy (Spirito et al., 1988; Stark et al., 1989; Seiffge-Krenke & Shulman, 1990; Frydenberg & Lewis, 1991). The greater use of social support by females was not, however, supported in the present study. In fact, the coping strategy "talking to team-mates" was reported almost equally by both females and males (50% and 52.8%, respectively). However, these coping findings were generated from a non-sport sample (i.e., school students),
where time was not a limited factor in seeking social support (i.e., talking with others). It is possible, therefore, that the use of social support as a coping strategy in a time-limited situation, such as competitive field hockey, is considerably lessened as compared to non-sport settings in previous findings. Thus, any social support used in an open-skilled sport such as field hockey would, by necessity, be limited to reduced verbal communication during a brief pause in game time. Therefore, the lack of gender differences is not surprising due to the strong time-limiting factor in field hockey.

The results of the present study did, however, support the previous findings that females use more emotional regulation than males (Spirito et al., 1988). For example, females reported usage of the coping strategy ‘talking to self to calm down and feel better’ considerably more than males, 50% and 36.1%, respectively. The suggestion that males use more resignation and acceptance than females (Spirito et al., 1988) was also supported for the present sample. For example, males reported considerably greater usage of the coping strategy, ‘I accepted it as there was nothing I could do’ than females (88.9% and 50%, respectively). Further, the percentage frequency on the coping strategy ‘I went on as if nothing happened’ was greater for males (22.2%) than females (6.25%), although the difference was not as great as that reported for the ‘acceptance’ coping response.

The previous findings that females use more wishful thinking than males (Frydenberg & Lewis, 1991, 1993; Spirito et. al, 1988) was not supported in the present study. In fact, the opposite was found, with males reporting a considerably greater usage of the coping response, ‘I wished I could change what had happened or how I felt’ than females, 88.9% and 43.75%, respectively. However, this contradictory finding cannot be viewed as particular to children when, to date, no previous research exists in the child sport and coping area against which to compare this result. However, as Frydenberg and Lewis (1993) suggest, the findings relating to gender differences and wishful thinking are not definitive. That is, opposing findings in this area have emerged in the adolescent population. For example, in another study, Stark et al., (1989) reported that males used
more wishful thinking than females. Gender differences on the use of wishful thinking among similarly aged child athletes warrants further research confirmation.

The finding by Frydenberg and Lewis (1994) that the use of self-blame (characterised by criticism and self-lecturing) was relatively low in adolescents was supported for the child athletes in the present study. Indeed, the coping response, 'I criticised or lectured myself,' attracted no responses from females and only a small response from males (16.7%). According to Frydenberg and Lewis (1994), the relatively lesser use of such a strategy is a 'positive' finding, because although the strategy reflects an attempt to manage stress, it has a negative cost attached that is better avoided. The focus on self-blame may induce negative and detrimental cognitions that may subsequently contribute to a decrement in physical performance, thereby inhibiting successful coping.

Interestingly, females in the present study appeared to employ fewer coping strategies as compared to males, 129 and 330, respectively, and the frequency of those coping strategies utilised by females was also less than that reported for males. Reasons for this discrepancy are not readily explained from previous sport related coping literature. For example, Gould et al. (1993a) focused entirely on male wrestlers, while the Gould et al. (1993b) examined male and female national figure skaters without comparing gender. Further, no gender differences have been reported on the number and frequency of coping strategies employed by males and females in the adolescent literature. Further research is needed, therefore, to explore gender differences and the coping strategies employed in response to acute stressors in sport.

Adaptive and Maladaptive Coping

In the adult coping literature, Gould et al. (1993b) noted that the majority of coping responses reported by elite national champion skaters were adaptive (i.e., strategies that lead to a resolution of the problem with no detriment to performance),
although maladaptive coping responses (i.e., strategies that do not lead to a resolution of the problem and are potentially detrimental to performance) were also reported. Similarly, the participants in the present study reported a majority of adaptive coping response. For example, strategies such as ‘concentrating on what to do next,’ ‘trying to forget the stressor,’ ‘accepting the stressor,’ ‘talking to team-mates’ and ‘not letting it get to me and not thinking about it’ were all used frequently by participants in the present study. The use of maladaptive strategies in the present study, such as ‘criticising myself and lecturing myself,’ ‘refusing to believe it had happened,’ ‘day dreaming or imagining self in a better place’ and ‘wishing the situation was over’ were considerably low. However, as previously noted, the reported usage of the strategy ‘I wished I could change the situation’ was very high for both males and females in the present study. In the adolescent coping literature, Frydenberg and Lewis (1993) also noted that more girls than boys employed non-productive coping. For example, girls used more coping strategies such as worry, wishful thinking, and self-blame than boys did. These gender differences, however, were not supported in the present study. Instead, as previously noted, the males in this study reported greater use of these coping responses, as compared to females. However, gender differences in the use of maladaptive coping found in this study were not supported by previous research.

Quantitative Results

The first hypothesis predicting a high correlation between competitive trait anxiety and the proportion of negative appraisals made by child athletes was not supported. Child athletes scoring relatively higher on the SCAT-C did not report a greater number of negative appraisals as expected. Rather, higher scores on the SCAT-C were related to a lower proportion of negative appraisals. This was a seemingly incongruent outcome, since trait anxiety refers to a tendency to perceive competitive situations as threatening (Martens, 1977). Thus, individuals higher in trait anxiety were predicted to perceive
competition as more threatening, as reflected by a higher number of negative appraisals than individuals lower in trait anxiety. The relationship between relatively higher SCAT-C scores (i.e., trait anxiety) and the proportion of negative appraisals was further examined for gender differences. This relationship was low and contrary to expectations for both males and females, however, the link between competitive trait anxiety and proportion of negative appraisals was somewhat greater for females than males.

The present results do not support the findings of previous research (Brustad, 1988; Brustad & Weiss, 1987; Passer, 1983) that athletes higher in competitive trait anxiety report a greater frequency of performance related 'worries' (i.e., stressors about losing, making mistakes, not playing well) than athletes lower in competitive trait anxiety. Thus, athletes who were highly trait anxious did not appraise stressors as more threatening and harmful than athletes who were lower trait anxious. In summary, the findings of the present study seem inconsistent with Martens (1977) theory of competitive anxiety, which suggests that high trait anxious athletes perceive and/or appraise a wider range of situations as more dangerous or threatening than athletes who are low-trait anxious.

Possible explanations for the lack of high correlations in the present study include the finding that child athletes in the present study appeared not to have been a highly trait anxious group, as indicated by the mean trait anxiety scores. For example, only two participants from the present sample scored above 25, (25 and 26 respectively) from a possible total score of 30. According to Martens (1977) SCAT-C scores can be categorised into high, medium, and low groups. Martens suggested a score of '25-30' as high, '10-14' as low, and '15-24' as medium (p. 6). Consequently, compatible with Martens' (1977) definition of trait anxiety, the child athletes may not have perceived the competitive game environment as threatening. Further, as previously noted, the mean scores for male and female child athletes in Table 10, were lower when compared to the youth sport norms provided by Martens et al. (1990). This supports the notion of
relatively low competitive trait anxiety for individuals in the present study. It is
recognised, however, that this disparity may reflect a difference between the present sport
(i.e., field hockey) and the other sports on which the SCAT-C norms were based (e.g.,
baseball/ softball, basketball, soccer, tennis, wrestling), or cultural differences between
US norms and an Australian sample. Ommundsen and Vaglum (1991) note, the majority
of studies on CTA (e.g., Brustad, 1988; Brustad & Weiss, 1987; Passer, 1983; Scanlan &
Lewthwaite, 1986) are based on American samples, and may therefore be culturally
biased.

A final possible explanation for the low correlations between trait anxiety scores
and negative appraisals reported is that the cumulative method of scoring the SCAT-C
means that individuals who experience only a few anxiety symptoms frequently may be
under-represented in the ranks of the high trait anxious, while others who report a wider
variety of anxiety symptoms infrequently, may be over-represented in the high trait
anxious category (Lewthwaite, 1990). Further, the operationalisation of competitive trait
anxiety in the present study was based solely on Martens' (1977) uni-dimensional Sport
Competition Anxiety Test for children (SCAT-C). The present study included the
SCAT-C as the measure of trait anxiety, measuring somatic competitive trait anxiety, as
the SCAT-C contains primarily somatic anxiety items (Lewthwaite, 1990). However, it
has been suggested that competitive trait anxiety is a multidimensional phenomenon with
relatively independent somatic and cognitive components (Lewthwaite, 1990; Lewthwaiite
& Scanlan, 1989).

Currently, however, no other validated and published measure of a multi-
dimensional approach to competitive trait anxiety for children exists in the extant
literature, despite Lewthwaite's (1990) call for continued development of alternative CTA
measures to clarify the usefulness of the present conceptual framework. Further research
on the multidimensional nature of competitive trait anxiety is necessary, to confirm or
deny the relationships proposed in the present study.
The relationship between self-esteem and the proportion of negative appraisals of child athletes was also explored. It was anticipated that higher self-esteem would be related to a reduced proportion of negative appraisals, however, no such significant relationship was found. Thus, child athletes scoring relatively higher on the SEI-C (i.e., self-esteem) did not report fewer negative appraisals, as expected. However, gender differences did emerge. Specifically, it was found that the relationship between self-esteem and negative appraisals for males was significant, however, the direction was contrary to that proposed. Thus, males scoring relatively higher on the SEI-C also reported a greater proportion of negative appraisals. The nature of this relationship for females, however, was in the direction suggested. That is, females scoring relatively higher on the SEI-C also reported a lower proportion of negative appraisals, a relationship that neared significance (see Table 6). In addition, the strength of the relationship for females was considerably stronger than that observed for males (see Table 6). Explanations for these results are only speculative. Typically, individuals who have high self-esteem believe themselves to be capable and successful (Coopersmith, 1967). As such, they should perceive themselves as having the necessary personal resources to meet situational demands.

Another gender difference, as previously indicated in the results, was that females in the present study reported a greater mean self-esteem score than males (see Table 10). Coopersmith (1984), however, suggested that most researchers detected little difference between the means of the SEI total for males and females. However, both males and females in the present study reported higher mean self-esteem, by comparison to a similar SEI-C norm group (Donaldson, 1974).

Despite suggestions that historically, no aspect of personality has received greater theoretical and empirical attention than self-esteem (Smoll et al., 1993), only a limited number of studies of self-esteem in sport have been conducted (Weiss & Ebbeck, 1996). There is an apparent absence of any current sport related measure of self-esteem for
children. Self-esteem in sport, therefore, remains an area requiring additional research. The use of a non-sport specific measure of self-esteem in the present study, may have contributed to the lack of results in the present study, by capturing only general self-esteem and not self-esteem in a specific environment such as sport. However, as no sport specific self-esteem measures currently exist for children, the Coopersmith SEI-C for children was employed. This area of investigation will remain clouded until a sport specific measure of self-esteem is developed and applied to the current questions examined.

The second hypothesis in this study, predicting a high correlation between self-esteem and the proportion of positive appraisals was not supported. Child athletes scoring relatively higher on the SEI-C did not report a greater proportion of positive appraisals, as expected. Contrary to expectations, a significant relationship was identified with males scoring relatively higher on the SEI-C also reporting a lower proportion of positive appraisals.

Self-esteem refers to the extent to which an individual believes themself to be capable, and successful (Coopersmith, 1984). Thus, individuals higher in self-esteem should perceive themselves as having the necessary personal resources to meet the demands of the situation, whereas individuals lower in self-esteem, would perceive themselves to be inadequate in meeting the demands of the situation (Weiss & Ebbeck, 1996). According to Lazarus and Folkman (1984), challenge appraisals are characterised by positive emotions and focus on the potential for gain or the opportunity for growth and mastery inherent in a stressful situation. Athletes who appraise stressful situations positively (i.e., as a challenge) would be expected to report higher levels of self-esteem than athletes who do not appraise the situation as positive.

The relationship between trait anxiety and proportion of positive appraisals made by child athletes was also explored in this study. It was anticipated that higher trait anxiety would be related to a reduced proportion of positive appraisals, however, no
significant relationship was found. Indeed, higher scores on the SCAT-C were related to a higher proportion of positive appraisals for both males and females, contrary to that proposed. This was a seemingly incongruent outcome, since trait anxiety refers to a predisposition to perceive certain environments as threatening. As Gould (1993) notes, high trait anxious child athletes tend to perceive evaluative environments, such as competition, as threatening. However, this was not supported in the present study.

Possible explanations for the lack of significant correlations may be the multidimensional nature of competitive trait anxiety, and consequently, the use of a uni-dimensional measure such as the SCAT-C would fail to identify its multidimensional content. These results clearly highlight the need for further research in this area to clarify the relationship between self-esteem, and trait anxiety on the use of positive appraisals of male and female child athletes.

The final hypothesis examined in the present study was that the coping strategies used by child athletes in response to stressors categorised as approach and avoidance would be related to their appraisal (positive/negative) of a particular stressor. Again, this hypothesis was not supported. The athletes’ coping strategy was not associated with appraisal type. However, the direction of the relationships between coping style and appraisal type was as expected. For example, an inverse relationship was expected between approach coping and negative appraisals, and avoidance coping and positive appraisals. That is the increased use of negative appraisals was associated with the decreased use of approach coping, while the increased use of positive appraisals was associated with the decreased use of avoidance coping.

Smith (1986) has suggested that the failure to cope constructively with the acute stress associated with sport competition can lead to ineffective cognitive processing, energy reduction, performance decrements, and other debilitating outcomes. Thus, given the inherent and common nature of stress in youth sport, it is apparent that teaching children proper stress management skills might reduce the drop-out rate of children in
sport and promote participant satisfaction in youth sport. However, to date, there has been a paucity of previous research examining the effectiveness of coping with acute stress in youth sport. Therefore, a second study was conducted to examine the effectiveness of a stress management intervention with children of a similar age range to those in study 1.
The purpose of study 2 was to examine the effectiveness of a stress management training program in reducing the deleterious effects of acute stress experienced by competitive junior hockey players.

**Participants**

The participants were 14 volunteer athletes (7 males and 7 females) aged 10-12 yrs. These athletes competed in field hockey for a local club in the Illawarra region of New South Wales (Australia), and were members of the NSW Junior Hockey Association. The control group included 4 male and 3 female athletes and the experimental group 3 male and 4 female athletes, respectively. The mean age and game experience were 11.05 yrs and 2.43 yrs for control athletes, and 11.04 yrs and 2.57 yrs for experimental athletes. The level of competitive experience was local club level for most participants. Only one athlete had competed at the regional level.

**Measures**

**The Questionnaire - Development and Use**

A questionnaire was designed for this study and administered to participants in the pre- and post data collection sessions. The questionnaire examined the ratings of perceived positive and negative affect, perceived intensity and frequency, cognitive appraisals, ratings of perceived controllability and the use and efficacy of predetermined coping strategies following the game related stressors, missing an easy shot and receiving a bad call from the umpire (see Appendix D). There were no previously published instruments that incorporated these elements in regard to child athletes and acute stress in sport. Questionnaire development, therefore, consisted of adapting items from research on acute stress and coping in adults (e.g., Wells, 1995; Hoedaya, 1996). Questionnaire items were also generated with the assistance of academic and practice experts, who
examined the wording, layout and general features of the questionnaire for its applicability to children aged 10-12 yrs.

**Situational Variables Examined**

*Positive and Negative Affect.* Participants affective responses were assessed using the Stress Arousal Adjective Checklist (SACL) (Mackay, Cox, Burrows, & Lazzerini, 1978) a self-reported measure of stress and arousal. Research has established that the stress part of this scale is a valid measure which appears to indicate the presence of doubts or fears about one's ability to cope with stress (King, Burrows, & Stanley, 1983; Mackay et al., 1978).

This SACL was developed for adults, however, as no similar validated measure has been reported for children the current measure was used and adapted where necessary. To this end, the researcher and an academic expert changed the wording of some SACL items to be more easily comprehensible to children aged 10-12 yrs. Participants were also provided with a brief description of each adjective when completing the SACL.

The SACL was administered before and after the stress management training program to gauge changes in participants overall levels of stress. The athletes were instructed to complete the checklist based on how they usually feel following their experience of the two acute game-related stressors: (1) after missing a very easy shot, and (2) after receiving a bad call from the umpire. These stressors were selected because all participants had reported experiencing these during hockey games in pilot testing, and they were likely to experience them again during the course of the training program. Importantly, they also represented a source of stress that was controllable and uncontrollable by the individual.

The checklist included an 8-item positive affect sub-scale, and an 8-item negative affect scale. Examples of positive affect items included "relaxed," "cheerful," "happy" and "peaceful," while "unhappy," "tense," "worried," and "nervous" were examples of
negative affect items. Using a 5-point Likert scale (1 = not at all, 2 = a little bit, 3 = moderately, 4 = quite a lot, 5 = very much), participants described how they felt about each adjective following their experience of both stressors. This scoring varied slightly from the 4 point scoring advocated by the SACL (== definitely yes, = slightly agree, ? = not sure or don’t understand, - = definitely not). However, it was felt that this 4 point scale did not provide an equal positive and negative response opportunity for the present sample.

Intensity and Frequency. Participants rated how intensely (‘how much does it usually stress you’) and how frequently (‘how often does it usually stress you’) they usually experienced the stressors, on a 5-point Likert scale (See Appendix D. Part A: items 2, 3 and Part B: items 2, 3).

Primary Appraisal. Participants indicated their cognitive appraisal of each stressor by rating how positive (i.e., challenge appraisals) and negative (i.e., threat appraisals) they felt after experiencing each stressor using a 5-point Likert scale (1 = not at all, 5 = very much). Several emotions were employed to describe these appraisals. The items ‘pumped up,’ ‘confident,’ and ‘ready’ were intended to reflect positive appraisals, while the items ‘worried,’ ‘disappointed,’ and ‘anxious were used as indicators of negative appraisals. These terms were identical to those used in other studies (Carver & Scheier, 1994; Folkman & Lazarus, 1985; Larsson et al., 1988) (See Appendix D, Items 4 and 5, respectively).

Secondary Appraisal. Participants indicated on a 5-point the extent to which they felt they were able to do something about the stressor to reduce their stressful feelings and get on with the game (i.e., appraisal of perceived controllability) (see Appendix D, Part A: item 6, and Part B: item 6).
Coping Responses. Participants identified from a pre-determined list of 26 coping items the coping responses they usually employ immediately following both stressors. The pre-determined coping strategies were included to assist in participants recall and also provide a uniformity of responses. Examples included 'I thought about what I would do next,' 'I tried to forget the whole thing' and 'I talked to my team-mates.' These coping responses were based on the Adolescent Coping Checklist (ACC- Frydenberg, 1990), the Ways of Coping Checklist (WOCC - Lazarus & Folkman, 1988), and the Ways of Coping With Sport (WoCS - Crocker, 1989b) (see Appendix D).

Perceived Coping Efficacy. The perceived effectiveness of the coping strategies employed by participants was also examined using a 5-point scale (Aldwin & Revenson, 1987). Participants rated how much the coping strategies employed had helped them to reduce the stress and get on with the game (positive efficacy) and how much the strategies employed had interrupted their game and caused them difficulties in concentration (negative efficacy) (see Appendix D, Part A, items 8, 9: Part B: items 8, 9).

Pilot Questionnaires

The intensity and frequency of eight acute game-related stressors that athletes may encounter whilst playing hockey were examined prior to developing the questionnaire. Participants were provided with a pre-determined list of 8 sources of acute, game-related stress. All items in this section had been identified as sources of acute stress in previous research (Anshel, 1990; Anshel et al.,1993) and confirmed in study 1 of this research. This procedure identified two commonly experienced sources of acute game related stress on which the stress management program would be based.

Prior to the initiation of this investigation, the questionnaire (presented at pre-and post-treatment) was tested on 3 athletes aged 10-12 yrs who played competitive sport. The purpose of this exercise was to gain information about the clarity and ease of
comprehension of instructions, phrasing of items, and the child's general understanding of what was being asked of them. The researcher used this feedback and critical appraisal by other experts to evaluate and revise the questionnaire to ensure clarity and comprehensiveness. Consequently, several changes were made to a number of items. The phrasing of a couple of coping items was reworded following comments made by the children. The brief explanations of the adjectives in the SACL were included following questions as to their meaning by children in the testing of the questionnaire. The individuals involved in the pilot testing of the questionnaire found the explanation of these adjectives easier to comprehend.

Procedure

The coaches for both teams were contacted, and provided information on the training program and permission was obtained to approach the teams at training. The researcher met with the athletes prior to a team training session and invited them to participate in the program. Athletes choosing to participate were provided with a consent form (see Appendix C) and permission was also obtained to contact their parent(s)/guardians to familiarise them with the program and gain support for the involvement of their son/daughter. Through the consent forms and verbal conversation, it was emphasised to both athletes and their parents that participation was voluntary, all information would be kept confidential, and the athletes were able to withdraw from the study at any time without penalty.

None of the participants had previous experience with a program on stress management and coping (as indicated by their parents). Prior to the commencement of the training program all participants were involved in a pre-intervention data collection. The data collection and intervention sessions were both conducted during the competitive season. This allowed participants an opportunity to experience a variety of acute stressors over numerous games, following a long off-season period. The evaluation of the effects
of an intervention are most significant when the evaluation occurs following exposure to real stressors (Auerbach, 1989).

Prior to completing the questionnaire an overview of the nature of the investigation and the questionnaire content was provided. This included the duration of the program, and the purpose of homework exercises. In an effort to encourage honest responses, participants were again informed that information gathered was confidential and reminded there were no wrong answers and only what they ‘thought and felt’ was important. General background information including, sex, age, years playing hockey and highest level played in hockey was also elicited. Stress was defined for each participant as ‘those times during the game when you were really upset, worried, and annoyed by nasty and unpleasant things that happen during the game.’ Based on the general information obtained in the pre-treatment questionnaire participants were matched for gender, age, performance experience, and years of play and randomly assigned to the control or experimental group.

The intervention program consisted of 30 - 40 minute sessions in a group setting over seven weeks. Participants in the experimental treatment group received stress management training consistent with the 2 acute stressors they experienced regularly and with great intensity (i.e., very stressful), while the placebo-control group were exposed to sport psychology presentations containing material considered unrelated to stress reduction.

The two treatment groups ran simultaneously. Consequently, the author presented the program for the experimental group, and the control group program was presented by an assistant with experience in sport psychology. However, all material presented to the control participants was developed by the researcher. At the end of each session, experimental participants were also given homework assignments and training diaries designed to facilitate rehearsal of the coping skills and adherence to the program. Control participants were also given homework assignments. This homework was reviewed at the
beginning of following sessions to monitor progress and check whether participants were experiencing any difficulties, and allow time for any questions.

Finally, an arrangement was made that where participants were unable to attend a training session (e.g., due to ill health) the researcher would contact them by phone and review the information in the session they had missed with them. The weekly material provided for participants training folder were mailed to individuals, and used as a resource to assist in this process. This allowed participants an opportunity to complete any homework and practice new skills over the week. Consequently, all participants did not miss any of the material covered in each session. Finally, manipulation checks were carried out at the conclusion of the program to assess the effectiveness of particular stress management strategies.

**Treatments**

**Experimental Groups**

The content of the stress management program provided to the experimental groups was modelled on DeWolfe and Saunders (1992) school based stress management program for children aged 10-12, and components of Anshel’s (1990) COPE model for acute stress situations. Aspects of Meichenbaum’s (1985) Stress Inoculation Training and Smith’s (1980) Cognitive-Affective Stress Management Training were also included. Similar to Meichenbaum’s (1985) model, the current program was presented in three overlapping phases: (a) an educational/conceptualisation phase during which the transactional model of stress was introduced, providing a rationale for the coping skills presented, (b) a coping skills acquisition phase where cognitive and behavioural coping techniques were outlined, and (c) an application phase where the coping techniques were applied. The outcome of the training program for experimental participants was the development of a ‘Final Coping Routine,’ an integrated coping response which players could implement following acute game-related stressors to control emotional arousal and
minimise deterioration of performance.

Self-talk represented the key component of this intervention for experimental group. The three self-talk statements suggested for stressors within personal control (i.e., approach situations) included (a) task-relevant statements describing technical or tactical aspects of performance the athlete should have employed, (b) alternative strategy statements describing play options which may have been more appropriate, and (c) positive self-statements to maintain the effort of application (Rushall, 1989). The self-talk statements identified for stressors not within the personal control of the individual (i.e., avoidance situations) included (a) reappraisal statements where the aversive situation is considered in another light (Lazarus & Folkman, 1984), (b) parking statements involving decisions to forget or ignore the situations (Orlick, 1986), and (c) discounting statements, where the importance of the stressor is reduced (Anshel et al., 1994) (see Workshop 6 in Appendix G for examples). Appendix G contains all handouts and training diary sheets distributed to experimental participants during the program. Figure 2 outlines the course of the stress management program presented to the experimental group.

Figure: 3 Outline of Experimental Group Intervention Program

<table>
<thead>
<tr>
<th>Activity</th>
<th>Content</th>
<th>Phase</th>
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<tr>
<td>Session 1:</td>
<td>* Information on stress</td>
<td>Conceptualisation</td>
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<td></td>
<td>* Awareness of the cognitive, physiological, affective and behavioural components of stress and the negative impact it has on performance</td>
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<tr>
<td>Session 2:</td>
<td>* Identifying personal responses to the components of stress (cognitive, physiological, affective, and behavioural) following 2 acute stressors</td>
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<tr>
<td>Session 3:</td>
<td>* Self talk</td>
<td>Skills Acquisition</td>
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<td></td>
<td>* Identifying negative self-talk and its impact on the components of stress</td>
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<tr>
<td>Session 4:</td>
<td>* Techniques for managing negative self talk</td>
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<tr>
<td></td>
<td>* Relaxation (deep breathing)</td>
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<tr>
<td></td>
<td>* Practice deep breathing</td>
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</table>
Session One: Following introductions, a discussion followed on 'what is stress' and the consequences of too much stress (Crocker, 1989b; DeWolfe & Saunders, 1992; Kerr & Goss, 1996; Taylor, 1992). Stress was defined for participants as the feelings that result when something happens during a game of hockey to really upset, annoy or worry you, and you see this as a burden or problem. The objective was to help participants understand the nature of stress and its deleterious effects on performance.

While an in depth understanding of the transactional model was perhaps beyond the capacity of individuals aged 10-12 yrs, it was felt that participants were capable of identifying the components in that model. Thus, similar to Smith's (1980) approach, players were asked questions about their individual stress response to help them arrive at the transactional model of stress on their own. Questions directed at the circumstances around the stressful incident, what you thought, why you were thinking that way, what happened in your body, what you felt, and what you did, elicited the situational, cognitive, physiological, affective and behavioural components of the model.

The role of cognitions in causing, maintaining and reducing stress was then explained to participants. Using an example the instructor demonstrated how cognitive appraisal of a situation, as positive or negative, could result in two different responses to the same situation. Thus, the situation itself is not the cause of the stress reaction, but rather the individual's cognitive appraisal of the situation as positive or negative.
Prior to completing the session, the instructor quizzed the group on the information covered. When asked to explain how two different responses could result from a single situation (i.e., positive and negative), participants unanimously stated that the difference in each response was what they were thinking. The question of “who tells you what to think” was also asked of participants and a unanimous response “I do” was reported by all. In doing so, the athletes correctly identified the cognitive aspect of the transactional model as the key aspect to address in a stress management program.

When presented to participants, the stress management-training program was labelled Mental Toughness Training. The aim of this training was not to remove all possible stress. Indeed, this was acknowledged as impossibility. Rather, the aim of the training was to teach participants how to respond differently to game situations so they did not appraise the incidents as stressful and suffer a deterioration in performance.

In summary, participants were encouraged to recognise that they have control of their appraisal of situations and consequently they are capable of changing their response to stressors. Participants were also reminded that regular rehearsal of these new skills was essential to develop the skills taught in the mental toughness training.

Session 2: Session two began with a review of the nature of stress and the deleterious effect it can have on performance. The components of stress as identified in the transactional model were revised and explored in response to two game-related stressors, missing a very easy shot and receiving a bad call from the umpire. Participants were asked to identify and record their individual cognitive, physiological, affective and behavioural stress responses to these stressors (DeWolfe & Saunders, 1992; Taylor, 1992).

Initially, participants were encouraged to identify this information independently by referring to previous session information in their weekly training folder. Discussion then followed on the components of stress identified for each stressor, with examples
shared by the group. Where necessary, participants were redirected to the information and examples provided in session 1 to more clearly define each component. Again, participants identified cognitive appraisal as the key component in the transactional model, because the physiological, affective and behavioural responses are determined by the cognitive interpretation of the situation.

For homework the athletes were asked to monitor on a daily basis, their cognitive, physiological, affective, and behavioural responses to stress experienced. This exercise was designed to assist participants to become increasingly aware and proficient in identifying their personal indicators of stress.

**Session 3:** The third session began with a review and discussion of the homework exercise. Next, participants were introduced to the concept of negative thoughts and negative self-talk. Using examples, the instructor lead participants to explore their cognitive, physiological, affective and behavioural responses following a negative and positive situation in a game of hockey. The components of the stress response for these game situations were then categorised as positive or negative by participants.

This exercise demonstrated that when cognition's are negative the physiological, affective and behavioural response are negative, and similarly when the cognition's are positive, the associated physiological, affective and behavioural responses are positive. Further, when self-talk is negative, disrupted concentration and reduced athletic performance may result. The introduction of the topic in this manner encouraged participants to arrive at these conclusions independently and identify through personal reflection the consequences of negative thoughts. In summary, this exercise clearly demonstrated how performance is critically determined by the way the athlete thinks or says something about themselves, and that thoughts have a powerful influence on feelings and actions (Bunker & William's, 1986).
Five categories of negative thinking were introduced to participants, with examples for each provided in relation to field hockey. These included (a) continually worrying about a past performance, (b) inability to make a decision because the athlete keeps considering past alternatives, (c) becoming preoccupied with the physical symptoms associated with stress, (d) thinking about the possible consequences of performing poorly, and (e) thoughts of inadequacy (Martens et al., 1990).

However, before an athlete can gain control of their self-talk, they must become aware of what is being said. The technique used in the present study to identify negative self-talk responsible for triggering the stress response was maintaining a player self-talk diary. Thus, for homework, participants were asked to identify and record the associated self-talk, affective and behavioural responses for stressful situations experienced.

Sessions one through three focused on teaching participants to recognise and identify personal cognitive, physiological, affective, and behavioural components of stress and their role in the development of the stress response. Indeed, this knowledge was essential for participants to identify those components of the stress model, which could be changed through a mental skills training program. It was also important for participants to understand the rational for the use of the techniques (a) stopping negative thoughts, (b) relaxation training to reduce the players physiological arousal levels, (deep breathing), and (c) self-instructional training to allow the construction of specific self-statements designed to enhance the players attentional and task-oriented abilities that would be taught in Phase 2 (Skills acquisition Phase).

Session 4: The session began with a review of players homework. Participants were invited to share examples, and any difficulties experienced with the homework were discussed. The transactional model of stress, was briefly reviewed and the key component of cognitive appraisal in that model was again identified. Negative self-talk was reviewed, and it was noted how such self-talk can result in disrupted concentration
and reduced athletic performance.

Players were reminded that they could now identify when they experienced negative thoughts/ self-talk and the content of those negative thoughts. Consequently, the technique of ‘Thought Stopping’ to reduce, stop or eliminate negative self-talk was introduced. Thought stoppage involves concentrating on the undesired thought briefly and then using a cue or “trigger” to interrupt or stop the negative thought (Meyers & Schleser, 1980). Examples of these ‘triggers’ included saying the word “stop,” visualising a red flag or a red stop sign, or tapping your hand against your thigh (Wells, 1995). Participants then decided upon their own trigger or cue to interrupt or stop negative thoughts. The instructor advised that an effective method to practice this technique involved combining it with relaxation.

The technique of applied relaxation, a skill which permits speedy implementation in time-limited acute stress situations was then introduced. The benefits of learning a relaxation skill and how it can help in hockey were explored, and the importance of practicing the skill was also noted. To be able to use this technique effectively, a series of relaxation exercises over the coming session were planned. The objective was to shorten the time needed to achieve relaxation, thereby making the skill more portable.

Prior to undertaking the relaxation exercise where a calmer physiological state would be experienced, participants were instructed to run for 2 minutes at medium/high intensity so they could experience and discriminate between the symptoms associated with a heightened physiological state (e.g., pounding heart, rapid breathing) (Goyen, 1995). Training in relaxation was introduced using a variant of Jacobson’s (1929) progressive relaxation. The purpose of this technique was to allow the participants to recognise and discriminate between the symptoms associated with an aroused state by contrasting tension of selected muscle groups and relaxation of those same muscle groups.
Participants undertook this exercise in a prone position, and the skill of deep breathing was then introduced. Players were lead though a relaxation session using deep breathing. Following Smith's guidelines to facilitate relaxation, participants repeatedly thought the mental command "relax" during exhalation. Players were made aware that the continued pairing of the relaxation command with relaxation effects (deep breathing) would become a cue or trigger for eliciting relaxation, in the same way as they identified a trigger to stop and eliminate negative thoughts.

The instructor then briefly reviewed the session with reference to the skills learnt to date. The expectations of the group for the next session by the next session were as follows: they would be more aware of when they were experiencing negative thoughts and able to identify the associated stress indicators, they would be able to identify the state of relaxation and be able to induce a state of relaxation using the deep breathing and the command relax.

For homework participants were asked to monitor their negative thoughts and implement their trigger for thought stopping. They were also asked to practice the deep breathing (centering) relaxation skill daily. To facilitate this task, participants were presented with coloured adhesive dots to stick to prominent everyday objects within their home environment. Participants were instructed that whenever they observed the dot they were to say the trigger word "relax" and practice the centering technique. The players were also encourage to employ this skill where the opportunity arose during field hockey games.

Week 5: The session began with a discussion of the thought stopping and relaxation homework exercises. Participants were invited to share with the group any difficulties they had experienced practicing the exercise. The concept of imagery, defined as an activity that involves using all the senses, emotions, and feelings to recreate to create an experience in your head, was then introduced. A discussion followed on the mechanics,
uses, and benefits of imagery.

The uses of imagery outlined to the group included: (a) controlling physiological and emotional responses, and (b) practicing or learning physical skills, psychological skills, and perceptual skills. Both of these uses were of great importance in the present intervention program. A detailed discussion then followed on the characteristics of effective imagery.

The instructor then lead participants through a series of guided imagery exercises, preceded by a deep breathing exercise. All of the exercises are detailed in Appendix G. Following the exercise, participants shared their experiences and again answered questions on the effectiveness of their imagery skills. Participants were reminded that imagery works best when preceded by a relaxation exercise and this skill required regular practice to develop. For homework, participants were asked to practice their imagery skills and passive relaxation using the exercises outlined.

Week 6: The instructor began by reviewing the imagery homework exercises and discussing any difficulties the group had experienced practicing the exercise. The topic of negative self-talk (negative thoughts) was briefly reviewed including identifying, stopping and the consequence of negative thoughts. Self-instructional training and the development of self-statements that would be emitted in response to the acute stressors were then introduced (Meichenbaum, 1985). This involved constructing a list of all the negative self talk issued by players in response to the two acute stress situations before substituting these negative (dysfunctional) thoughts with short and precise positive self-statements (constructive thoughts) (e.g., I am relaxed, I am a good player, I am able to pass this ball) (Hoedaya, 1996).

The issues of personal control and responsibility were discussed in relation to planning a response to acute stressors and determining the appropriate strategies to manage these situations. Participants were informed that when you take responsibility for
something in your own performance you are less likely to experience stress from things outside your control (e.g. bad call from the umpire) (Anshel, 1990). Indeed, participants were reminded that “when a situation is out of your control it is better to forget about it as there is usually nothing that can be done about it” (Goyen, 1995, p. 123). Athletes were instructed that when they were responsible for the stressor it was important for them to (1) take responsibility for it, (2) take control of the situation and learn from it, and then (3) move onto the next event.

Roth and Cohen (1986) suggested avoidance oriented strategies are more appropriate in situations where the stressor is uncontrollable (e.g., getting a bad call from the umpire), and approach strategies are more appropriate where the stressor is controllable (e.g., after missing a very easy shot). Thus, participants were taught both avoidance and approach oriented self-statements.

The three approach oriented self statements included task-relevant statements, alternative strategies statements, and positive statements (Rushall, 1989). An exercise followed where the group, lead by the instructor, generated two task oriented statements for these categories in response to the stressors, missing an easy shot and receiving a bad call from the umpire. These statements were then shortened to one or two key words. For example the task oriented statement “Next time I’ll keep my eye on the ball,” was abbreviated to the key words of “eyes on the ball.” The three avoidance oriented self statements included reappraisal statements, parking statements, and discounting statements. A similar process was followed to arrive at the key words relevant for these avoidance statements in response to both stressors.

To demonstrate how these statements should be used when responding to stress, a guided imagery exercise combining thought stoppage, self-talk and imagery rehearsal for the two acute stress situations followed. To this end, participants were directed to generate negative self talk, experience feelings of stress, use their trigger word to stop the stress process, and then imagine their tension being replaced by relaxation after saying the
appropriate self talk statement while doing their deep breathing. Smith’s (1980) induced affect technique was employed to elicit a strong affective response in participants.

For homework players were asked to practice positive self-talk using relaxation. To facilitate this task, participants were presented with a different colour adhesive dot to stick to prominent everyday objects within their home environment. Participants were instructed that whenever they observed the dot they were to say the trigger word “relax” and practice the relaxation technique.

The sixth session was concluded with the instructor outlining their progress towards developing a Final Coping Routine. To date, participants had learnt to identify the cognitive, physiological, affective and behavioural components of stress and the skills of thought stopping, relaxation, imagery and self-instructional training had been taught. Consequently, the concluding session would be devoted to the development of a final coping routine.

Session 7: The final session began with a review of content of previous sessions. Players had learnt to be more aware and identify the components of stress and negative self-talk. The skills of stopping negative self talk, using deep breathing to promote a relaxation response, imagery, and positive thinking (self-instructional statements) had been covered. Players were again reminded that all the skills learnt in this program required practice to gain proficiency. The issue of responsibility and personal control over stressors were again raised in this session. Participants were reminded that taking responsibility for their own performance was an important part of learning to cope (Anshel, 1990). Similar to Anshel’s (1990) P Plan response stage in the COPE model participants were also reminded about the importance of directing their thinking towards their game immediately following the employment of the coping strategy. Participants were reminded that while these skills were learnt separately they were most effective when incorporated into an integrated coping response.
The final coping routine was introduced to participants using the acronym ‘STACC.’ This was developed by the instructor to assist the participants memory of the sequence in the coping routine. This included: S stop negative thoughts, T take a deep breath, A and, C change my thoughts to something more positive, and C concentrate on what I need to do next.

The remainder of the session was devoted to rehearsing the final coping routine. In accordance with Smiths (1980) cognitive affective stress management training program, the somatic relaxation and cognitive self-talk responses were combined into an integrated coping response. This coping routine was designed to reduce the impact of negative (affect eliciting) self statements, control arousal (though deep breathing), and facilitate the use of positive task relevant self statements in response to acute stress situations. Guided imagery was then used to practice the coping techniques.

Specifically the group was directed to imagine the acute stressor, identify negative self talk experience heightened levels of arousal, use their trigger word/ image to interrupt the stress process, use their deep breathing to relax and emit an appropriate self talk statement (positive) during inhalation, feeling tension draining away during exhalation (Weinberg, 1988). The session ended with the instructor thanking the players for participating in the program. The participants then completed the program evaluation forms (manipulation checks).

**Figure: 4** Outline of Control Group Intervention Program

<table>
<thead>
<tr>
<th>Activity</th>
<th>Content</th>
</tr>
</thead>
</table>
| Session 1: | * Introduction to goal-setting  
* Characteristics of effective goal-setting |
| Session 2: | * Developing personal goal |
| Session 3: | * Reviewing goal-setting progress  
* Developing further goals |
| Session 4: | * Educational videos on field hockey (ball skills) |
Control Group

As with the experimental group, the control group met for a 30-40 minute weekly session over a 7-week period. In order to encourage participant adherence it was necessary to present sport psychology information during these sessions (i.e., subjects benefited in their participation in the study - learning mental skills for sport). However, the information presented to the placebo-control group was not directly relevant to anxiety/stress reduction (e.g., goal setting, pre-competition routines)(see Appendix H for materials presented to the control group). Figure 3 outlines the course of the program presented to the placebo-control group.

Session 1: Following introductions, the topic of goal-setting was introduced. The fundamentals of goal setting (Gould, 1986) were reviewed including the purpose, guidelines for setting goals and common problems experienced when setting goals (see Appendix H for the goal-setting information). In particular, emphasis was placed on setting realistic, specific, challenging, performance oriented goals. The importance of recording goals on paper in specific behavioural terms was also noted. Selecting an example from the group the instructor illustrated these concepts and outlined the goal setting process. For homework participants were asked to identify some goals for hockey that would be outlined in future meetings.

Session 2: A brief review of the goal setting principles outlined in session one was conducted. Participants then recorded 5 strengths and 5 weaknesses in the way they played field hockey. This exercise identified the areas of weakness or aspects of the game players wanted to develop and, consequently, set goals for (Gauron, 1986). These items
represented tasks in field hockey, which the athlete wished to improve. These tasks were then prioritised with the athletes ranking those tasks they wished to improve first with lower numbers. Finally, the highest priority tasks were transferred to the goal setting worksheet where specific goals were identified, strategies developed, target dates decided upon, and goal evaluation procedures specified. The goal-setting sheet was signed by players in an effort to encourage ownership of the goal-setting process, and witnessed by another person to encourage the athlete to remain true to the goals outlined. To conclude the session, the group members critiqued each other's goals with respect to the goal setting principles.

Session 3: To begin the session the players reviewed their weekly goal-setting progress. Participants were invited to share with the group their experiences of implementing their goal, and any difficulties experienced. The instructor encouraged participants to outline another short-term weekly goal from their list, and this was transferred to the goal setting worksheet where specific strategies developed, target dates decided upon, and goal evaluation procedures specified. Again, the goal-setting sheet was signed by players and witnessed by another person to encourage the athlete to remain true to the goals outlined. To conclude the session, the group members critiqued each other's goals with respect to the goal setting principles.

Sessions 4 and 5: These sessions involved viewing an Australian Institute of Sport field hockey team skills video. The video included the basic skills of passing and receiving the ball and set plays.

Session 6: The instructor introduced the topic of competitive routines. This included defining a routine, the benefits of a routine, and the mechanics of establishing a routine. Examples were provided of possible routines that may exist the week before, the day before and immediately prior to the game. Players were then supported to identify the
aspects of their personal routine the week before the competition, the day of the competition, and when they arrive before the competition. These individual routines were discussed with the group and the merits of the actions included in these routines were critiqued. Before the session ended, the goal setting progress was again reviewed and another short one-week goal was developed.

Session 7: The final session began with a review of content of previous sessions. Players had learned to identify areas of their game they wanted to improve and develop, how to plan for a short and medium term goal, and how to review and evaluate goal-setting progress. The goal setting performances of previous weeks were reviewed and evaluated. The benefit and fundamentals of developing a pre-competition routine were also reviewed. Players were encouraged to continue using the skills learnt in the program and reminded that all the skills learnt required practice develop proficiency. The session ended with the instructor thanking the players for participating in the program. The participants then completed the program evaluation forms (manipulation checks).

Post Intervention Data Collection

The declaring of Wollongong a natural disaster area due to flooding meant there was an unavoidable break in the program between the fifth and sixth sessions. Further, the wet conditions and water damage resulted in the playing season finishing early, before the program had completed. This meant that experimental participants had not yet been taught the complete sequence of skills nor shown how to combine them into an integrated coping response and practice their application in a real game situation. Since the stress management program was designed to teach an integrated coping routine in response to real game stressors that participants could practice during the season, this aim was not possible when the season finished early because of the aforementioned weather conditions.
Consequently, the post data collection occurred following session 5, before participants had finished the complete program. Despite the ended season, the remaining sessions in the program continued following the post testing, to provide participants with the opportunity to put all the skills together into a meaningful package. The information covered in final weeks of the program was assessed in a post-intervention knowledge and intention questionnaire. But as previously stated these were not included in the post data.

Post Intervention Knowledge Test Questionnaire

Following the completion of the program, separate knowledge questionnaires (i.e., tests) were completed by both experimental and control groups (see Appendix E and F for Post Intervention Questionnaire, for Experimental and Control groups respectively). These questionnaires were included to (a) examine any changes in the coping strategies employed by both experimental and placebo groups between pre and post testing, (b) explore the utilisation of coping strategies taught, (c) examine the effectiveness of the coping strategies employed in reducing stress intensity, and (d) examine whether the sport psychology sessions given to the placebo group had any effect on the experience of acute stress during games, within the five weeks between the pre- and post data collection.
Analyses Overview

All variables were checked for significant skewness and kurtosis. In any cases where significant skewness or kurtosis were observed distribution-free (non-parametric) analyses were undertaken. In no case, did the non-parametric analyses yield different conclusions from the parametric analyses. Thus, for simplicity of interpretation only parametric results will be reported.

Factor analysis was considered as an option to further describe and summarise the data however, because of the small sample size this analysis was not undertaken. This decision is supported by researchers who suggest that a sample size of 50 is very poor for factor analysis (Comrey & Lee, 1992). Tabachnick and Fidell (1996) also recommend at least 300 cases for factor analysis as a rule of thumb.

Results are presented in four sections. Section one examines the differences between treatment groups on global measures of the competition experience. These included participants ratings of the level of effort, fun, enjoyment, participation, desire to keep playing, pride in their play, performance level and satisfaction with their play; and ratings of how annoyed, guilty, embarrassed, angry and unhappy participants were following the experience of both stressors. Separate analysis of variance (ANOVAS) were computed to examine the extent of change in each variable following the intervention. Section two examines the differences between treatment groups on the dependent variables for the stressors missing an easy shot and receiving a bad call from the umpire. The dependent variables (i.e., affect, appraisal, perceived control and efficacy) were not combined, and separate analysis of variance (ANOVAS) were computed to examine the extent of change in each dependent variable following the intervention. Section three examines pre- and post- coping responses in response to the two stressors, for the frequency and type of coping strategy employed. Data in sections 1 through 3 were analyzed by a 2 x 2 (Group x Time) analyses of variance. Section four
examines participants responses to a post-intervention test administered following the training program exploring knowledge of the strategies learnt, future intentions to use the strategies, ratings of the training program and other information.

In the present study, a number of tests were conducted and there was no correction made for type 1 error. Because the present research was exploratory, it was decided to leave the alpha at the conventional .05 level and risk making a type 1 error rather than risk missing a genuine effect. It is acknowledged, however, that results must be interpreted with caution until they are replicated.

Section 1

It was proposed that improvement in the ability to cope with the deleterious effects of acute stress would influence global measures of the competitive experience for athletes. Specifically, it was predicted that the experimental group compared to the control group would report an increased level of effort, fun, enjoyment, participation, desire to keep playing, pride in their play, performance level and satisfaction with their play. These variables were assessed by a 2 x 2 (Group x Time) analyses of variance, with the last factor being a repeated measure. Because of the small sample size preventing factor analyses and uncertainty about how the variables should be combined, all variables were examined separately to assess the size and significance of any effects.

The means and standard of these competition related measures at pre- and post-treatment are shown in Tables 11 and 12. Results indicated a significant group by time effect for the level of fun experienced by child athletes when playing hockey, $F(1, 12) = 4.84, p = .05$. Inspection of the group means (see Table 11) showed that experimental participants reported an increased mean level of fun over time, as compared to a decreased mean level of fun for control participants. A significant group by time effect was also reported for the level of pride in the way participant’s played, $F(1, 12) = 4.61, p = .05$. The group means showed that experimental participants reported
an increased mean level of pride in how they played following the intervention, as compared to a decreased mean level of pride in play for athletes in the control group.

Although changes in participants level of enjoyment and playing their best were small and not statistically significant, all $p$'s $> .1$, they showed trends in the appropriate direction. The group means (see Tables 11 and 12) showed that experimental athletes increased their mean level of enjoyment and performance in hockey games following the training program, as compared to decreased mean scores on these variables for control athletes. The remaining ANOVA's did not reveal any significant effects, all $p$'s $>.10$. The mean scores for level of effort and desire to continue playing (as compared to teammates) also increased for experimental participants, however these increases were also observed for control participants. Finally, the decreases observed on mean scores for the remaining variables were reported for both experimental and control groups.

Further to the hypotheses that improvements in the ability to cope with the deleterious effects of acute stress would influence other competition related variables, participants ratings of how annoyed, guilty, embarrassed, angry and unhappy they felt following their experience of the 2 stressors were examined. Specifically, it was predicted that the experimental group compared to the control group, would report decreased ratings of how annoyed, guilty, embarrassed, angry and unhappy they felt following both stressors. Data for these variables were analysed by a series of $2 \times 2$ (group x time) analysis of variance with repeated measures on the last factor. Again, because of the small sample size these variables were examined separately to assess the size and significance of any effects. The means and standard deviations for these variables are presented in Tables 13 and 14, for missing an easy shot and receiving a bad call from the umpire, respectively.
### Table 11

Means and Standard Deviations for Levels of Effort, Trying Hard, Enjoyment, Fun, Pride, Performance, and Satisfaction For Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>How much effort I put into hockey games</th>
<th>How hard I try when playing hockey games</th>
<th>How much I enjoy playing hockey games</th>
<th>How much fun I have playing hockey games</th>
<th>How proud I am of how I play hockey games</th>
<th>How well I have played in hockey</th>
<th>How satisfied I am with how I play hockey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Experimental</td>
<td>M</td>
<td>4.00</td>
<td>4.14</td>
<td>3.29</td>
<td>2.86</td>
<td>4.43</td>
<td>4.71</td>
</tr>
<tr>
<td>SD</td>
<td>1.15</td>
<td>1.34</td>
<td>1.60</td>
<td>1.34</td>
<td>1.27</td>
<td>1.25</td>
<td>.82</td>
</tr>
<tr>
<td>Control</td>
<td>M</td>
<td>4.14</td>
<td>4.71</td>
<td>3.29</td>
<td>3.14</td>
<td>4.00</td>
<td>3.57</td>
</tr>
<tr>
<td>SD</td>
<td>1.34</td>
<td>1.38</td>
<td>1.25</td>
<td>1.46</td>
<td>1.63</td>
<td>1.13</td>
<td>1.34</td>
</tr>
</tbody>
</table>

Note: based on rating on a 6-point Likert scale: 1= Very strongly disagree, 6= Very strongly agree  * significant at .05

### Table 12

Means and Standard Deviations for level of Effort, Performance, and Desire to Keep Playing as Compared to other Team members For Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>How much effort put into hockey games compared to teammates</th>
<th>How well I usually play hockey compared to teammates</th>
<th>How much I want to keep playing hockey compared to teammates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Experimental</td>
<td>M</td>
<td>3.00</td>
<td>2.57</td>
</tr>
<tr>
<td>SD</td>
<td>.82</td>
<td>1.27</td>
<td>.90</td>
</tr>
<tr>
<td>Control</td>
<td>M</td>
<td>2.57</td>
<td>2.14</td>
</tr>
<tr>
<td>SD</td>
<td>.79</td>
<td>1.07</td>
<td>.69</td>
</tr>
</tbody>
</table>

Note: based on rating on a 5-point Likert scale: 1= Much more, 5= Much less
Situation 1: Missing An Easy Shot

A significant group by time effect, $F(1, 12) = 6.77, p = .02$, was obtained for the level of guilt experienced by participants. Inspection of the group means (see Table 13) showed that experimental participants reported a decreased mean level of guilt after missing an easy shot following the program, as compared to an increased mean level of guilt for control participants. The remaining ANOVA’s did not reveal any significant effects, all $p$’s > .10. There was a decrease in mean anger scores over time reported by experimental participants, but this was also observed for control participants. There were increases in the mean scores for feeling annoyed and unhappy after missing an easy shot over time for experimental participants, but these were also observed for control participants.

### Table 13

Means and Standard Deviations for the Variables Annoyed, Guilty, Embarrassed, Angry; and Unhappy at Pre- and Post-treatment in Response to “Missing an Easy Shot” for Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Annoyed Pre</th>
<th>Annoyed Post</th>
<th>Guilty Pre</th>
<th>Guilty Post</th>
<th>Embarrassed Pre</th>
<th>Embarrassed Post</th>
<th>Angry Pre</th>
<th>Angry Post</th>
<th>Unhappy Pre</th>
<th>Unhappy Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>2.86</td>
<td>3.14</td>
<td>4.57</td>
<td>2.71*</td>
<td>4.00</td>
<td>4.00</td>
<td>4.14</td>
<td>3.43</td>
<td>4.14</td>
<td>4.42</td>
</tr>
<tr>
<td></td>
<td>1.57</td>
<td>1.35</td>
<td>1.13</td>
<td>1.25</td>
<td>1.15</td>
<td>1.15</td>
<td>1.77</td>
<td>1.81</td>
<td>1.46</td>
<td>1.40</td>
</tr>
<tr>
<td>Control</td>
<td>3.29</td>
<td>3.86</td>
<td>2.57</td>
<td>3.14*</td>
<td>3.29</td>
<td>3.14</td>
<td>4.43</td>
<td>3.71</td>
<td>3.29</td>
<td>4.86</td>
</tr>
<tr>
<td></td>
<td>.95</td>
<td>.90</td>
<td>.79</td>
<td>1.68</td>
<td>1.70</td>
<td>1.95</td>
<td>1.72</td>
<td>1.60</td>
<td>2.21</td>
<td>.90</td>
</tr>
</tbody>
</table>

Note: annoyed (rated on a 5 point likert scale, 1 = not at all, 5 = very much) all other variables rated on a 6 point scale (1= not at all, 6 = very much)

Situation 2: Receiving A Bad Call From The Umpire

The ANOVA’s revealed no significant effects for the variables examined, all $p$’s > .09. Inspection of the group means (see Table 14), showed that mean scores for feeling annoyed after receiving a bad call from the umpire decreased for experimental participants following the training program, while annoyance increased for control participants.
participants. The group means also showed that embarrassment and unhappiness decreased over time for experimental participants. However, these decreases were also observed for control participants. Finally, inspection of the group means showed that guilt and anger increased over time for experimental athletes after receiving a bad call from the umpire but decreased for control athletes.

Table 14

Means and Standard Deviations for the Variables Annoyed, Guilty, Embarrassed, Angry, and Unhappy at Pre- and Post-treatment in Response to Receiving a “Bad Call from The Umpire” for Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Annoyed</th>
<th>Guilty</th>
<th>Embarrassed</th>
<th>Angry</th>
<th>Unhappy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Experimental</td>
<td>3.14</td>
<td>2.29</td>
<td>3.00</td>
<td>3.14</td>
<td>3.00</td>
</tr>
<tr>
<td>M</td>
<td>1.35</td>
<td>1.38</td>
<td>1.83</td>
<td>1.68</td>
<td>2.24</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>3.43</td>
<td>3.57</td>
<td>2.71</td>
<td>1.57</td>
<td>3.14</td>
</tr>
<tr>
<td>M</td>
<td>1.51</td>
<td>1.62</td>
<td>1.57</td>
<td>.79</td>
<td>2.12</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: annoyed (rated on a 5 point Likert scale, 1 = not at all, 5 = very much)
all other variables rated on a 6 point scale (1 = not at all, 6 = very much)

Section 2

Analyses of data were based on four sets of dependent variables including (a) positive and negative affect, (b) positive and negative stress appraisals, (c) perceived control, and (d) coping efficacy. These analyses aimed to examine the effects of a stress management training program in reducing the deleterious effects of acute stress experienced by competitive junior hockey players following two selected acute sources of stress. Specifically it was predicted that the experimental group compared to the placebo control group would report (1) increased positive affect, positive (i.e., challenge) appraisals, perceived controllability, and coping efficacy, and (2) decreased negative affect and negative (i.e., threat) appraisals. Because of previous research suggesting that
individuals employ different appraisal and coping strategies across different stressful situations, separate tests for each source of acute stress were conducted to examine related hypotheses. The alpha level for all of these statistical comparisons was .05.

To determine the effectiveness of the intervention training program, the responses from the pre- and post-intervention questionnaires were examined. Dependent variables were analysed by a 2 x 2 (Group x Time) analysis of variance, with the last factor being a repeated measure. Improvement was defined in terms of increases in positive affect, positive appraisals, perceived control, and coping efficacy measures and decreases in negative affect and negative appraisals.

Situation 1: Missing An Easy Shot

The means and standard deviations of all dependent measures at pre and post treatment are shown in Tables 15. A significant time effect was obtained for negative affect $F(1,12) = 5.50, p = .037$. Thus, the group means for negative affect increased over time for both the experimental and control groups. A significant time effect was also reported for perceived controllability $F(1,12) = 4.82, p = .049$. However, inspection of the group means showed that perceived controllability decreased for both experimental and control groups. These findings were contrary to expected results for the experimental group. The ANOVA’s for the variables positive affect, positive and negative appraisal, perceived coping efficacy (positive or negative) did not reveal any significant effects, all $p’s > .10$. Inspection of the group means revealed no change over time for negative efficacy or positive efficacy for the experimental group, and the direction of change in the remaining means were contrary to that proposed for experimental participants.

In summary, the hypotheses that experimental participants would report increased positive affect, positive appraisals, perceived controllability, and coping efficacy (positive) and decreased negative affect, negative appraisals and negative efficacy after missing an easy shot, as compared to control participants were not supported.
Situation 2: Receiving A Bad Call From The Umpire

The means and standard deviations of all dependent measures at pre and post treatment are shown in Table 16. The ANOVA’s did not reveal any significant effects for the dependent variables examined, all p’s >.10. Inspection of the means for positive affect, positive appraisal and positive efficacy showed the small and non-significant increases were in the direction proposed for the experimental group. Contrary to expectation, the group means for negative affect and negative efficacy revealed increases over time for experimental participants. The group means for perceived control showed decreases over time for experimental participants, also contrary to expectation. The group means for negative appraisal remained unchanged for the experimental group over time. With the exception of positive affect, negative appraisal and negative efficacy the increases and decreases in control group means mirrored the direction observed in experimental group means.

In summary, the hypotheses that experimental participants as compared to control participants would report increased positive affect, positive appraisals, perceived controllability, and coping efficacy (positive) and decreased negative affect, negative appraisals and negative efficacy after receiving a bad call from the umpire, were not supported.
Table 15
Means and Standard Deviations for Affect, Stress Appraisals, Perceived Control, and Coping Efficacy at Pre- and Post-treatment in Response to “Missing an Easy Shot” for Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
<th>Positive Appraisal</th>
<th>Negative Appraisal</th>
<th>Perceived Control</th>
<th>Efficacy Positive</th>
<th>Efficacy Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pre</td>
<td>post</td>
<td>pre</td>
<td>post</td>
<td>pre</td>
<td>post</td>
<td>pre</td>
</tr>
<tr>
<td>Experiment</td>
<td>M</td>
<td>2.20</td>
<td>2.02</td>
<td>2.42</td>
<td>2.85</td>
<td>2.57</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.87</td>
<td>0.38</td>
<td>0.88</td>
<td>0.93</td>
<td>0.98</td>
<td>0.82</td>
</tr>
<tr>
<td>Control</td>
<td>M</td>
<td>1.75</td>
<td>1.80</td>
<td>2.41</td>
<td>2.91</td>
<td>2.29</td>
<td>1.86</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.42</td>
<td>0.71</td>
<td>0.70</td>
<td>0.32</td>
<td>1.70</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Note: all based on ratings of a 5 point Likert scale (1 = not at all, 5 very much)

Table 16
Means and Standard Deviations for Affect, Stress Appraisals, Perceived Control, and Coping Efficacy at Pre- and Post-treatment in Response to “Receiving a Bad Call from the Umpire” for Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
<th>Positive Appraisal</th>
<th>Negative Appraisal</th>
<th>Perceived Control</th>
<th>Efficacy Positive</th>
<th>Efficacy Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pre</td>
<td>post</td>
<td>pre</td>
<td>post</td>
<td>pre</td>
<td>post</td>
<td>pre</td>
</tr>
<tr>
<td>Experiment</td>
<td>M</td>
<td>1.92</td>
<td>1.96</td>
<td>2.35</td>
<td>2.62</td>
<td>2.43</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.60</td>
<td>0.55</td>
<td>0.74</td>
<td>0.96</td>
<td>1.13</td>
<td>1.13</td>
</tr>
<tr>
<td>Control</td>
<td>M</td>
<td>1.96</td>
<td>1.57</td>
<td>2.67</td>
<td>3.05</td>
<td>1.71</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.71</td>
<td>0.66</td>
<td>0.68</td>
<td>0.40</td>
<td>0.76</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: all based on ratings of a 5 point Likert scale (1 = not at all, 5 very much)
Section 3

To assess the manner in which participants responded to the two sources of stress in study 2, the coping responses from the pre- and post-intervention questionnaires were examined for both the frequency and type of coping strategy employed. Data were analysed by a 2 x 2 (Group x Time) analysis of variance (ANOVA) with repeated measures on the last factor. The means and standard deviations for the frequency of coping responses measured at pre- and post-treatment are shown in Table 17.

As indicated earlier, participants were asked to identify all the coping responses they usually employed in response to the two stressors, “missing an easy shot” and “receiving a bad call from the umpire.” The coping responses employed by each group were classified into approach/avoidance then subdivided into emotion or task focused strategies, following the guidelines of a number of researchers (Lazarus & Folkman, 1984; Endler & Parker, 1986; Anshel 1990), as seen in Tables 19 and 20. The list of 26 coping strategies provided to participants in pre- and post-treatment questionnaires were classified by 3 independent raters, until 100% rater agreement was reached on each classification.

The four categories of coping strategies included approach-emotion-focused, approach-task-focused, avoidance-emotion-focused and avoidance-task-focused. However, as shown the frequency of coping responses in each category of coping were not equal. Three of the 26 coping strategies did not fit the criteria for these categories and remained separate to this classification. These included, ‘I did not do anything’, ‘I yelled out something’, and ‘I worried about what had happened.’ However, the number of coping responses in each category of coping were unequal. Therefore, results for the coping responses employed by participants are presented according to the frequency and percentage with which the participants reported using each category of coping.
Coping Frequency

Analyses of variance did not reveal any significant differences for the total frequency of coping strategies reported following the intervention, all p’s >.10. However, as shown in Table 17, the means were all in the expected directions, and the mean number of coping strategies employed by experimental participants increased by 82.3% in response to missing an easy shot, and 83.3% in response to receiving a bad call from the umpire, from pre- to post-testing. In summary, the mean frequency for the total number of coping responses employed by experimental participants in response both stressors increased markedly (82.8%) and decreased slightly for control participants (2.45%), following the intervention training program. The changes observed in the frequency of strategies reported reflects the ability of participants to report all coping strategies they usually employ following their experience of the stressor.

Table 17

Means and Standard Deviations for the Frequency of Total Coping Strategies Employed after Missing an Easy Shot, Receiving a Bad Call from the Umpire, and Total Coping Strategies Employed for Experimental (n=7) and Control (n=7) Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Missing an easy shot</th>
<th>Recieving a bad umpire call</th>
<th>Sum Coping Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRE</td>
<td>POST</td>
<td>PRE</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>2.43</td>
<td>4.43</td>
<td>2.57</td>
</tr>
<tr>
<td>SD</td>
<td>.79</td>
<td>4.20</td>
<td>.79</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.43</td>
<td>3.00</td>
<td>2.29</td>
</tr>
<tr>
<td>SD</td>
<td>1.51</td>
<td>2.77</td>
<td>.95</td>
</tr>
</tbody>
</table>

Classification of Coping Responses

Situation 1: Missing An Easy Shot

The analysis of variance did not reveal any significant effects for the categories of coping responses, all p’s >.10. However, as shown in Table 18, the means were in the expected direction, with experimental participants employing 100% avoidance type
strategies in response to “missing a easy shot” prior to the training program, as compared to 77.42% avoidance and 22.58% approach strategies following the training program. Further, the percentage of avoidance strategies employed by the control group increased over time, and the percentage of approach strategies decreased. In summary, the use of approach strategies by the experimental group increased following the training program.

Table 18

Coping Responses Classified As Percentages Of Total Coping For Experimental and Control Participants and Percentage of Total Coping For Both Groups (N=14) at Pre- and Post-treatment in Response to “Missing An Easy Shot”

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%Pre(1) Freq</td>
<td>%Post(2) Freq</td>
</tr>
<tr>
<td>Approach: emotion focused</td>
<td>0.0% 0</td>
<td>6.45% 2</td>
</tr>
<tr>
<td>Approach: task focused</td>
<td>0.0% 0</td>
<td>16.13% 5</td>
</tr>
<tr>
<td>Avoidance: emotion focused</td>
<td>52.94% 9</td>
<td>48.39% 15</td>
</tr>
<tr>
<td>Avoidance: task focused</td>
<td>47.06% 8</td>
<td>29.03% 9</td>
</tr>
<tr>
<td>Did not do anything</td>
<td>0.0% 0</td>
<td>0.0% 0</td>
</tr>
<tr>
<td>Yelled out something</td>
<td>0.0% 0</td>
<td>0.0% 0</td>
</tr>
<tr>
<td>Worry about what happened</td>
<td>0.0% 0</td>
<td>0.0% 0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17 100.0%</td>
<td>31 100.0%</td>
</tr>
</tbody>
</table>

Note: (1) Represents percentage of all coping categories for each treatment group PRE intervention
      (2) Represents percentage of all coping categories for each treatment group POST intervention
Table 19

Participant's Coping Responses Classified As Percentages Of Total Coping Response For Experimental and Control Participants and Percentage of Total Coping For Both Groups (N=14) at Pre- and Post-treatment in Response to Receiving a Bad Call From The Umpire

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Freq</th>
<th>%Pre(1)</th>
<th>Freq</th>
<th>%Post(2)</th>
<th>Freq</th>
<th>%Pre(1)</th>
<th>Freq</th>
<th>%Post(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approach:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emotion focused</td>
<td>1</td>
<td>5.56%</td>
<td>3</td>
<td>9.09%</td>
<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td>task focused</td>
<td>0</td>
<td>0.0%</td>
<td>4</td>
<td>12.12%</td>
<td>2</td>
<td>12.5%</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td><strong>Avoidance:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emotion focused</td>
<td>9</td>
<td>50.0%</td>
<td>17</td>
<td>51.52%</td>
<td>10</td>
<td>62.5%</td>
<td>7</td>
<td>38.89%</td>
</tr>
<tr>
<td>task focused</td>
<td>6</td>
<td>33.33%</td>
<td>8</td>
<td>24.24%</td>
<td>4</td>
<td>25.0%</td>
<td>5</td>
<td>27.78%</td>
</tr>
<tr>
<td>did not do anything</td>
<td>1</td>
<td>5.56%</td>
<td>1</td>
<td>3.03%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>yelled out something</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td>worry about what happened</td>
<td>1</td>
<td>5.56%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>18</td>
<td>100.0%</td>
<td>33</td>
<td>100.0%</td>
<td>16</td>
<td>100.0%</td>
<td>18</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: (1) Represents percentage of all coping categories for each treatment group PRE intervention
(2) Represents percentage of all coping categories for each treatment group POST intervention

**Situation 2: Receiving A Bad Call From The Umpire**

Analysis of variance did not reveal any significant effects for the categories of coping responses, all p's >.10. An inspection of Table 19 shows that after receiving a bad call from the umpire the percentage use of avoidance-emotion focused strategies by experimental participants increased over time, and the use of avoidance-task focused decreased. Contrary to expectation, the use of approach strategies, particularly task focused strategies also increased for experimental participants following the training program. The percentage of avoidance (emotion focused) strategies employed by the control group decreased over time, and the percentage of approach (emotion focused)
strategies increased. In summary, the use of approach strategies by experimental participants increased following the training program, a finding contrary to expected results.

The three coping responses that did not fit the approach/avoidance classification (emotion/focused) I didn't do anything, I yelled out something, and I worried about what had happened were only reported by a small percentage of participants. No participants in the experimental group reported these responses after missing an easy shot and the reported use of these responses after receiving a bad call from the umpire decreased following the training program for experimental participants. These responses were reported by control participants in both pre- and post-questionnaires.

Section 4

Throughout the training program all participants in the experimental group were required to complete weekly homework. The instructor discussed this homework with experimental group participants in each workshop, to encourage adherence and monitor the participant's skill in mastering the coping skills introduced. Following completion of the training program participants in both groups completed a post intervention questionnaire, designed to explore participants' knowledge and understanding of information covered, and verify the utilisation of the strategies taught. The questionnaire included (a) knowledge questions identical for both groups based on information covered in the experimental group sessions (b) specific knowledge questions for each group (c) ratings of future intention to use the strategies taught, and (d) overall ratings of the material covered in the sessions and enjoyment of participating in the program. Descriptive data for these responses are presented in Tables 20, 21, 22, and 23 respectively.

The qualitative knowledge based responses of participants to the questions in parts (a) and (b) of the questionnaire were rated on a 5 point scale. The criteria for each
response was outlined by the researcher, and participants' responses were compared to these, with higher scores indicating more accurate responses. These responses were rated independently by the researcher and a second individual, with almost unanimous agreement of ratings. Those cases where discrepancies were observed were discussed and negotiated, until 100% agreement between raters was reached.

The post intervention questionnaire indicated that participants were able to learn the basic concepts in the stress management training program. Specifically, participants in the experimental group showed more knowledge of stress management skills, on all the combined groups knowledge based questions in part as compared to control participants. Experimental participants reported significantly more knowledge on 5 responses, on paired t-tests (see Table 20 - combined groups knowledge questions). This suggests that participants in the experimental group were able to learn and retain the knowledge and strategies taught in the training program, and control group participants showed little knowledge.

An examination of the means in Table 21, reveals the higher mean scores for both experimental and control participants were reported for the practical aspects of strategies taught. Both treatment groups rated their future intention to use the strategies learnt in their respective programs highly, as shown in Table 22. Interestingly, both treatment groups indicated a strong intention to transfer the knowledge and skills learnt in the program to other sport and non-sport settings. This suggests that both groups identified benefits and applications for the skills learnt.

Finally, the participants in both treatment groups rated the usefulness of the information covered in their respective programs was as between moderately and quite useful. In summary, the mean responses for both treatment groups suggested all participants had enjoyed participating in the program, they demonstrated knowledge of new skills and how to implement them, and the recognised benefits and possible application of those skills.
Table 20

Means and Standard Deviations for Post Intervention Knowledge Questions Common to both Experimental and Control Groups (Questions 1-10)

<table>
<thead>
<tr>
<th>Questions</th>
<th>CONTROL</th>
<th></th>
<th>EXPERIMENTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>1. Physiological responses to stress</td>
<td>1.43</td>
<td>.53</td>
<td>3.71</td>
<td>.95***</td>
</tr>
<tr>
<td>2. Cognitive responses to stress</td>
<td>2.43</td>
<td>1.40</td>
<td>3.29</td>
<td>.76</td>
</tr>
<tr>
<td>3. Affective responses to stress</td>
<td>2.86</td>
<td>1.07</td>
<td>3.57</td>
<td>.79</td>
</tr>
<tr>
<td>4. Behavioural responses to stress</td>
<td>2.43</td>
<td>.79</td>
<td>3.29</td>
<td>.76</td>
</tr>
<tr>
<td>5. Consequences of negative self talk</td>
<td>2.57</td>
<td>1.40</td>
<td>3.86</td>
<td>1.07</td>
</tr>
<tr>
<td>6. Overcoming negative self talk (Missing and Easy Shot) SKILL</td>
<td>2.14</td>
<td>1.07</td>
<td>3.86</td>
<td>1.21*</td>
</tr>
<tr>
<td>7. Overcoming negative thoughts (Bad call from Umpire) SKILL</td>
<td>1.42</td>
<td>.79</td>
<td>3.43</td>
<td>1.51**</td>
</tr>
<tr>
<td>8. Current strategies in response to game stressors</td>
<td>1.71</td>
<td>1.11</td>
<td>2.86</td>
<td>1.21</td>
</tr>
<tr>
<td>9. Future strategies: response to steers</td>
<td>1.29</td>
<td>.49</td>
<td>2.29</td>
<td>1.38</td>
</tr>
<tr>
<td>10. How to stop negative thoughts SKILL</td>
<td>1.86</td>
<td>.90</td>
<td>3.43</td>
<td>1.40*</td>
</tr>
<tr>
<td>11. Centering SKILL</td>
<td>1.29</td>
<td>.49</td>
<td>4.00</td>
<td>1.73***</td>
</tr>
</tbody>
</table>

Note: based on rating of a 5-point response answer, with higher numbers indicating greater knowledge

significant * p < .03, ** p < .01, *** p < .003
Table 21
Means and Standard Deviations for Knowledge Questions Specific to Experimental and Control Groups

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Technique: how to do centering</td>
<td>5.00</td>
<td>0.00</td>
</tr>
<tr>
<td>13. Technique: how to practice imagery</td>
<td>5.00</td>
<td>0.00</td>
</tr>
<tr>
<td>14. Why using imagery works</td>
<td>2.00</td>
<td>0.58</td>
</tr>
<tr>
<td>15. What to use imagery for</td>
<td>3.00</td>
<td>0.82</td>
</tr>
<tr>
<td>16. Characteristics of effective imagery (senses)</td>
<td>4.14</td>
<td>1.21</td>
</tr>
<tr>
<td>17. Identifying physiological responses to stress</td>
<td>5.00</td>
<td>0.00</td>
</tr>
<tr>
<td>18. What no control over stressor means</td>
<td>3.86</td>
<td>1.57</td>
</tr>
<tr>
<td>19. What control over stressor means</td>
<td>5.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Group</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Defining a goal in sport</td>
<td>3.86</td>
<td>1.46</td>
</tr>
<tr>
<td>13. Reasons for making goals in sport</td>
<td>2.57</td>
<td>1.27</td>
</tr>
<tr>
<td>14. Benefits of goal setting in sport</td>
<td>1.29</td>
<td>0.49</td>
</tr>
<tr>
<td>15. The process of goal setting (what to do after choosing goals)</td>
<td>2.14</td>
<td>1.57</td>
</tr>
<tr>
<td>16. The goal setting process (why write them down)</td>
<td>3.86</td>
<td>0.38</td>
</tr>
<tr>
<td>17. Characteristic of Goal setting (need to be challenging)</td>
<td>3.29</td>
<td>1.80</td>
</tr>
<tr>
<td>18. Benefits of a routine in sport</td>
<td>2.14</td>
<td>1.07</td>
</tr>
</tbody>
</table>

Note: based on rating of a 5-point response answer, with higher numbers indicating greater knowledge

Table 22
Means and Standard Deviations for Future Intention Questions Specific to Experimental and Control Groups

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Using trigger/signal to stop negative thoughts</td>
<td>4.86</td>
<td>0.90</td>
</tr>
<tr>
<td>21. Using centering to regain concentration and reduce stress</td>
<td>4.19</td>
<td>0.90</td>
</tr>
<tr>
<td>22. Practicing centering</td>
<td>4.57</td>
<td>1.27</td>
</tr>
<tr>
<td>23. Using positive self statements (change negative to positive)</td>
<td>4.71</td>
<td>1.11</td>
</tr>
<tr>
<td>24. Using skills learnt in other sports</td>
<td>5.00</td>
<td>1.00</td>
</tr>
<tr>
<td>25. Using skills learnt at school</td>
<td>4.29</td>
<td>1.11</td>
</tr>
<tr>
<td>26. Using skills learnt at home</td>
<td>4.57</td>
<td>1.13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Group</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. Using goal setting</td>
<td>4.86</td>
<td>0.07</td>
</tr>
<tr>
<td>20. Using skills learnt in other sports</td>
<td>4.86</td>
<td>1.07</td>
</tr>
<tr>
<td>21. Using skills learnt at school</td>
<td>3.00</td>
<td>1.41</td>
</tr>
<tr>
<td>22. Using skills learnt at home</td>
<td>4.29</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Note: based on rating of a 5-point response answer, with higher numbers indicating greater knowledge
Table 23

Post Intervention Questions rating How Useful and Enjoyable the information covered in the Sessions for both Experimental and Control Groups

<table>
<thead>
<tr>
<th>Topics</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to stop negative thoughts</td>
<td>3.43</td>
<td>1.27</td>
</tr>
<tr>
<td>How to use positive self talk (replace negative to positive)</td>
<td>3.71</td>
<td>.76</td>
</tr>
<tr>
<td>How to use centering to regain concentration</td>
<td>3.57</td>
<td>1.27</td>
</tr>
<tr>
<td>Identifying which strategy to use (controllability)</td>
<td>3.29</td>
<td>.76</td>
</tr>
<tr>
<td>Employment of final coping routine</td>
<td>3.71</td>
<td>1.38</td>
</tr>
<tr>
<td>Enjoyment of participation in program</td>
<td>3.86</td>
<td>1.07</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to set short term goal (weekly)</td>
<td>3.43</td>
<td>.79</td>
</tr>
<tr>
<td>How to set a medium term goal (6-weekly)</td>
<td>3.29</td>
<td>.49</td>
</tr>
<tr>
<td>Developing a pre-competition routine (week before)</td>
<td>4.00</td>
<td>.82</td>
</tr>
<tr>
<td>Developing a pre-competition routine (on the day)</td>
<td>3.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Enjoyment of participation in program</td>
<td>4.14</td>
<td>.69</td>
</tr>
</tbody>
</table>

Note: All responses rated on a 5-point Likert Scale (1 = not at all, 5 = very much)

Additional analyses: Intensity and Frequency of Acute Stressors

To assess the manner in which participants rated the intensity and frequency of sources of acute stress, these responses from the pre- and post-treatment questionnaires were examined. Data were analysed by a 2 x 2 (group x time) multivariate analysis of variance, with repeated measures on the last factor. The means and standard deviations for the intensity and frequency of acute stressors at pre- and post-treatment are shown in Tables 24 and 25.

The ANOVAs did not reveal any significant effects for the intensity and frequency of stressors examined, all p’s >.10. As indicated in Table 24 the experimental groups mean intensity scores decreased over time for both the controllable an uncontrollable sources of stress, “missing an easy shot” and “receiving a bad call from the umpire,” respectively. This suggests that experimental participants did not rate the experience of
these two stressors to be as stressful at post-testing. The mean intensity scores for the control group increased for missing an easy shot and decreased slightly for receiving a bad call from the umpire. The mean frequency of both sources of stress also decreased for the experimental group (see Table 25). The mean frequency for the control group remained unchanged for missing an easy shot and decreased for receiving a bad call from the umpire.

Table 24

Means and Standard Deviations for the **Intensity** of Missing An Easy Shot and Receiving A Bad Call From The Umpire for Experimental and Control Groups

<table>
<thead>
<tr>
<th></th>
<th>Missing an Easy Shot</th>
<th>Receiving a bad call from the Umpire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td><strong>Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>M</td>
<td>3.43</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.27</td>
</tr>
<tr>
<td>Control</td>
<td>M</td>
<td>3.71</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>.76</td>
</tr>
</tbody>
</table>

Note: based on rating on a 5-point Likert scale: (1 = Not at all stressful, 5 = very stressful)

Table 25

Means and Standard Deviations for the **Frequency** of Missing An Easy Shot and Receiving A Bad Call From The Umpire

<table>
<thead>
<tr>
<th></th>
<th>Missing an Easy Shot</th>
<th>Receiving a bad call from the Umpire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td><strong>Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>M</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.07</td>
</tr>
<tr>
<td>Control</td>
<td>M</td>
<td>3.57</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>1.40</td>
</tr>
</tbody>
</table>

Note: based on rating on a 5-point Likert scale: (1 = Not at all, 5 = very often)
Reliability of The Inventory Used in Study 2

The reliability co-efficients of the SACL (Mackay, Cos, Burrows, & Lazzerini, 1978) were calculated to assess the reliability of the scale used in the present study. The obtained reliability co-efficients for the negative affect and positive affect components of the SACL scale were .78 and .75, respectively, considered acceptably high.
The present study examined the effectiveness of a stress management program in helping child hockey players deal with the deleterious effects of acute stress experienced during competition. Effectiveness was determined by examining changes over time on a number of variables including global measures of the competition experience and specific components of the coping process. The results provide partial support for the effectiveness of a stress management program in reducing the negative effects of acute stress for child athletes. Specifically, it was demonstrated that experimental participants were able to learn the basic concepts and skills taught in the program and were more likely than controls to enjoy a positive sporting experience following the intervention. However, experimental participants showed no significant differences on specific components of the coping process, as compared to control participants.

The analyses of the post intervention knowledge test showed that child athletes aged 10-12 yrs were able to learn and comprehend the information covered in the stress management program. In particular, experimental participants reported higher mean responses to the questions on the knowledge test indicating greater awareness of the signs of stress and knowledge of the components of stress in the transactional model of stress and a greater knowledge of strategies and how to employ them, compared to control participants. Thus, support was demonstrated for the ability of experimental participants to learn the concepts and skills covered in the stress management program.

Similar to previous school based stress management programs (Davis, 1991; DeWolfe & Saunders, 1992; Edwards & Hofmeier, 1991), the current program was designed to educate participants about the nature of stress, recognise the situations that cause them to feel stress, and the means by which they can cope with this stress. The goal of the program was to teach specific coping skills at the cognitive and physiological levels to enable greater control over emotional responses and reduce or prevent high levels of
arousal that interfere with performance and enjoyment. Following the intervention experimental participants were more able to identify the signs of stress and employ specific coping skills to minimise or reduce the experience of two acute stressors, compared to control participants. Experimental participants enjoyed a more positive sport experience than control participants, following the program.

Further support for the effectiveness of the intervention was the strong intention reported by experimental participants to use the strategies and skills taught in the program in the future, in both sport and non sport settings (e.g., school and home). This suggests that experimental athletes recognised the coping skills taught in the program were also applicable in other situations. The control group also rated highly their future intention to use the strategies they had learnt in the control group sessions, suggesting they identified the skills taught in their program as useful. This was an important factor in encouraging adherence in the control group program. It also decreased the likelihood that any improvements displayed by participants were the result of merely being involved in the study (i.e., the Hawthorn effect).

Analyses of the global measures of the competitive experience also provide support for the effectiveness of the stress management program. Specifically, it was hypothesised that the experimental group compared to the control group would report an increased level of effort, fun, enjoyment, participation, desire to continue playing, pride in their play, performance level and satisfaction with their play following the intervention. These hypotheses were partially supported with significant increases identified for experimental participants in the level of fun and pride in the way they played following the intervention, as compared to control participants. Non-significant increases were also observed for the level of effort, enjoyment, performance and desire to continue playing following the program for experimental participants. The increase in these global measures of the competition experience suggests experimental participants enjoyed a more positive sporting experience following the intervention than did controls.
Interestingly, following the intervention, experimental participants reported an increase (non-significant) when rating their personal effort level in hockey games, but reported a decrease (non-significant) when rating their own effort level in comparison to teammates. Similarly, experimental participants reported an increase (non-significant) when rating their personal performance level in hockey, but reported a decrease (non-significant) when rating their own performance level in comparison to teammates. Although non-significant, these differences demonstrated inconsistencies in the trends observed in the results between personal ratings and ratings in comparison to teammates. Two possible explanations for these inconsistencies were identified. Firstly, athletes may have been more confident in making an assessment of their personal performance but, it may have been more difficult for them to compare their personal effort and performance level to their teammates. Secondly, the effort and performance level of others in the team may have increased over time, and experimental participants may have perceived these improvements to be greater than their own. As noted, these suggestions are entirely speculative. The exploratory nature of this research and the absence of previous research to answer these questions highlight the need for further study to explain these results.

Despite this inconsistency, these results partially support the effectiveness of the training program in increasing positive aspects of global measures of the competition experience. Researchers have noted that the negative effects of acute stress in sport can detract from the child athletes enjoyment of sports, cause performance impairment, chronic stress, emotional distress, decreased motivation, and contribute to the withdrawal or youth drop out rate (e.g., Gould et al., 1985; McPherson & Brown, 1988; Pooley, 1980; Scanlan & Passer, 1979; Smith, 1986; Smoll & Smith, 1992). However, experimental participants should be less likely to experience these negative consequences and withdraw from sport if they were experienced in coping skills to reduce or manage the acute stressors experienced, compared to control participants.
In addition to the findings related to the global measures of the sport experience, other variables supported the effectiveness of the stress management program. Specifically, it was hypothesised that the experimental group compared to the control group would report decreases in ratings of how annoyed, guilty, embarrassed, angry and unhappy they felt following both stressors. The results revealed a significant decrease in how guilty experimental participants felt (with themselves) after missing an easy shot, and a non-significant decrease in anger experienced following this stressor, compared to control participants. Although experimental athletes reported increases over time for feeling annoyed and unhappy after missing an easy shot, these scores were still lower than the post-data scores reported by control participants. Only on embarrassment did experimentals report the same score pre to post, while controls showed a small decrease.

In response to a bad call umpire experimental group reported a non-significant decrease in how annoyed, embarrassed and unhappy they felt after receiving a bad call from the umpire following the program, but reported higher scores on guilt and anger than the control group. In summary, following participation in the stress management program experimental participants reported a decrease in their experience of some negative emotions following the two stressors.

It was further hypothesised that the experimental group as compared to the control group would report increased, (1) positive affect, positive appraisals, perceived controllability, and coping efficacy (positive), and (2) decreased negative affect, negative appraisals, and perceived coping efficacy (negative) following the intervention for the stressors “missing an easy shot” and “receiving a bad call from the umpire.” Contrary to these hypotheses, the stress management program appeared to have no significant effect on the reported affect, appraisal, perceived controllability and coping efficacy, of experimental participants after missing an easy shot. In fact, the scores on these variables at post-testing were contrary to the direction proposed or unchanged over time for the experimental group. However, non-significant increases at post testing were observed for
experimental participants in positive affect, positive appraisal and positive efficacy after receiving a bad call from the umpire. The changes observed at post-testing in remaining variables after receiving a bad umpire call were contrary to the direction proposed or unchanged over time for experimental participants. In summary, there was minimal support for the effectiveness of the intervention program in helping experimental athletes deal with the negative consequences of stress as measured on these variables examining specific components of the coping process.

Possible factors that may have influenced this result include the perceived intensity of the stressors at post-testing and the ability of child athletes to undertake these complex tasks. Experimental participants reported a decrease (non-significant) in how intensely they experienced both stressors at post-testing. That is, experimental participants reported that both situations did not stress them as much at post-testing. However, since the amount of stress experienced by young athletes is a joint function of the intensity of environmental stressors and the way the individual appraises and copes with them and any change in one of these components can influence all the others (Smoll & Smith, 1992). It seems likely that a decrease in stress intensity would have influenced the participant’s subsequent appraisals and coping responses to that stressor, since the stress experienced by the athlete is determined by the joint functioning of these factors. However, it is also possible that child athletes may not be experienced at reporting these very specific psychological factors. Questions directed at identifying concepts such as affect, appraisal, perceived controllability and coping efficacy may have been difficult to respond to for child athletes. However, in the absence of research on this area with children to answer these questions, future research will need to explore these issues.

It was notable that the frequency of coping strategies employed by experimental participants increased by 82.3% after missing an easy shot and 83.2% receiving a bad call from the umpire, from pre to post testing. Although the frequency of coping strategies cannot be equated to the efficacy of coping, it suggests that experimental participants
were able to learn strategies to respond to acute stress following participation in the program. Experimental participants also recognised the importance of controllability over stressors in relation to the selection of appropriate coping strategies, as identified in their responses to the post intervention knowledge test questions. That is, experimental participants identified that when you have a degree of control over a stressor (e.g., missing an easy shot) you have the potential to do something about the source of stress that is absent when you have little potential for control over the source of stress (e.g., receiving a bad call from the umpire).

The importance of control in an acute stress situation was emphasised to participants as an important criterion in determining whether an approach or avoidance coping strategy would be appropriate in response to the stressor (Johnston & McCabe, 1993). Participants were instructed that approach strategies were more appropriate where there is potential for control over the stressor whereas avoidance strategies were more appropriate when the individual has little potential for control over the stressor. Indeed, researchers have suggested that avoidance coping is more appropriate in the short-term, where the stressor is uncontrollable as it may decrease anxiety and frustration whereas approach coping is more appropriate in situations where the stressor is controllable because it permits instrumental actions that allow the individual to deal with the sources of the stress (e.g., Johnston & McCabe, 1993; Miller, 1990; Mullen & Suls, 1982; Roth & Cohen, 1986). Consistent with strategies described in previous research experimental participants were taught that avoidance coping involved attempts to avoid thinking about the stressor, behavioural efforts to detach oneself from the stressor, passive acceptance that the stressor occurred, and efforts to avoid confronting one's feelings whereas approach coping involved overt attempts to alter the stressor, ways of thinking about how to deal with the stressor, efforts to seek emotional support, and ways of ventilating emotions (e.g., Carver et al., 1989; Crocker, 1992; Madden et al, 1990).
It was hypothesised that the experimental group as compared to the control group would report more approach coping strategies after missing an easy shot, following participation in the stress management program. This hypothesis was not supported. However, following the intervention experimental participants reported a non-significant increase of 22.6% of total coping strategies as approach focused, as compared to zero (0%) usage of approach coping strategies prior to the intervention. It was further hypothesised that the experimental group as compared to the control group would report more avoidance coping strategies after receiving a bad call from the umpire following the intervention. This hypothesis was not supported. Following the intervention the overall use of approach coping strategies increased for both experimental and control groups and the use of avoidance coping strategies decreased.

One possible factor that may have influenced this result was the perceived intensity and frequency of both stressors at post-testing. Experimental participants reported a decrease (non-significant) in how intensely and frequently they experienced both stressors at post-testing. The decreases in intensity and frequency were both greatest for the stressor ‘receiving a bad call from the umpire.’ Thus, experimental participants reported that they did not experience the stressors receiving a bad call from the umpire as frequently or as intensely at post-testing. Since Smoll and Smith (1992) suggest the amount of stress experienced by young athletes is a function of the intensity of the stressor and the way the individual appraises and copes with it, it is possible that a decrease in stress intensity may have influenced the athletes’ subsequent appraisal and coping responses. However as noted, this suggestion is entirely speculative and further research is needed to explain these results in the absence of previous research in this area.

In summary, following the intervention experimental participants reported greater enjoyment, effort, performance levels and desire to continue playing hockey and significantly greater fun and pride in the way they had played, significant decreases in the level of guilt experienced after missing an easy shot, decreases in other negative emotions
experienced after both stressors, and increases in the use of approach coping strategies after missing an easy shot. These results provided partial support for the effectiveness of the stress management program in reducing the negative influence of acute stress. However, the present results did not appear to accurately capture the more positive sport experience following the intervention for experimental participants as measured on the variables examining the specific components of the coping process (e.g., affect, appraisal, perceived controllability and coping efficacy).

The present study attempted to overcome a number of limitations and methodological shortcomings identified in previous stress management research. These included (a) a failure to include a placebo-control group (Kerr & Leith, 1993), (b) athletes being instructed in too many coping strategies that resulted in confusion and indecisiveness about which strategy to implement (Anshel, 1990b), and (c) a lack of post intervention checks assessing whether participants were actually utilising their coping techniques (Greenspan & Feltz, 1989).

The absence of a placebo-control group in previous studies has been recognised as a pervasive limitation that made it unclear whether the improvements displayed by participants were the result of the treatment or merely being involved in the study (i.e., the Hawthorne effect)(e.g., Anshel, 1990b; Kerr & Leith, 1993). The possible influence of a Hawthorne effect was minimised in the present study by including a placebo-control group presented with beneficial sport psychology seminars, containing information not directly related to anxiety reduction. The inclusion of such a group in the present study increased the likelihood that it was the actual coping skills taught that enabled the experimental participants to obtain greater improvements compared to the control participants, and allowed validation of the efficacy of the coping strategies taught in the stress management program.

Previous research has also been criticised for advocating the athletes' selection from a "smorgasboard" of coping skills when confronted with a stressful situation during
competition. Anshel (1990b) referred to this process as "paralysis by analysis," where in the time limited opportunity of a game the athlete is confronted by too many strategies and unsure of which to choose or implement. Identifying the strategies most functional in meeting personal and situational needs was recommended by Anshel (1990b) to allow the athlete to quickly select an appropriate coping strategy.

Previous researchers have identified the benefits of providing athletes with a structured sequence of coping strategies to help the athlete respond quickly and efficiently to the acute stress experienced (Anshel, 1990b; Boutcher & Rotella, 1987; Orlick, 1986; Suinn, 1972). Consequently, an important feature of the present study was the provision of coping strategies, organised into a specific integrated coping routine to enable speedy and efficient employment in time limited acute stress situations (Anshel, 1990b; Boutcher & Rotella, 1987; Orlick, 1986). The development of a specific coping routine also fostered mastery and familiarity of its application.

Another important inclusion in study 2 was a post-intervention knowledge test. This post intervention test allowed the researcher to verify that participants were actually rehearsing the coping skills taught, and help determine the effectiveness of these skills in coping with acute stress during competition (Greenspan & Feltz, 1989, Ludwick-Rosenthal & Neufeld, 1988). Excluding these elements from past stress management studies was recognised as a pervasive limitation in previous stress management research (Greenspan & Feltz, 1989, Ludwick-Rosenthal & Neufeld, 1988). The inclusion of the motivational control group, specific coping routine and post intervention questionnaire allowed comparisons to gauge the efficacy of the stress management strategies. In summary, these elements enabled the researcher to more accurately conclude that the changes observed in the variables were due to the intervention program received by the experimental group.

The present study also dealt with the limitations of previous research by examining the psychological processes that mediate the stress response. Although studies
by Anshel (1990) and Johnston and McCabe (1993) were based on the transactional model of stress, they had limitations. For example, participants in Anshel’s (1990) study demonstrated improvements in affect, attribution’s and performance, but the conclusions were limited because there was no assessment of the participants’ cognitive appraisals. Johnston and McCabe (1993) found evidence that coping enhances individuals’ perceptions of their capability to successfully meet the demands of a stressful encounter, but admitted their research findings were subject to external validity problems associated with laboratory research. The present study examined all components of the coping process, and its external validity was enhanced because it was conducted in the field.

It was also highlighted to experimental participants that it would take time and practise to receive the full benefits from the mental and physical skills they were learning. Coping skills are not different from any other kind of skill. In order to be most effective, they must be practiced under conditions that approximate real life. For this reason the program was designed to run in the midst of a playing season, to allow players an opportunity to practice the coping skills in response to real game related acute stressors. Importantly, participants were also made aware “that they are responsible for their own thoughts and feelings and that they have the power to change them” (Davis, 1991, p. 66). The current program therefore focused on learning skills that enable children to take an active role in addressing the experience of stress during sport.

In summary, results of the present study provided partial support for the effectiveness of the current stress management program in reducing the negative influence of acute stress for child athletes. The findings also supported the contention that young athletes were able to learn stress management techniques grounded in the transactional model of stress. Significant improvements were reported by the experimental group compared to the control group on variables examining global aspects of the competition experience. These results are encouraging and highlight the potential of such a program for child athletes, especially given that the post-testing was undertaken
after only 5 weeks of the intervention due to the previously mentioned flood conditions.
The positive findings and trends observed in this time-reduced period suggest that future interventions running to full term without interruption could elicit more successful results.
Stress in competitive sport can impede an athlete's performance, physiological, emotional and psychological well-being (Burton, 1988; Cohn, 1990). However, despite these findings coping research in sport has only recently developed, and coping with acute stress in particular, remains very much at the pioneering stage. Further, there is little if any research in the area of coping with acute stress in sport for children. Thus, the aims of the present thesis were twofold: (1) to identify the sources of acute stress, cognitive appraisals and coping responses used by child athletes in response to these stressors experienced in competitive field hockey, and (2) evaluate the effectiveness of a stress management training program to assist child athletes to cope with the deleterious effects of acute stress experienced during competition.

Sources of and Responses to Acute Stress of Junior Competitive Hockey Players

Study one examined the sources of intense acute stress experienced by child athletes playing competition hockey. It was found that the two most commonly rated sources of stress reported by players were 'receiving a bad call from the umpire' and 'making a physical game error.' Researchers have identified that stressors involving performance errors and receiving unfair decisions from referees or umpires are common across sports (e.g., Cohn, 1990; Gould et al., 1993; Scanlan et al., 1991).

The results of study one indicated gender differences in the cognitive appraisals made in response to acute stressors. Male participants reported a greater percentage of negative appraisals of acute stressors than female participants. Indeed, 72.3% of all appraisals by males were negative and only 27.7% were positive appraisals. Although female participants also reported a greater percentage of negative than positive appraisals, they reported a greater percentage of positive appraisals than males, with 42.1% of all appraisals as positive, and only 57.9% as negative. Explanations for the differences in appraisals were absent from the literature and difficult to explain. The disparity may
however, have reflected a higher mean self-esteem score for female than male participants, as measured on Coopersmith’s (1967) Self-Esteem Inventory for children. Self-esteem refers to the extent to which an individual believes themself to be capable, and successful (Coopersmith, 1984). Thus, individuals higher in self-esteem should perceive themselves as having the necessary personal resources to meet the demands of the situation.

The coping responses of participants following the sources of acute stress were also examined in study one for the frequency and type of coping strategy employed. The three most frequently reported coping responses varied in order but were identical for both male and females athletes. These included “I tried to concentrate on what I had to do next,” “I tried to forget about the whole thing” and “I didn’t let it get to me and tried not to think about it too much.” The type of coping strategies employed were classified into approach and avoidance based coping. The overall percentage use of avoidance and approach coping strategies were similar for males and females. Male and female participants both demonstrated a considerable greater percentage use of avoidance (85.9% and 80.5%) than approach coping strategies (13.8% and 19.45%) from the total coping strategies reported.

In summary, study one identified the sources of acute stress experienced by child athletes in competition field hockey, and the cognitive appraisals and coping responses employed by children in response to these stressors. In order to develop an effective stress management program that successfully minimises the negative effects of stress for athletes, it is first necessary to identify the specific demands (i.e., sources of stress), resources, and imbalances that are of concern to the individual athlete (Meichenbaum, 1985; Smith, 1980; Taylor, 1992). Identifying the sources of stress of the selected population, represented the initial step in the design of our stress management program.
The effectiveness of a stress management program for dealing with acute stress

Researchers have recognised that competitive stress in children's sport can detract from enjoyment of sport, cause performance impairment, and contribute to the drop out rate (Smoll & Smith, 1992; Pooley, 1980; Gould et al., 1986; McPherson et al., 1988). In particular, acute stress experienced in competition can be inherently debilitating to immediate subsequent performance unless the person has practiced and mastered proper coping strategies (Anshel, 1990). For example, failure to cope with and respond constructively to acute stress may lead to ineffective cognitive processes, energy reduction, performance failures, and other debilitating outcomes (e.g., Burton, 1988; Gould et al., 1987; Jones & Hardy, 1990; Smith, 1986). Anshel (1990) suggested that a program is needed in sport to control or eliminate the deleterious effects of acute stress experienced in competitive sport. The present investigation arose from the need to develop such a program, specific to the experience of acute stress in sport for child athletes aged 10-12 yrs.

According to Lazarus and Folkman (1984) the perception of stress develops when the perceived internal and external demands of a situation exceed or tax the perceived resources of the individual to cope with the demands. A consistent finding that emerges from stress literature is that perceptions of events rather than the events themselves is what produces stressful reactions (Lazarus & Folkman, 1984). Thus, what people tell themselves about situations and about their ability to cope with situational demands, influences their emotional responses. Smoll and Smith (1992) further suggest the nature of a cognitive appraisal is important, because it influences the level of physiological arousal that is likely to occur which in turn influences the ongoing appraisal process. The situational factors surrounding an event therefore affect the person primarily through the intervening influence of cognitive appraisal. Researchers suggest cognitive appraisal is a key component to address in a stress management program (Smoll & Smith, 1992). Cognitive appraisal was therefore an important topic covered in the stress management program.
program in study 2. Experimental participants were taught to recognise and identify the content of their cognitive appraisals (e.g., positive vs negative) and understand the influence of the cognitive appraisal on the physiological, affective, and behavioural responses that follow. The analyses of the post intervention knowledge test demonstrated that experimental participants recognised the importance of cognitive appraisals and the relationship between appraisal and other components of the transactional model of stress.

Researchers suggest that coping represents an effort by the individual to minimise or manage the deleterious effects of stress (e.g., Anshel, 1990; Endler & Parker, 1990; Stone & Neale, 1984). In sport, successful coping in sport is a function of the individual's perception or appraisal of self control in a situation, that is "the extent to which a person believes that he or she can shape or influence a particular stressful person-environment relationship" (Lazarus & Folkman, 1984, p. 69).

Further as Johnston and McCabe (1993) note, it requires some effort on the part of the athlete to learn and master cognitive strategies. Given that such strategies are to be used in complex, psychologically demanding situations where time is limited, a simple strategy that will enable the athlete to identify the particular stressor involved and employ the appropriate coping strategy quickly and efficiently is needed (Anshel, 1990; Johnston & McCabe, 1993). Hence, the inclusion of an integrated coping response in the present stress management study. Experimental participants were taught a specific coping sequence to encourage parsimony and speed in coping with stressful transactions (Johnston & McCabe, 1993). This enabled participants to respond first psychologically and then behaviourally in order to maintain mental and physiological readiness for subsequent performance.

Research suggests the effectiveness of a coping strategy in sport depends on the extent to which it is appropriate to the demands of the situation. Researchers have suggested the selective use of coping strategies should be a function of the type of stressor (e.g., missing an easy shot vs receiving a bad call from the umpire) and the situation (e.g.,
controllability and awareness of the stressors source, time demands, etc). Anshel (1990) suggested that control is arguably the most fundamental and important issue in coping with acute stress. Consequently, in the intervention study experimental participants were instructed to use an approach oriented strategy in situations where potential control of the stressor existed (e.g. stress resulting from performance error- missing an easy shot). Research suggests that approach strategies facilitate improved performance through enhancing perceived control and perceived self-efficacy (Johnston & McCabe, 1993). The persons perceived capability for coping with the demand is improved, and the discrepancy between the demand and response capability should decrease (Johnston & McCabe, 1993). The increased use of approach strategies (albeit non-significant) by experimental participants in response to a controllable source of stress (missing an easy shot) following the intervention was therefore an encouraging finding.

Experimental participants were also instructed to use an avoidance coping strategy to ignore the sources of stress, in situations where no control over the stressor was available (e.g., stress resulting from receiving a bad call from an umpire)(Anshel, 1990; Johnston & McCabe, 1993; Miller, 1990; Mullen & Suls, 1982; Roth & Cohen, 1986). The use of an avoidance strategy enables the athlete to prevent “freezing up” and cope to prevent a performance decrement, while continuing with the task at hand (Anshel, 1990). However, experimental participants in study two did not report an increase of avoidance strategies as expected after receiving a bad call from the umpire. A speculative suggestion for the increased use of approach coping in response to an uncontrollable stressor was made. However, further research is needed to explain this unusual result in the absence of previous research.

In summary, participating in competitive sport often places the young athlete under intense physical, psychological, and emotional demands. Thus, athletes at all competitive levels must learn to cope with the demands and pressures of competition if they are to enjoy and succeed at sports (Smith & Bovbjerg, 1989). The adolescent and
adult research suggests the acquisition and development of coping strategies (cognitive and behavioural) is critical to the athletes' efforts to manage stress (Compas, 1987; Crocker et al., 1988; Gould et al., 1993a; Madden et al., 1990; Smith, 1986). Indeed, the effective management of stress in adolescent athletes can reduce injury, enhance performance, and prevent premature burnout (Dunlap & Berne, 1991). Study two, provided partial support for the effectiveness of a stress management program in reducing the negative influence of acute stress for young athletes and increasing positive aspects of the competition experience. Stress management recipients reported a more enjoyable sport experience following the intervention, with significant increases in the level of fun experienced, pride in their performance and non-significant increases on other global measures of the competition experience (e.g., enjoyment, satisfaction, effort, and desire to continue playing).

**Limitations and Future Directions**

A potential limitation in the present research was the use of a retrospective self-report methodology to assess athletes cognitions and emotions and actions. Research has highlighted several methodological problems related to self-report measures including social desirability effects and falsification, language ambiguity, and memory difficulties in trying to recall past stressful events (see Folkman & Lazarus, 1985; Larsson, Kempe & Starrin, 1988). However, it has been acknowledged that for many types of psychological processes, self report remains the only way to obtain information (Crocker, 1992). These issues were minimised in the present research by getting participants in study 1 to report on recent stressors (i.e., within the last 2 weeks) and asking participants in study 2 to report on how they usually respond to acute stressors.

Researchers have suggested that methods such as direct observation and physiological assessment may help verify some self-report items (e.g., Auerbach, 1989; Folkman & Lazarus, 1985). However, researchers acknowledge that the inconsistent
correlations discovered between these three response modes and the financial and technical difficulties associated with collecting subjective, physiological, and behavioural data simultaneously, has meant the continued use of self-reports in field research (e.g., Cook, 1985; Crocker et al, 1988). Ultimately self-report requires verification by other methods. The use of coaches to verify the effectiveness of coping skills, and the changes in performance, is a possibility that could be examined in future research.

Several researchers have criticised the use of laboratories for conducting stress and coping research because of the difficulty experienced in creating tasks that resemble stressful encounters in real life and, thus, induce real affective states (Larsson et al., 1988; Lazarus & Folkman, 1984). Thus, as Larsson and colleagues note, while naturalistic stressful situations are usually much less controllable than laboratory stressful tasks, the external validity associated with his methodological approach allows that any findings can often be generalised to other populations. Thus, a strength of the present studies was their being conducted in a field setting.

Methodological limitations specific to the intervention study were also noted. One potentially important variable that was not examined or controlled for in the intervention study was the effect of coaching. There were several coaches involved in the present study, including junior coaches for each team (under 18 yrs) and a senior supervising coach for both teams, each with their own view of the role of psychological factors in athletic training. How these views were communicated or actualised in their work with the athletes may have influenced the results.

According to Stevens (1986) small sample sizes are an inherent problem in field studies and the present study was no exception. In particular, the small number of participants in the intervention study limited the generalisability of the conclusions drawn from the findings (Cogan & Petrie, 1995). In addition, a number of tests were conducted in the intervention study and no correction was made for type 1 error because of the exploratory nature of the research. The possibility of type 1 error was therefore increased.
Researchers acknowledge that interventions in applied settings operate within logistical constraints and the benefits associated with field research usually come at the expense of internal limitations (Campbell, 1987; Kerr & Leith, 1993). However, these difficulties often remain unavoidable in field research.

**Future research**

The limitations of the present research provide directions for future research. Future research could advance the study of the effectiveness of stress management training programs for young athletes by incorporating larger samples, examining fewer variables and running longer interventions. Mace (1990) in his review of cognitive behavioural interventions in sport, noted that more positive results were obtained in those studies employing intervention programs lasting as long as 16 weeks. Future intervention studies should bear this in mind. The influence of stress management programs on an athlete’s performance in practice sessions currently is unknown (Kerr & Leith, 1993). However, an intervention that lasts over several months could identify whether such a program can help athletes in practice as well as competition (Kerr & Leith, 1993). In summary, interventions running for a longer period of time may provide valuable information in determining the length of time needed to learn new coping skills and the benefits of an intervention on practice as well as competition experience.

It would be advantageous in future studies to include objective and reliable performance measures along with self-report measures. Parfitt, Jones and Hardy (1990) suggest providing coaches with objective data about different aspects of a players performance during competition may be appropriate. For example, an objective analysis of a field hockey game could include how many times a player made successful or unsuccessful passes, how many goals the players scores, how many shots were on target/off target, or successful/unsuccessful tackles. However, as Crocker (1989a) suggests the difficulty with performance measures is that they are often confounded by the opponents...
According to Crocker (1989a), a critical dilemma that pertains to evaluating any psychological intervention is program adherence. During the intervention study, adherence was facilitated through homework assignments for experimental participants. However, no external monitoring was in place upon program completion. Thus, future research could explore Meichenbaum's (1985) suggestion and include intermittent follow-up sessions to help maintain the acquired coping skills.

The small number of acute stressors retained for the second study which incorporated the stress management program allowed that participants were not overwhelmed with too great a number of coping skills to learn, and enabled the researcher to more accurately note whether the actual strategies were effective. However, it remains for future research to replicate findings in response to the stressors explored in the present study and explore the effectiveness of stress management programs in response to other sources of acute stress experienced during competition. Future studies are needed to clarify the effectiveness of stress management programs in reducing the deleterious effects of acute stress experienced by child athletes in response to other stressors.

**Theoretical and Practical Implications for Future Research**

The findings of these two studies make an important contribution in not only identifying the sources of acute stress experienced by child athletes in field hockey, but also the development of stress management programs for child athletes in response to the experience of acute stressors. Researchers suggest that identifying the sources of stress of a selected population, is the essential first step in the design of an effective stress management program (e.g., Meichenbaum, 1985; Smith, 1980; Taylor, 1992). The absence of previous research in the area of coping with acute stressors for children in sport necessitated an identification of the sources of stress experienced by child athletes in field hockey and as assessment of the suitability of teaching young athletes coping ability.
strategies based on the transactional model of stress. The present study addressed both of these concerns.

Previous research has advocated the teaching of stress management techniques as a routine in response to stressors (Anshel, 1990b; Boucher & Rotella, 1987, Smith, 1980). Consequently, experimental participants in study 2 were taught to learn, rehearse and finally implement an integrated coping response following acute stress experiences during competition. This routine permitted participants to respond rapidly and efficiently to the source of acute stress with little disruption to immediate performance. The benefits of such a practiced coping response enables greater parsimony and speed in responding to the acute stress experienced. Consequently, future research should examine the benefits of similar routines for athletes, irrespective of the sport they participate in.

The present findings supported the need to incorporate both manipulation checks and motivational control groups to help validate any improvements observed following an intervention program. Future research remains needed to investigate the effects of each individual component of the intervention program on performance to determine whether observed changes in performance result from specific components of the program or the interaction of these components (Kerr & Leith, 1993). For example, were performance changes due to a greater awareness of the components of stress (e.g., in the transactional model), less cognitive interference (e.g., stopping negative thoughts), managing physiological arousal (e.g., centering), better attentional focus or an interaction of these components, or an unidentified variable.

The influence of gender was not examined in study two in relation to the stress management intervention. However, findings from study one support previous findings with adolescents and adults that gender differences exist in coping responses and males use more approach and less avoidance coping than females (e.g., Folkman & Lazarus, 1980,1982; Frydenberg & Lewis, 1991; Miller & Kirsch, 1987; Stone & Neale, 1984). The effect of gender was not examined in the intervention study, due to the limited
sample size. Consequently there remains a need for research to examine the influence of
gender in coping responses from children in sport.

The results of the present thesis have implications for researchers interested in
furthering their understanding of the sources of acute stress experienced by child athletes
when competing and the coping responses employed in response to them. It also has
implications for practitioners committed to providing individualised coping strategies for
athletes to allow them to manage acute stress more effectively. Following the procedure
undertaken in the present research, future research in sport psychology should involve the
generation of intervention programs for child athletes that take into account the specific
characteristics and demands of a particular sport. Participating in programs such as these
might allow the athlete to reach his or her performance potential and allow them to gain
more enjoyment and satisfaction from their sport involvement.

In conclusion, the present study provided an initial investigation of the
experiences of acute stress and coping responses employed by child athletes in
competitive sport. The present research provided partial support for the effectiveness of a
stress management intervention for child athletes in responding to the sources of acute
stress experienced in competition. This information can assist future researchers in their
efforts to examine coping responses to acute stress for child athletes, and the use of an
intervention program specifically targeted to those stressors. Indeed, given the prevalence
and inevitability of acute stress in sport and the knowledge that effective employment of
coping techniques “may decrease the rate of dropping out of sport and allow more sport
competitors to reach their performance potential,” (Anshel, 1990, p. 79) the need for
further research in this area is essential.
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of Sport Psychology, 13, 154-162.


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APPENDICES
APPENDIX A

Consent Form Study 1
INFORMED CONSENT FORM FOR RESEARCH PROJECT

UNIVERSITY OF WOLLONGONG, DEPARTMENT OF PSYCHOLOGY

Researcher: Jennifer Delany (ph 042, 28 7679)

I, ___________________________ (please print name here) agree to voluntarily participate in a study sponsored by the Department of Psychology, University of Wollongong. I understand that this study involves participating in a personal interview of about 20 minutes concerned with my thoughts on how I react to unpleasant events experienced during the game while competing on my team. There are no right or wrong answers, only feelings about my experiences. I understand that all my answers will be strictly confidential and will not be shared with others. I also understand that my name will not be used to identify me. The interview may be held either in person or over the phone, at a time agreeable to me and the interviewer. I understand I will be allowed to withdraw from this study at any time without penalty. Should I remain in this study, I will be given the opportunity to obtain in writing the findings of this study.

I have read and understood the above, and all of my questions have been answered to my satisfaction. I also understand that I may ask additional questions throughout the study. I understand that this study has been approved by the University of Wollongong’s Human Research Ethics Committee. Should I have any questions about this study, I may contact the interviewer, Ms Jennifer Delany at (042) 287679, the department’s academic supervisor of this study, Associate Professor Mark Anshel, at (042) 213732, or the University’s Human Research Ethics office (042) 214457.

Date: _______________ Athlete’s Name (please print): _______________
Signature: ___________________________________ Phone Number: __________________________

As the athlete’s parent, I agree to allow my child to be interviewed by the University of Wollongong postgraduate student, Ms Jennifer Delany, and agree with the above description.

Parents Name (please print): ____________________________
Signature: ___________________________________ Date: ___________ 1996
Investigator’s Signature: ___________________________ Date: ___________ 1996
APPENDIX B

Interview Form Study 1
INTERVIEW: STUDY 1

OKAY (child’s name), before we start, let me tell you a little bit about this interview. I am going to ask you some questions and I want you to answer them in your own words - and I will have to write down everything that you say, not summarising or shortening anything. It is very important that I get everything that you say, so I am going to use a tape-recorder to help me, and that way I don’t have to write as much down. These tapes will only be used by me, to help my notes, no-one else will listen to this tape. OKAY? YES/NO (If NO, read again).

I am going to ask you to think about your last few games where you felt, really unpleasant, really stressful, and I am going to ask you some questions about them. OKAY. By stressful I mean those times during the game when you were really upset, worried, annoyed by nasty and unpleasant things. I want you to take your time to think about the questions and the answers. Remember, there are no right or wrong answers - (only what you think and feel is important), and everything you tell me is confidential. That means, it will only be used by me, and I will not have your name on this paper, only your age and your sex. (“SEE” show child interview form)
GENERAL INFORMATION

Now (child’s name) first, I want to ask you some general questions about your sport.

Answer them as best as you can. Remember, if you have any questions, just ask me and I will try to answer them for you. OKAY.

What age are you now ______ (years) Sex ________

How long you have played hockey? ______________________________________

What position do you play? ____________________________________________

Is this your usual position? Yes/No (If NO, what position do you usually play?)

What other sports do you play? _________________________________________

(Child’s name) I’m going to ask you about the times during the game when you felt really upset, annoyed, worried. I only want you to tell me the really upsetting things. Look at this list and I will show you what I mean.

So, if we use a scale of 1-5 to describe how upsetting, how annoying you find something, then, a number 1 - means it did not upset you at all, and a number 5 - means it was very upsetting for you. (SEE, like this - show child).

So a number 3 - would be in the middle, so it would be upsetting but not greatly so. Do you understand this scale? YES/NO (If NO, repeat definition again)

[OKAY: Using this scale, what would a number 2 mean/ what about a number 4]

So, when you tell me about those times during the game where you felt really upset, annoyed, I want you to only tell me about those situations you would call a number 4 or 5 on this scale.
EXPERIENCE OF STRESS

1. not at all stressed
2. a little bit stressed
3. somewhat stressed
4. quite a bit stressed
5. very stressed
PART 1. Identify acute stressors

Good (child’s name) now, Do you remember your last game. YES/NO.

What team did you play? _______________. Did you play YES/NO.

(Child’s name) I’d like you to look at this list for me and tell me if anything on this list, really upset, annoyed, worried you during your last game. Can you tell me an example of this.

What about the game before that, who did you play? _______________. Did you play? YES/NO. (Child’s name) you are doing well. Now I’d like you to look at this list again for me and tell me if anything on this list, really upset, annoyed, worried you during that game. Can you tell me an example of this.

Now, think about a few games before that. I’d like you to look at this list for me again, and tell me if anything on this list, really upset, annoyed, worried your last few games. Can you tell me an example of this?

[PROBES: GOOD, what else? Anything else?]
PART 2. Appraisal of acute stress

Very good (child’s name) Now, I’d like you to look at this list here and tell me which word best describes the way you felt in this situation. Very good. Now each time you describe a situation during the game where you felt really upset, annoyed, worried. I want you to tell me from this list which word best describes “how you felt”.

Loss - where you felt hurt, disappointed or lost something of value

Threat - where you felt some kind of threat or danger
   where you were worried about how things would turn out

Challenge - where you felt some challenge or big opportunity
PART 3. Coping (thought/action responses)

(Child’s name), you are doing well and we are almost finished. Now, you have told me the things that upset you during the game, and you have also told me which of these words best describes how you felt in that situation.

What I want you to do now is think about the list of things you told me that upset you during the game. Is there something that you think about or do during the game that makes you feel better and not as upset. YES/NO. Tell me some of the things you might think about...... GOOD, anything else?

[PROBES: How did you handle that? What did you do next?]

OKAY, (child’s name) we are almost finished. Look at this list for me and tell me if you do any of these things when you are really upset, to make yourself feel better and not as upset.

(Child’s name), we’re finished now, and you did very well. THANK YOU for helping me with this study.
<table>
<thead>
<tr>
<th>SITUATIONS/CIRCUMSTANCES</th>
<th>INTERPRETATION</th>
<th>THOUGHT/ACTION RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sources of Stress List

The pain of a sudden injury

Making a physical game error (e.g., lose the ball)

The sudden success of the opposition

Hearing unpleasant comments from the sideline (e.g., booing)

Hearing unpleasant comments from the coach (e.g., shouting, criticising)

Hearing unpleasant comments from the opposition (e.g., laughing)

Hearing unpleasant comments from team-mates (e.g., teasing, criticising)

Receiving a bad call from the umpire

Having a bad game score

Cheating by the opposition
List of Coping Strategies

I tried to concentrate and focus on what I had to do next
I thought about what I would do next

I talked to myself to build up my confidence
I talked to myself to calm down and to feel better

I blamed myself for the problem
I criticised or lectured myself

I tried to see the situation as a positive experience
I tried to see the benefits of the situation
I tried to look on the bright side of things

I thought it was bad luck
I tried to forget the whole thing
I went on as if nothing happened
I didn’t let it get to me—refused to think about it too much
I refused to believe it had happened

I tried to keep my feelings to myself
I asked a teammate for advice
I made a promise to myself things would be different next time

I accepted it since nothing could be done
I wished I could change what had happened or how I felt
I daydreamed or imagined a better time or place than what I was in
I wished the situation would go away or somehow be over

I prayed
I thought about how a person I admire would handle this situation and
used that as a model
I tried to see things from the other person’s point of view
I reminded myself how much worse things could be

I talked to my teammates
APPENDIX C

Consent For Study 2
INFORMED CONSENT FOR RESEARCH
UNIVERSITY OF WOLLONGONG, DEPARTMENT OF PSYCHOLOGY
WOLLONGONG, NSW, 2500

Researcher: Jennifer Delany, Postgraduate student, Department of Psychology

I, ________________ agree to participate in a study conducted by the Department of Psychology, University of Wollongong. I understand that this study involves (1) completing a (questionnaire/structured style interview) concerned with my thoughts on how I react to unpleasant events experienced during the game while competing on my team, and there are no right or wrong answers, only my feelings about my experiences, and (2) meeting with Jennifer Delany (the researcher) and other members of my team on a regular basis (once a week for 10 weeks) to learn about mental skills for younger athletes in sport.

I understand that all my answers will be strictly confidential, and will not be shared with others. I also understand that my name will not be used to identify me. Instead, information will be number coded. I understand that all meetings/phone calls will be conducted by a full time MA (Hons) student from the University of Wollongong who is familiar with all the procedures. I also understand that I am allowed to withdraw from the study at any time, if I choose.

I have read and understood all of the above information, and all of my questions have been answered to my satisfaction. I also understand that I can ask any other questions throughout the study. I understand that this study has been approved by the University of Wollongong’s Human, Research Ethics Committee. If I have any questions about this study I know that I can contact the Secretary of the Human Research Ethics Committee on (0242) 214457, the interviewer/trainer Jennifer Delany (0242) 287679, or the department’s academic supervisor of this study, Associate Professor Mark Anshel (0242) 213732.

Athlete’s Name (please print): ________________ Athlete’s Signature: ________________
Home Phone Number: ________________ Dated: ________________

As the athlete’s parent I agree to allow my child to be interviewed and attend the mental skill sessions run by the University of Wollongong postgraduate student, Jennifer Delany. I have also read and understand the above information.

Parent’s Name (please print): ________________
Parent’s Signature: ________________ Dated: ________________
Investigator’s Signature: ________________ (Jennifer Delany)
APPENDIX D

Questionnaire (Pre/Post): Study 2
Athlete ID Number [ ]

Please tick one:     Male _______  Female _______

Your date of birth:   _______ / _______ / _______
                      Day     Month     Year

This questionnaire has three parts (Part A, Part B, Part C). It looks at two things that can happen during a game of competition hockey to really upset and annoy you and what you do about them. There are no right or wrong answers - only what you think and feel is important. Please do not talk to others about your answer - and answer as honestly as possible.

For some of the question you will need to (a) you will need to circle one number from a choice of answers, and (b) in some parts you will need to write a couple of words.

Everything that you write is confidential. It does not have your name on it, and will only be seen by me. When you have finished the questions, put them in the envelope you have in front of you. We will go through the questions as a group. I will read out the question and then you will need to answer them. If you have any questions please ask me, and I will try to answer them for you.
Examples:
PART A: If you USUALLY experience VERY strong feelings of stress when you get injured, you would circle 5, because this means that it was very stressful for you.

Example:
PART B: If you do NOT USUALLY experience this stressor VERY often, you would circle 1, because this means that you do not experience this stressor very often. OKAY. Now, lets go through the list. I will read each stressor and you need to circle the number that best describes (A) How stressful this USUALLY if for you, and (B) How often you usually experience this stressor. Remember, there are 2 parts to every situation (stressor). So you will need to circle a number on each part.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a lot</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>PART A [how much does it stress you]</th>
<th>PART B [how often does it stress you]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Somewhat stressful</td>
</tr>
<tr>
<td>1. Making a physical game error (e.g., losing the ball)</td>
<td>1</td>
</tr>
<tr>
<td>2. Making a mental game error (e.g., losing concentration)</td>
<td>1</td>
</tr>
<tr>
<td>3. The pain of injury</td>
<td>1</td>
</tr>
<tr>
<td>4. Receiving a “bad” from an umpire or referee</td>
<td>1</td>
</tr>
<tr>
<td>5. Hearing unpleasant comments from others (e.g., coach parents, opponents, spectators on sideline, teammates)</td>
<td>1</td>
</tr>
<tr>
<td>6. Teammates making an error (or mistake) or not performing well</td>
<td>1</td>
</tr>
<tr>
<td>7. My opponent has just cheated</td>
<td>1</td>
</tr>
<tr>
<td>8. Success of your opponent (e.g., scoring a goal)</td>
<td>1</td>
</tr>
</tbody>
</table>
PART A: Incident 1 After missing a very easy shot

1. How did you feel?

The words below describe feelings. Look at each word and ask yourself how much you felt that word after missing a very easy shot. Then draw a circle around the one number that best describes how you felt. For example, if you felt very relaxed after missing a very easy shot you would circle number 5 (very much). If you felt only a little bit relaxed after missing a very easy shot you would circle number 2 (a little bit). Make sure you circle an answer for every word.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a lot</th>
<th>Very much</th>
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</table>

| After missing a very easy shot | Peaceful | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Jittery  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Calm     | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Unhappy  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Relaxed  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Tense    | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Uneasy   | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Restful  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Happy    | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Uptight  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Cheerful | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Nervous  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Pleasant | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Worried  | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Comfortable | 1 | 2 | 3 | 4 | 5 |
| After missing a very easy shot | Troubled | 1 | 2 | 3 | 4 | 5 |
PART A: (continued)

After missing a very easy shot:

Answer the following questions by writing the one number from the scale below that describes how you feel after missing a very easy shot:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a lot</th>
<th>Very much</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<td>5</td>
</tr>
</tbody>
</table>

2. How much does missing a very easy shot usually upset/annoy you? ______

3. How often does missing a very easy shot usually upset/annoy you? ______

4. After missing a very easy shot how much did you feel positive, that is, you felt pumped up, confident, alert, ready? ______

5. After missing a very easy shot how much did you feel negative, that is, you felt disappointed, uncertain, worried, anxious? ______

6. How much did you believe that you could do something after missing the easy shot to make yourself feel better and get on with your game? ______

7. Look at the list of things you can do when you have missed a very easy shot. From this list circle ALL the things you usually try to do to make yourself feel better when you have missed a very easy shot. Circle those numbers below:

1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26

8. How much did you think all of these things you were trying to do really helped you in your game (help you play better/ concentrate/ or make you feel less annoyed)? ______

9. How much did you think that all of these things you were trying to do really upset you in your game (caused you problems, get distracted, lose concentration, or make you feel more annoyed)? ______
PART A (continued)

Answer the following questions by choosing the one number that best describes how you often feel after you have missed a very easy shot.

1. How much do you usually feel annoyed with yourself after missing a very easy shot?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a lot</th>
<th>Very much</th>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please circle the one number that describes how much you agree or disagree with the following questions.

2. I often feel guilty about missing a very easy shot?

<table>
<thead>
<tr>
<th></th>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
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3. I often feel embarrassed after missing a very easy shot?

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4. I often feel angry with myself after missing a very easy shot?

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5. After missing a very easy shot I often feel unhappy with myself?

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<th>Very strongly agree</th>
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<th>Somewhat disagree</th>
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</table>

6. After missing a very easy shot I usually try not to think about it and get on with the game?

<table>
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<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
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</table>

7. I usually try and work out what I did wrong after missing a very easy shot so it doesn’t happen again?

<table>
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<tr>
<th></th>
<th>Very strongly agree</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Somewhat disagree</th>
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</tbody>
</table>

Close your eyes for a minute and try to imagine you have missed a very easy shot. It may help you to remember when you have missed a very easy shot in the past. I want you to really think about how you felt and what you were thinking after you missed the easy shot. Write down the first four things that come into your head. Remember there are no right or wrong answers.

1. I ____________________________
2. I ____________________________
3. I ____________________________
4. I ____________________________
PART B: Incident 2 After receiving a bad call from the umpire

1. How did you feel?

The words below describe feelings. Look at each word and ask yourself how much you felt that word after missing a very easy shot. Then draw a circle around the one number that best describes how you felt. For example, if you felt very relaxed after getting a very bad call from the umpire you would circle number 5 (very much). If you only felt a little bit relaxed after getting a bad call from the umpire you would circle number 2 (a little bit). Make sure you circle an answer for every word.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a lot</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Peaceful</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Jittery</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Calm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Unhappy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Tense</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Uneasy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Restful</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>After receiving a bad call from the umpire</td>
<td>Uptight</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Cheerful</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>After receiving a bad call from the umpire</td>
<td>Nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Worried</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Comfortable</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After receiving a bad call from the umpire</td>
<td>Troubled</td>
<td>1</td>
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</table>
PART B: (continued)

After receiving a very bad call from the umpire:

Answer the following questions by writing the one number from the scale below that describes how you feel after getting a very bad call from the umpire:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a lot</th>
<th>Very much</th>
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2. How much does receiving a very bad call from the umpire usually upset/annoy you? ______

3. How often does receiving a very bad call from the umpire usually upset/annoy you? ______

4. After receiving a very bad call from an umpire how much did you feel positive, that is, you felt pumped up, confident, alert, ready? ______

5. After receiving a very bad call from an umpire how much did you feel negative, that is, you felt disappointed, uncertain, worried, anxious? ______

6. How much did you believe that you could do something after receiving the bad call from the umpire and get on with your game? ______

7. Look at the list of things you can do when you have received a very bad call from the umpire. From this list circle ALL the things you usually try to do to make yourself feel better when you have received a bad call from the umpire. Circle those numbers below:

1 2 3 4 5 6 7 8 9 10 11 12 13
14 15 16 17 18 19 20 21 22 23 24 25 26

8. How much did you think that all of these things you were trying to do really helped you in your game (help you play better/ concentrate/ or make you feel less annoyed)? ______

9. How much did you think that all of these things you were trying to do really upset you in your game (caused you problems, get distracted, lose concentration, or make you feel more annoyed)? ______
PART B (continued)

Answer the following questions by choosing the one number that best describes how you **often** feel after you have after you get a very bad call from the umpire

1. How much do you usually feel annoyed with yourself after getting a very bad call from the umpire?

   Not at all  A little bit  Moderately  Quite a lot  Very much

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   Please circle the one number that describes how much you agree or disagree with the following questions

2. I often feel guilty about getting a very bad call from the umpire?

   Very strongly disagree Strongly disagree Somewhat disagree Somewhat agree Strongly agree Very strongly agree

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3. I often feel embarrassed after getting a very bad call from the umpire?

   Very strongly agree Strongly agree Somewhat agree Somewhat disagree Strongly disagree Very strongly disagree

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4. I often feel angry with myself after getting a very bad call from the umpire?

   Very strongly disagree Strongly disagree Somewhat disagree Somewhat agree Strongly agree Very strongly agree

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5. After getting a very bad call from the umpire I often feel unhappy with myself?

   Very strongly agree Strongly agree Somewhat agree Somewhat disagree Strongly disagree Very strongly disagree

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6. After getting a very bad call from the umpire I usually try not to think about it and get on with the game?

   Very strongly disagree Strongly disagree Somewhat disagree Somewhat agree Strongly agree Very strongly agree

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7. I usually try and work out what I did wrong after getting a very bad call from the umpire so it doesn’t happen again?

   Very strongly agree Strongly agree Somewhat agree Somewhat disagree Strongly disagree Very strongly disagree

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Close your eyes for a minute and try to imagine you have received a **very bad call from the umpire**. It may help you to remember when you have had a **bad call from the umpire** in the past. I want you to really think about how you felt and what you were thinking after you **received the bad umpire call**. Write down the first four things that come into your head.

1. I ____________________________
2. I ____________________________
3. I ____________________________
4. I ____________________________
**PART C:** Answer these questions by putting one circle around the number that best describes how you feel. Remember there are no right or wrong answers. All questions refer to your competition hockey games.

1. **Sometimes I don’t put as much effort as I could into hockey games**
   
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2. **Compared to others in your team how much effort do put into hockey games**
   
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<th>Much more</th>
<th>Slightly more</th>
<th>Neutral</th>
<th>Slightly less</th>
<th>Much Less</th>
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3. **Sometimes I don’t try as hard as I could when playing hockey**
   
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<th>Very strongly disagree</th>
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<th>Somewhat agree</th>
<th>Strongly agree</th>
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4. **Sometimes I don’t enjoy playing hockey**
   
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<th>Very strongly agree</th>
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<th>Somewhat agree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
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5. **I always have fun playing hockey**
   
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<th>Somewhat agree</th>
<th>Strongly agree</th>
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6. **Compared to others in your team how well do you **USUALLY** play hockey**
   
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<th>Much more</th>
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<th>Neutral</th>
<th>Slightly less</th>
<th>Much Less</th>
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7. **Compared to others in your team how much do you want to keep playing hockey**
   
<table>
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<th>Much less</th>
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<th>Neutral</th>
<th>Slightly more</th>
<th>Much more</th>
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8. **I am always proud of how I play hockey**
   
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<th>Somewhat agree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
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9. **Sometimes I don’t feel like I have played as good as I can in hockey**
   
<table>
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<th>Very strongly disagree</th>
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<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
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10. **I am always satisfied with how I play hockey**
    
    | Very strongly agree | Strongly agree | Somewhat agree | Somewhat disagree | Strongly disagree | Very Strongly disagree |
    |---------------------|---------------|---------------|------------------|------------------|------------------------|
    | 1                   | 2             | 3             | 4                | 5                | 6                      |
QUESTION 7 (Parts: A and Part B)

These are some of the things you might do
when you are really upset, annoyed, stressed

1. I tried to concentrate on what I had to do next
2. I thought about what I would do next
3. I talked to myself to build up my confidence
4. I talked to myself to calm down and to feel better
5. I blamed myself for the problem
6. I criticised myself
7. I tried to see the situation as something positive
8. I tried to look on the bright side of things
9. I tried to forget the whole thing
10. I went on as if nothing happened
11. I didn’t let it get to me and tried not to think about it too much
12. I tried to relax
13. I talked to my team mates
14. I asked a teammate for advice
15. I made a promise to myself things would be different next time
16. I tried to control my breathing
17. I accepted it since nothing could be done
18. I reminded myself how much worse things could be
19. I didn’t do anything
20. I wished I could change what had happened or how I felt
21. I wished the problem would go away
22. I prayed
23. I yelled out something
24. I tried to work out what I had done wrong
25. I worried about what had happened
26. I went over in my head how I could change the situation so it wouldn’t happen again
APPENDIX E

Post Intervention Knowledge Test Questionnaire: Experimental Group
INTRODUCTION

When people are really stressed and upset by something that happens in a game of hockey they can do lots of different things to make themselves feel better and not as stressed.

On the next few pages are some questions asking you about
(1) the things you do when you are stressed and what you do to make yourself feel better when you are stressed and,
(2) the things you have learnt from doing this program.

This is your chance to say what you think about doing the program. Please answer the questions as honestly as possible, and if you have any questions please ask. Remember there are no right or wrong answers.
1. When you are really stressed and upset by something what are some of the things that can happen in your body: _____________________

2. When you are stressed and really upset by something what are some of the things you think or say about yourself in your head: _____________________

3. When you are really upset and stressed by something in game of hockey what are some of the things you might be feeling: _____________________

4. When you are really upset and stressed about something in a game of hockey what are some of the things you might end up doing: _____________________

5: List 2 things that can happen when you think or say negative things about yourself when playing hockey

1. _____________________

2. _____________________

6. You have just missed a very easy shot in hockey and are very upset and annoyed by your mistake: You are very angry with yourself and keep thinking about how you missed the shot over and over.

List the 3 things you would do to make yourself feel better and not as upset

1. _____________________

2. _____________________

3. _____________________

7. You have just had a very bad call from the umpire in a hockey game: he has given the ball to the other team when it should have been yours and are very upset and annoyed by the umpires mistake. You keep thinking about his mistake over and over in your head.

List the 3 things you would do make yourself feel better and not as upset

1. _____________________

2. _____________________

3. _____________________

8. List all the things you usually do to try and make yourself feel better after something happens to upset/ stress you during a game (what do you do) _____________________
9. List the things you will do to try and make yourself feel better in the future after something happens to upset you during a game

10. List 2 ways you can tell yourself to stop negative thoughts that you are having during a game of hockey
   1. ____________________________________________________________
   2. ____________________________________________________________

11. List one quick and easy thing you can do to relax and calm yourself when you are upset and stressed in a game of hockey

12. When you are breathing deeply
   - How do you breath in _________________________________________
   - How do you breath out _________________________________________
   - What sound does it make when you are breathing out deeply ______
   - When breathing deeply what part of your body moves in and out ______

13. How does a person practise imagery?________________________________

14. Why does using imagery in sport help you?______________________________

15. List 2 things you can use imagery in sport for
   1. ____________________________________________________________
   2. ____________________________________________________________

16. When you are doing imagery the right way- what senses should you be using ______

17. When a person is sweating a lot, their heart is beating really fast, they are breathing faster, their legs feel like jelly, what does it usually mean/ or what is it usually a sign of: THEY ARE ________________

18. **In the future I will use my signal to stop having negative thoughts in hockey?**

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19. In the future I will use deep breathing to calm myself and clear my mind when I am very upset or stressed about something?

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<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

20. In the future I will practice deep breathing?

<table>
<thead>
<tr>
<th>Very strongly agree</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
<th>Very Strongly disagree</th>
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<td>6</td>
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</tbody>
</table>

21. In the future I will change my negative thoughts to more positive thoughts?

<table>
<thead>
<tr>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
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<td>5</td>
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<td>3</td>
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<td>1</td>
</tr>
</tbody>
</table>

22. If something has happened in the game to really upset or stress you and you DO NOT have any control over it - what is the best thing to do? ________________________________

23. When you DO have control over something that has upset you in a game, it means that you can ________________________________ it

24. In the future I will use the things I learnt in this training program in other sports

<table>
<thead>
<tr>
<th>Very strongly agree</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
<th>Very Strongly disagree</th>
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</tbody>
</table>

List the things you think you will use ________________________________

25. In the future I will try to use the things I learnt in this program to help me when I am upset by things at school?

<table>
<thead>
<tr>
<th>Very strongly disagree</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
<th>Very strongly agree</th>
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</table>

List the things you think you will use ________________________________

26. In the future I will use the things I learnt in this program when things are upsetting me at home?

<table>
<thead>
<tr>
<th>Very strongly agree</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
<th>Very Strongly disagree</th>
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</tbody>
</table>
List the things you think you will use

Please rate how useful you found each of the meetings. Circle one number that best describes how useful/helpful you found each topic.

<table>
<thead>
<tr>
<th></th>
<th>1: not at all useful</th>
<th>2: a little useful</th>
<th>3: moderately useful</th>
<th>4: quite a lot useful</th>
<th>5: very much useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>* How to stop negative thoughts using a signal</td>
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<tr>
<td>1</td>
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<td>a little useful</td>
<td>moderately useful</td>
<td>quite a lot useful</td>
<td>very much useful</td>
</tr>
<tr>
<td>* How to change negative thoughts to more positive ones</td>
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<tr>
<td>5</td>
<td>very much useful</td>
<td>quite a lot useful</td>
<td>moderately useful</td>
<td>a little useful</td>
<td>not at all useful</td>
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<tr>
<td>* How to use deep breathing to relax and calm yourself when upset in a game</td>
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<tr>
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<td>not at all useful</td>
<td>a little useful</td>
<td>moderately useful</td>
<td>quite a lot useful</td>
<td>very much useful</td>
</tr>
<tr>
<td>* Working out if you have control over something that has upset you and if you can change it</td>
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</tr>
<tr>
<td>5</td>
<td>very much useful</td>
<td>quite a lot useful</td>
<td>moderately useful</td>
<td>a little useful</td>
<td>not at all useful</td>
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<tr>
<td>* How to use everything together when something has upset you</td>
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<tr>
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<td>very much useful</td>
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<tr>
<td>* How much have you enjoyed doing this training program?</td>
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<tr>
<td>1</td>
<td>not at all</td>
<td>a little</td>
<td>moderately</td>
<td>quite a lot</td>
<td>very much</td>
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</table>
APPENDIX F

Post Intervention Knowledge Test Questionnaire: Control Group
INTRODUCTION

When people are really stressed and upset by something that happens in a game of hockey they can do lots of different things to make themselves feel better and not as stressed.

On the next few pages are some questions asking you about

(1) the things you do when you are stressed and what you do to make yourself feel better when you are stressed and,

(2) the things you have learnt from doing this program.

This is your chance to say what you think about doing the program. Please answer the questions as honestly as possible, and if you have any questions please ask. Remember there are no right or wrong answers.
1. When you are really stressed and upset by something what are some of the things that can happen in your body: _______________________________

2. When you are stressed and really upset by something what are some of the things you think or say about yourself in your head: ____________________________________________

3. When you are really upset and stressed by something in game of hockey what are some of the things you might be feeling: ________________________________

4. When you are really upset and stressed about something in a game of hockey what are some of the things you might end up doing: ________________________________

5: List 2 things that can happen when you think or say negative things about yourself when playing hockey
   1. ____________________________________________
   2. ____________________________________________

6. You have just missed a very easy shot in hockey and are very upset and annoyed by your mistake: You are very angry with yourself and keep thinking about how you missed the shot over and over.
   List the 3 things you would do to make yourself feel better and not as upset
   1. ____________________________________________
   2. ____________________________________________
   3. ____________________________________________

7. You have just had a very bad call from the umpire in a hockey game: he has given the ball to the other team when it should have been yours and are very upset and annoyed by the umpires mistake. You keep thinking about his mistake over and over in your head.
   List the 3 things you would do make yourself feel better and not as upset
   1. ____________________________________________
   2. ____________________________________________
   3. ____________________________________________

8. List all the things you usually do to try and make yourself feel better after something happens to upset/ stress you during a game (what do you do) ________________________________
9. List the things you will do to try and make yourself feel better in the future after something happens to upset you during a game

10. List 2 ways you can tell yourself to stop negative thoughts that you are having during a game of hockey
   1. 
   2. 

11. List one quick and easy thing you can do to relax and calm yourself when you are upset and stressed in a game of hockey

12. What is a goal in sport?

13. List 2 reasons why people make goals in sport?
   1. 
   2. 

14. Why is setting a goal in sport a good thing to do?

15. List 2 other things you need to do after you choose what your goal is going to be
   1. 
   2. 

16. Why is it important to write down your goals?

17. When you are setting yourself a goal - how difficult/hard should you make it?

18. List 2 reasons why having a routine in sport is a good thing
   1. 
   2. 

19. In the future I will set goals for myself when I want to learn something new or do something better

<table>
<thead>
<tr>
<th>Response</th>
<th>1</th>
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<th>3</th>
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<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very strongly agree</td>
<td>Strongly agree</td>
<td>Somewhat agree</td>
<td>Somewhat disagree</td>
<td>Strongly disagree</td>
<td>Very Strongly disagree</td>
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</tbody>
</table>

20. In the future I will use the things I learnt in this program in other sports?

<table>
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<tr>
<th>Response</th>
<th>1</th>
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<th>3</th>
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<td>Strongly agree</td>
<td>Very strongly agree</td>
<td></td>
</tr>
</tbody>
</table>

21. In the future I will you use the things I learnt in this program at school?

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<thead>
<tr>
<th>Response</th>
<th>1</th>
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<th>3</th>
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<td>Very Strongly disagree</td>
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</tbody>
</table>

22. In the future I will use the things I learnt in this program at home?

<table>
<thead>
<tr>
<th>Response</th>
<th>1</th>
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</tbody>
</table>
Please say how useful you found each of the meetings. Circle the one number that best describes how useful/helpful you found each topic.

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<tbody>
<tr>
<td>not at all useful</td>
<td>a little useful</td>
<td>moderately useful</td>
<td>quite a lot useful</td>
<td>very much useful</td>
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</table>

* Learning how to set myself a short term (weekly) goal

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<tr>
<td>not at all useful</td>
<td>a little useful</td>
<td>moderately useful</td>
<td>quite a lot useful</td>
<td>very much useful</td>
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</table>

* Learning how to set myself a medium term (6 weekly) goal

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<tr>
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<td>quite a lot useful</td>
<td>moderately useful</td>
<td>a little useful</td>
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* Learning how to start a routine of things I need to do the week before the game

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<td>moderately useful</td>
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<td>very much useful</td>
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</table>

* Learning about how to start a routine of things I need to do the day of the game

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<td>very much useful</td>
<td>quite a lot useful</td>
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</table>

* How much have you enjoyed doing this training program

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<tbody>
<tr>
<td>not at all</td>
<td>a little</td>
<td>moderately</td>
<td>quite a lot</td>
<td>very much</td>
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</table>
APPENDIX G

Stress Management Intervention Worksheets for Experimental Participants
What is stress in sport?

- a feeling you get when something has happened in a game and you are really upset, worried, or annoyed by it

What happens when you get stressed in sport?

- you don’t play as well as you usually do
- you can’t concentrate as well as usual
- you think about what upset you and not the game

Who gets stressed in sport?

- almost everyone who plays sport
  even the very best athletes get stressed sometimes
What are some of the signs of stress?

Some of the things that might happen in your body?

- sweating, heart beats faster, dry mouth + throat,
- your muscles feel stiff

Some of the things you might think when stressed?

- forgetting things, losing concentration, getting distracted

Some of the things you might feel when stressed?

- angry, annoyed, embarrassed, cranky, tired, nervous

Some of the things you might do when stressed?

- clench your fist, stomp your feet, shout out something,
- grit your teeth
What causes feelings of stress?

something happens (e.g., receiving a very bad call from the umpire)

we THINK about it a certain way (e.g., that was a really bad call)

we FEEL something (e.g., angry - this ref is no good, he’s giving the ball away)

we DO something about it (e.g., shout at the ref and get a yellow card)

DOES STRESS CHANGE?

stress depends on HOW we look at things
(what we think about them, how we feel about them, and what we do about them)

When we change the way we think about something -
we can change the way we feel about it
So if you learn to change the way you think about something, and how you feel about something, and what you do about something

"YOU CAN CHANGE HOW MUCH YOU GET UPSET or STRESSED BY SOMETHING"

What is Mental Toughness Training?

Learning to control what you do in hockey games when things happen to upset you

This is what you will be learning to do
These are some of the signs that I am getting stressed?

After missing a very easy shot: Some of the things that happen in my body are?

After missing a very easy shot: Some of the things I think are?

After missing a very easy shot: Some of the things I feel are?

After missing a very easy shot: Some of the things I do are?
These are some of the signs that I am getting stressed?

After getting a very bad call from the umpire: Some of the things that happen in my body are?


After getting a very bad call from the umpire: Some of the things I think are?


After getting a very bad call from the umpire: Some of the things I feel are?


After getting a very bad call from the umpire: Some of the things I do are?
HOMEWORK

WHAT?
1. Learning to know when you are stressed, and
2. Learning what happens to you when you are stressed.

WHY?
You need to know when something has upset you - before you do something about it.

Using the Homework sheet - Using only a couple of words

1. Write down ONE thing every day that really upsets, annoys, or stresses you. It can be something at school, sport, or anything.
2. Write down how it upset you. Use the notes from week 1 to help you remember:

* what was happening in your body
* what you were thinking
* what you were feeling
* what you did
**HOMEWORK: WEEK 2**  **THINGS THAT REALLY UPSET or STRESS ME**

<table>
<thead>
<tr>
<th>Week Day</th>
<th>Write down what happened to really upset you</th>
<th>Some of the things that happened in my body</th>
<th>Some of the things I was thinking were</th>
<th>Some of the things I was feeling were</th>
<th>Some of the things I did were</th>
</tr>
</thead>
<tbody>
<tr>
<td>THURSDAY</td>
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<td>FRIDAY</td>
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<td>TUESDAY</td>
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</table>
AFTER MISSING A VERY EASY SHOT IN HOCKEY

What was I thinking?

Was this a positive or negative thought?

What was happening in my body?

Was this a positive or negative thing?

What was I feeling?

Was this a positive or negative feeling?

What did I do?

Was this a positive or negative thing?

AFTER MAKING A REALLY GREAT SHOT IN HOCKEY

What was I thinking?

Was this a positive or negative thought?

What was happening in my body?

Was this a positive or negative thing?

What was I feeling?

Was this a positive or negative feeling?

What did I do?

Was this a positive or negative thing?
THOUGHTS AND SELF TALK: What are they?

Something you are thinking about or talking about to yourself. It can be talking out loud or it can be saying things to yourself in your head.

They can be positive ("I can do this") or they can be negative ("I'm no good, I can't do this").

NEGATIVE SELF TALK

Negative self talk usually happens when you start thinking negative things.

When you think negative things - you usually feel negative (unhappy, angry, annoyed, worried) and you don’t end up playing hockey as well as usual.

POSITIVE SELF TALK

Positive self talk usually happens when you start thinking positive things.

When you think positive things - you usually feel positive (happy, good about yourself, relaxed) and you end up playing hockey better.

The way you think can change the way you feel and the way you play hockey.

Who has negative thoughts in sport?

All athletes in sport can have negative thoughts sometimes.

BUT the athletes who play better are the ones who are able to do something about their negative thoughts and negative talking.
THERE ARE DIFFERENT TYPES OF NEGATIVE THOUGHTS AND NEGATIVE SELF TALK IN SPORT

Those times when:

1. You worry about how you played
   ("That was terrible how I missed that shot" or "That was an easy pass, but I still didn’t get it")

2. You can’t make a decision about what to do because you keep thinking about what you could have done ("I should have tackled sooner and then they wouldn’t have scored" or "If I had just passed the ball sooner")

3. You keep thinking about the things that are happening in your body (heart racing, heavy legs, butterflies in the tummy, sweaty hands)

4. You think about what will happen if you don’t play well ("If we don’t play well today, we will lose", or "If I don’t play well in this position the coach will move me")

5. You think you aren’t very good and give yourself a hard time ("I’m no good at hockey", or "I’m not as good as others in my team")

What are some of the things that might happen if you think or say negative things about yourself?

- Lose concentration
- Don’t play as well as usual
- Next week:

NEXT WEEK:
Learning how to stop or reduce negative talk

You need to Know:
1. When you are thinking negatively
2. How to stop thinking negatively
3. How to change the negative thought to something positive
# HOMEWORK: WEEK 3  RECORD OF SELF-TALK

<table>
<thead>
<tr>
<th>Stressor</th>
<th>What happened to upset you (training, hockey game, school, other)</th>
<th>What were you saying to yourself</th>
<th>What were you feeling</th>
<th>What did you do</th>
</tr>
</thead>
<tbody>
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</table>
### Workshop 4  Learning How to Stop Negative Thoughts (self talk) and Learning to Use Deep Breathing (to relax and get concentration back)

**When do I have negative thoughts** - when something happens to really upset/ stress/ or annoy me

**What happens when I have negative thoughts** - I don’t play as well as usual in hockey

**What can I do when I have negative thoughts** - Learn how to STOP them

<table>
<thead>
<tr>
<th>Something happens to upset me</th>
<th>My negative thought is</th>
<th>My signal to STOP my negative thought is</th>
</tr>
</thead>
<tbody>
<tr>
<td>After missing a very easy shot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After getting a bad call from the umpire</td>
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<td></td>
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<tr>
<td>A player on the other team shouts something</td>
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<tr>
<td>After my opponent has just cheated</td>
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</tbody>
</table>
Learning how to RELAX

Describe how you feel now after your run

What would you feel like if you were relaxed

How relaxed are you before the practice session? Circle one number only.

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<thead>
<tr>
<th>1</th>
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<th>3</th>
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</tr>
</thead>
<tbody>
<tr>
<td>very relaxed</td>
<td>quite relaxed</td>
<td>a little relaxed</td>
<td>a little tense</td>
<td>quite a bit tense</td>
<td>very tense</td>
</tr>
</tbody>
</table>

How relaxed are you after the practice session? Circle one number only.

<table>
<thead>
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</table>

WHY DOES DEEP BREATHING HELP YOU: because it can help you

Concentrate relax

YOU NEED TO PRACTICE DEEP BREATHING -

TO BE GOOD AT IT
LEARNING HOW TO BREATHE DEEPLY: what to do

1. Before you start write down how you feel using the numbers from 1 to 6

2. Lie down on the floor flat on your back. Move your feet a little apart

3. Let your body sink into the floor

4. Close your eyes

5. Put your right hand on your tummy and your left hand on your chest

6. Take a slow deep breath through your nose. Don't lift your shoulders up. Your right hand on your tummy will lift up and your hand on your chest should only move a little

7. Do this a couple of times until you get used to it

8. Keep breathing in through your nose

9. Breathe out through your mouth making a quite whooshing sound like the wind as you blow out all the air

10. Take long slow deep breathes that lift your hand on your tummy

11. Concentrate on the sound and feel of your breathing

12. Say your word to relax yourself when you breath out (e.g., "relax" / or "Breathe in" "breathe out")

13. Write down how you feel after you do this using the numbers from 1 to 6
The word I am going to use when I do my breathing exercise is

Before you do the breathing exercise - you need to pick the one number that describes how you feel and write it down. Then after you do the breathing exercise you need to pick the one number that describes how you feel and write it down.

1 very relaxed 2 quite relaxed 3 a little relaxed 4 a little tense 5 quite a bit tense 6 very tense

<table>
<thead>
<tr>
<th>WEEKDAYS</th>
<th>BEFORE I DID MY BREATHING EXERCISE I FELT</th>
<th>AFTER I DID MY BREATHING EXERCISE I FELT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wednesday</td>
<td></td>
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<tr>
<td>Thursday</td>
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<td>Monday</td>
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<td>Tuesday</td>
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</tbody>
</table>
HOMEWORK

1. LEARNING HOW TO STOP NEGATIVE THOUGHTS
   * Know when you have a negative thought - and using your signal to STOP it
   * Fill in the sheet for stopping negative thoughts

2. LEARNING HOW TO USE DEEP BREATHING TO RELAX
   * Know what it feels like to be relaxed - and how to relax yourself using deep breath
   * Place your coloured DOTS around your house
   * When you see the coloured DOT practice your deep breathing - take 3 slow breaths saying your special word
What is imagery?

- Imagining yourself doing something
- Practicing “inside your ____________”

Why is using imagery in sport a good thing to do?

- Because it helps you “make a plan” in your head of how to do something
- It helps your mind get used to something - so when your body does it - “______________”
- When you imagine yourself doing something (eg, hitting a ball) your muscles work as if you really hit the ball

Who uses imagery in sport

- All of the best athletes
- You will learn HOW to imagine like the best athletes
What can you use Imagery for?

Practice and learn physical skills
(eg _________________________________)

Practice and learn mental skills
(eg _________________________________)

Practicing moves and plans for hockey
(eg “Set Plays” _________________________)

Controlling what happens in your body
(eg, how fast your heart beats, your breathing)
THINGS TO REMEMBER WHEN

**DOING IMAGERY ✓**

- Use your deep breathing to relax your body first
- Practice every day
- When you start using imagery - practice in a _________ place
- See the picture from your own eyes (____________________)
- Be realistic (______________________________________)
- Use a trigger/ signal word to help you concentrate
- Imagine positive things (eg doing a good shot)
- Make it seem REAL - Practice imagining using all your senses
  - Imagine what you are doing and the result (eg, feeling yourself hit the ball and hearing it hit the backboard in the goal)
- Keep a list of your imagery practice (Why? ________________)

**Imagery is not magic - but it can help you**

**Imagery is a skill (eg, like trapping the ball)**

**YOU NEED TO ___________________________ IT**
WHAT ARE MY IMAGERY SKILLS LIKE (exercises with instructor)

Sit down and do your deep breathing for a couple of minutes
Then close your eyes and imagine you are getting up. You stand up and
move across the room. Once you reach the other side, turn around and walk
back to the chair you were sitting in and sit down again.

When you finish this exercise, answer these questions. YES or NO

1. Were you able to get a clear picture, real image? 

2. Were the images in colour? 

3. Did the image look like photographs? 

4. Did the image look like a movie (did it keep going - non-stop)? 

5. In your mind were you watching yourself walking (like you would watch
an actor in a movie)?

6. In your mind were you the person who was walking (you could not see
your face because you were the person walking)?

7. When you imagined yourself walking, were you able to feel any
movement? (what movement?)
HOMEWORK

1. LEARNING HOW TO USE IMAGERY start with your deep breathing exercise from week 4

* Then practice your imagery using these examples

* Before you practice this imagery, go through over it in your head with your eyes open first.

Imagine a blank white screen. On this white screen picture a blue circle - a big blue circle. Now let the circle turn green in colour. Then let the circle change to a yellow circle - a bright shiny yellow circle. Let the yellow circle start to fade and get lighter and lighter until you are left with the same white screen you started with.

When you finish this exercise, answer these questions. YES or NO

1. Were you able to get a clear picture, real image? _______

2. Were the images in colour? _______

3. Did the image look like photographs? _______

4. Did the image look like a movie (did it keep going - non-stop) _______

5. Were you able to change the colour of the circle? _______
HOCKEY (exercises with instructor)

Imagine that you have just arrived at the turf where you have hockey training. See yourself arriving and walking around the turf. See the trees, and the goals, and the other things you would see. Look at the colour of these things. There are other people in your team around. Look at them. Hear them talking. Are there people already having a hit on the turf? 

_____ What other sounds can you hear? _________. Can you smell anything? _____. What did you last have to eat? _____. Can you still taste it? _______. Picture everything as if you were really there - make it as detailed as you can. You pick up your stick. What does it feel like? 

_____. You run out to your friends and start hitting a ball around with them. The ball is coming to you. Feel your body move as you get ready for the ball. You trap it and hit it back. You hear the sound of the ball on your stick. What colour is the ball _______. What are you thinking? _______. USE ALL YOUR SENSES. Then your coach arrives and calls you over to start training.

When you finish this exercise, answer these questions. YES or NO

1. Were you able to get a clear picture, real image? ________

2. Were the images in colour? ________

3. Did the image look like photographs? ________

4. Did the image look like a movie (did it keep going - non-stop) ________

5. In your mind were you watching yourself doing the actions (like you would watch an actor in a movie) ________

6. In your mind were you the person who was doing the actions (you could not see your face because you were the person walking) ________

7. When you imagined yourself doing the actions, were you able to feel any movement? (what movement?) ________

8. Were you able to hear any sounds? _______. What were they?
EXERCISE (exercises with instructor)

Imagine a jug of cordial sitting on a bench/table in your kitchen. Can you see it? The jug is half full. Stick your finger into the cordial. See how your finger makes lots of little ripples in the water, that bounce off the side of the jug. Notice the feel of the cordial - it is wet, a little sticky. Put your finger in your mouth and taste the cordial. What flavour is it. Open the freezer and take out an ice cube bucket. Fill your hand with ice cubes. Your fingers feel cold holding the ice cubes. Put the ice cubes into the jug of cordial and watch the cordial splash as the ice hits it. Pick up a spoon and stir the cordial. Hear the noise the spoon makes as it hits the side of the jug (clang clang). Watch the whirlpool you have made. Take the spoon out of the jug and pour yourself a glass of cordial. Listen to the sound of the cordial as it fills your glass. Lift the glass and taste the cordial. Feel it as you drink it all until it is all gone. Put the glass back on the kitchen bench.

When you finish this exercise, answer these questions. YES or NO

1. Were you able to get a clear picture, real image? ______

2. Were the images in colour? ______

3. Did the image look like photographs? ______

4. Did the image look like a movie (did it keep going - non-stop) ______

5. In your mind were you watching yourself doing all the actions (like you would watch an actor in a movie) ______

6. In your mind were you the person who was doing all the actions (you could not see your face because you were the person walking) ______

7. When you imagined yourself doing the actions, were you able to feel any movement? (what movement?) ________________________________
THOUGHTS AND SELF TALK : What are they?

Something you are thinking about or talking about to yourself. (It can be talking out loud or saying things to yourself in your head)

POSITIVE SELF TALK

Positive self talk is when you say and think positive (good) things about yourself.

When you think positive things you feel positive (happy, good) and you play hockey well

Who has positive thoughts in sport?

All athletes in sport try to have positive thoughts

What are some of the things that might happen if you think or say positive things about yourself?

You feel ______ about yourself You play hockey very well

You feel more __________________

When do I use positive talking and thinking

When I am thinking negatively during a game (e.g., I’m no good/ I can’t hit the ball)

Why should I change my negative thinking to positive thinking?

Because when I think positive things - I play better hockey than when I think negative things

When should I use my positive thinking?

1. Use my signal to stop thinking negatively (say “STOP”/ red flag/ tap leg)
2. Then do my deep breathing to help relax my mind
3. Then say my positive thought
Control

There are things that happen in the game that I can control and things that I cannot control

- Some of the things that happen in the game that I CAN control are:

- Some of the things that happen in the game that I CAN NOT control are:

NOTE: I CAN ONLY ______________ THE THINGS THAT I CAN CONTROL

Responsibility

There are things that happen in the game that I am responsible for and things I am not responsible for

- Some of the things that happen in the game that I AM responsible for are:

- Some of the things that happen in the game that I AM NOT responsible for are:

NOTE: I CAN ONLY __________ THOSE THINGS THAT I AM RESPONSIBLE FOR

When something happens in a game that is not under my control it is better to forget about it: BECAUSE: there is __________ I can do about it

When something happens in a game that I am not responsible for it is better to forget about it: BECAUSE: there is __________ I can do about it
**Working out what are my positive thoughts going to be:** When something has upset me
When I am having negative thoughts after something has happened to upset or stress me that I am responsible for and I can control: I can change my thoughts 3 ways

1. I can tell myself about how to do the skill next time
2. I can tell myself about another play option for next time, or
3. I can tell myself something positive about upset me

<table>
<thead>
<tr>
<th><strong>1: MISSING A VERY EASY SHOT</strong></th>
<th>Write down all the negative things you usually say to yourself</th>
<th>Write your signal to stop your negative thought</th>
<th>What is your positive thought going to be</th>
<th>Key Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write down all the negative things you usually say to yourself</td>
<td>Write your signal to stop your negative thought</td>
<td>What is your positive thought going to be</td>
<td>Key Words</td>
<td></td>
</tr>
</tbody>
</table>
Working out what are my positive thoughts going to be: When something has upset me
When I am having negative thoughts after something has happened to upset or stress me that I am NOT responsible for and I can not control: I can change my thoughts 3 ways

1. I can tell myself to change the way I think about what happened (think about it differently)
2. I can tell myself to forget about it and ignore it, or
3. I can tell myself that what happened was not that important

<table>
<thead>
<tr>
<th>2. AFTER GETTING A VERY BAD CALL FROM THE UMPIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write down all the negative things you usually say to yourself</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
2 EXAMPLES OF HOW TO CHANGE NEGATIVE THOUGHTS TO POSITIVE

EXAMPLE 1: Missing an easy shot

REMEMBER: You can control this and you are responsible for it. See page 3

- Make a list of the negative things you say to yourself after missing a very easy shot
- Change all the negative things using one of the three choices for things YOU CAN CONTROL and you are RESPONSIBLE for
- Shorten each of these to a couple of key words

<table>
<thead>
<tr>
<th>Negative self talk</th>
<th>Changed to Positive self talk</th>
<th>Key words</th>
</tr>
</thead>
<tbody>
<tr>
<td>That was a stupid mistake</td>
<td>Next time I’ll watch the ball</td>
<td>watch the ball</td>
</tr>
<tr>
<td>This is useless, now the other</td>
<td>Next time I’ll pass the ball</td>
<td>pass earlier</td>
</tr>
<tr>
<td>team has the ball</td>
<td>earlier so - I’m not rushed</td>
<td></td>
</tr>
<tr>
<td>Why do I always miss</td>
<td>Next time I’ll get it</td>
<td>next time</td>
</tr>
<tr>
<td>the easy shots</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EXAMPLE 2: Getting a bad call from the umpire

REMEMBER: You cannot control this and you are not responsible for it. See page 4

- Make a list of the negative things you say to yourself after getting a bad call from the umpire
- Change all the negative things using one of the three choices for things you CANNOT CONTROL and you are NOT RESPONSIBLE for
- Shorten each of these to a couple of key words

<table>
<thead>
<tr>
<th>Stressor : Getting a very bad call from the umpire</th>
<th>Negative self talk</th>
<th>Changed to Positive self talk</th>
<th>Key words</th>
</tr>
</thead>
<tbody>
<tr>
<td>That was a stupid mistake</td>
<td>What’s happened has happened</td>
<td>forget it</td>
<td></td>
</tr>
<tr>
<td></td>
<td>so forget it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Now the other team will</td>
<td>We’ll just have to get the ball back</td>
<td>ball back</td>
<td></td>
</tr>
<tr>
<td>have the ball - they’ll score</td>
<td>and score ourselves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The refs an idiot</td>
<td>We’ll get the call next time</td>
<td>next time</td>
<td></td>
</tr>
</tbody>
</table>
Workshop 7

WHAT I HAVE LEARNED IN THIS PROGRAM

The first thing I learnt about is knowing when something has really upset or stressed me in a game

KNOWING WHEN I AM STRESSED
- What happens in my body
- What I think
- What I feel
- What I do

What is NEGATIVE THINKING
- Negative self talk is when you say and think negative (bad) things about yourself

How can I STOP NEGATIVE THOUGHTS
- Using my Signal to stop me thinking negative thoughts (telling myself STOP/ picturing a red flag in my mind)

What is DEEP BREATHING
- Breathing deeply in through my nose and out through my mouth so my tummy moves up and down

When do I use DEEP BREATHING
- I use my deep breathing to help relax me and calm me down - so I can concentrate on what to do next
What is POSITIVE SELF TALK

Positive self talk is when you say and think positive (good) things about yourself

Why do I use POSITIVE SELF TALK

So I can change negative things I am saying about myself to positive things - so I feel better and can play better

What is IMAGERY

Practicing something in your head

Why do I use IMAGERY

It can help me make a plan in my head and help me practice and learn skills in my head before I really do them

Control

Things can happen in the game that I can control and things that I cannot control

I can only change things in the game that I can control

When something is not under my control there is nothing I can do about it

Responsibility

Things happen in the game that I am responsible for and things I am not responsible for

I can only change things in the game that I am responsible for

When things happen I am not responsible for - there is nothing I can do about it
To get good at these new things I have learnt I need to **Practice** them

I can use imagery to practice these new skills in my mind first:
(Imagine something in the game that has upset me and I am starting to think negatively about it: so I)

1. Stop my negative thought
2. Do my deep breathing
3. Change my negative thought to something positive

When you can feel you are getting upset or stressed about something that has happened in a game this will help you remember what you can do so you don’t have a **STACC**

- **S** - stop my negative thoughts
- **T** - take a deep breath
- **A** - and
- **C** - change my thoughts to something positive
- **C** - concentrate on what I am going to do next
APPENDIX H

Program Worksheets for Control Group Participants
What is a goal?

- A goal is something to aim at.
- A goal is something you want to be able to do.

Why do people make goals in sport?

- Because they want to be able to learn something new.
- Because they want to be able to do something better.

Who uses goals in sport?

- All of the best athletes.
- You will learn HOW to set a goal like the best athletes.
Why is setting goals in sport a good thing to do?

Setting a goal in sport helps you work out:

- **What** you want to be able to do
- **How** to get what you want (and what you need to do)
- **How long** it will take you to reach your goal
- **When** you have reached your goal

It's like going for a holiday: You need to know:

1. **Where** you are going (where do you want to get to - what is your target place)
2. **How** are you going to get there (in a car)
3. **How long** will it take you (because you might need to get petrol, or buy lunch)
4. **How** will you know when you get there (when you see the sign for the place)
THINGS TO REMEMBER WHEN

SETTING A GOAL ✓

• Make a list of your goals
• Pick the ones you want to work on first
• not too hard and not too easy (but somewhere in the middle)
• does it tell you what you want to be able to do (is it something you can measure)
• does it tell you how you are going to do it
• it needs to be something that you are going to do
• you need to write it down
• does it tell you how long it will take to get to your goal
• you need to read your goals to see if you need to change them a little

NOTES: For next week: you need to think about

(1) something you would like to be able to do in hockey (that you can't do now) OR

(2) something you would like to better at in hockey
and we will set some goals to help you do that.
<table>
<thead>
<tr>
<th>5 Things I am good at in HOCKEY</th>
<th>5 Things I would like to be better at in HOCKEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
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<tr>
<td>2</td>
<td>2</td>
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<tr>
<td>3</td>
<td>3</td>
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<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
GOALSETTING SHEET

My short-term (weekly) goal is:

I want to reach this weekly goal by (date):

What I have to do to reach this goal (What is my plan?)

I can get help to reach my goal from:

My Signature: ________________  My Witness: ________________

DATE: ________________  DATE: ________________
GOALSETTING SHEET

1. A short-term (weekly) goal for me is:

   

2. A medium-term (6 weeks from now) goal for me is:

   

3. I want to reach these goals by
   
   Short-term weekly goal (date): __________________________
   
   Medium-term 6 weekly goal (date): __________________________

4. What I have to do to reach these goals (What is my plan)
   
   Short-term goal:
   
   __________________________
   
   Medium-term goal:
   
   __________________________

5. I can get help to reach my goal from:

   __________________________
   
   __________________________

6. My Signature: __________________________ My Witness:
   
   __________________________
   
   DATE: __________________________ DATE: __________________________
**Workshop 3**  

### WEEKLY GOAL-SETTING PROGRESS

1. **How confident do you feel about reaching your goal?**
   - 1 2 3 4 5 6 7 8 9 10
   - Not at all confident
   - Very confident

2. **How much effort have you put in to reach your goal?**
   - 1 2 3 4 5 6 7 8 9 10
   - No effort
   - Lots of effort

3. **Was there something that stopped your efforts to reach your goal?**
   - 1 2 3 4 5 6 7 8 9 10
   - Not at all
   - Very much

List the things that stopped you or got in the way of your efforts to reach your goal:

- 
- 
- 
- 
- 

4. **Do you think your weekly goal has been helping your hockey playing?**
   - 1 2 3 4 5 6 7 8 9 10
   - Not at all
   - Very much
GOALSETTING SHEET

My short-term (weekly) goal is:


I want to reach this weekly goal by (date): ____________________

What I have to do to reach this goal (What is my plan?)


I can get help to reach my goal from:


My Signature: ____________________ My Witness: ____________________

DATE: ____________________ DATE: ____________________
Workshop(s) 4 and 5

Video - AUSTRALIAN INSTITUTE HOCKEY team - SKILLS
What is a routine in sport?

a routine is something that you do all the time that helps you get ______ for competition

Why do people have a routine in sport?

It helps them to get organised

They don’t forget things because they do them all the time

They know what they need to do and when to do it

It helps them feel confident because they know they have done everything they need to be ready

Who uses routines in sport?

All of the best athletes
Why is getting into a routine in sport a good thing to do?

Setting a routine in sport helps you work out:

What you need to do to be ready

When you need to do things so you are ready on time

It means you can concentrate on more important things because you know you are ready (you don't have to worry)
Things To Remember When Setting A Routine ✓

- Make a list of all the things you need to do the week before the game
- Put them in order of the things you need to do first

- Make a list of the things you need to do on the day of the game
- Put these in order of the things you need to do first
- Work out how much time you need to do them

- Make a list of the things you need to do when you arrive before the game
- Put these in order of the things you need to do first
- Work out how much time you need to do the

- You need to write the routine down until you get used to it

NOTES: For next week: you need to

(1) Bring your goal setting information - so you can look at how you went with your medium term (6 week) goal and weekly goals
Working out your Routine for sport

• Make a list of all the things you need to do the week before the game
  (put them in order of the things you need to do first)

• Make a list of the things you need to do on the day of the game (put
  them in order of the things you need to do first and how much time you
  need to do them)

• Make a list of the things you need to do when you arrive before the
  game (Put them in order of the things you need to do first and how much
  time you need to do them)
Workshop 7

WHAT HAVE I LEARNED IN THIS PROGRAM

What a goal is:
Something to aim at or something I want to be able to do

Why setting a goal in sport is a good thing to do: it helps me make a plan of
what I want to do
what I need to do to get there
how long it will take me, and
how I will know when I reach my goal

How to write down a goal

The different types of goals
a short-term (weekly) goal
a mid-term (6 weekly) goal

What is a routine
something that I do all the time that helps me get ready for a game

Why is a routine a good thing to do
it helps me get organised - so I don’t forget things
it means I can concentrate on the more important stuff
APPENDIX I

The COPE Model for Coping with Acute Stress in Sport (Anshel, 1990)
The COPE Model for Coping with Acute Stress in Sport (Anshel, 1990)

**ACUTE STRESS RESPONSE**
- heightened anxiety
- narrowed attention
- attentional focusing
- helplessness
- mental retreating
- mental disengagement
- denial/defensiveness
- ego-bias attribute
- over arousal/withdrawal
- narrow internal focusing
- auditory closure
- negative self-talk
- covert rehearsal of stressor
- low risk taking
- muscular tension
- poorer movement co-ordination
- inappropriate attentional focus
- slowed decision making

**COGNITIVE AND BEHAVIOURAL STRATEGIES**
- relaxation
- internal causal attributions
- external focusing
- active listening
- systematic desensitisation
- psychological distancing
- discounting
- appraisal
- positive non-verbal cueing
- secondary appraisal
- short-term goal setting
- positive self-talk
- self deprecating humour
- imagery
- inquiring
- anticipation/pre-cuing
- planning/decision making

**THEORETICAL BASES**
- attributions
- expectancies
- self-efficacy
- attentional focus
- cognitive mediation
- sensory distraction
- coping style
- internal - broad attentional focus
- problem solving
- decision making
- instrumental aggression
- optimal arousal
- motor program
- external attentional focus