



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

University of Wollongong
Research Online

Faculty of Social Sciences - Papers

Faculty of Social Sciences

2012

Voices in the playground: A qualitative exploration of the barriers and facilitators of lunchtime play

Rebecca M. Stanley

University of Wollongong, rstanley@uow.edu.au

Kobie Boshoff

University of South Australia

James Dollman

University of South Australia

Publication Details

Stanley, R. M., Boshoff, K. & Dollman, J. (2012). Voices in the playground: A qualitative exploration of the barriers and facilitators of lunchtime play. *Journal of Science and Medicine in Sport*, 15 (1), 44-51.

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library:
research-pubs@uow.edu.au

Voices in the playground: A qualitative exploration of the barriers and facilitators of lunchtime play

Abstract

Objectives: To explore children's perceptions of the factors influencing their engagement in physical activity during the "critical" lunchtime period, using a social-ecological framework. **Design:** This study was an in-depth descriptive qualitative design. **Methods:** Fifty-four South Australian children aged 10-13 years participated in same-gender focus groups. Transcripts, field notes and activity documents were analysed using content analysis. Using an inductive thematic approach, data were coded and categorised into perceived barriers and facilitators according to a social-ecological model. **Results:** Children identified a range of environmental, social and intrapersonal barriers and facilitators. Bullying/teasing, the school uniform and school rules were exposed as explicit barriers to lunchtime play. Other important barriers included lack of access to, and poor suitability of, space, lack of access to programs/facilities and equipment, and lack of peer and teacher support. Perceived facilitators of lunchtime physical activity centred on access to equipment, enjoyment, motivation to improve skills, and peer support and acceptance. The freedom to make up or modify rules for games was also perceived to be a facilitator of lunchtime play. **Conclusions:** Communicating with children has been an effective approach in uncovering perceived barriers and facilitators to lunchtime play that may not have been previously considered in the quantitative correlate literature. Lunchtime interventions targeting children's physical activity should focus on addressing the barriers perceived to be important to lunchtime play.

Keywords

lunchtime, play, playground, qualitative, exploration, voices, barriers, facilitators

Disciplines

Education | Social and Behavioral Sciences

Publication Details

Stanley, R. M., Boshoff, K. & Dollman, J. (2012). Voices in the playground: A qualitative exploration of the barriers and facilitators of lunchtime play. *Journal of Science and Medicine in Sport*, 15 (1), 44-51.

1
2
3
4
5
6
7
8
9
10

Voices in the playground: A qualitative exploration of the barriers and facilitators
of lunchtime play

Rebecca M Stanley^{a*}, Kobie Boshoff^b, James Dollman^a.

^a*Health and Use of Time Group, School of Health Sciences, University of South Australia, GPO Box
2471, Adelaide, 5001, Australia.*

^b*School of Health Sciences, University of South Australia, GPO Box 2471, Adelaide, 5001, Australia.*

* Corresponding author.

E-mail address: starm002@mymail.unisa.edu.au (Rebecca M Stanley).

11 **Abstract**

12 Objectives: To explore children's perceptions of the factors influencing their engagement in physical
13 activity during the "critical" lunchtime period, using a social-ecological framework.

14 Design: This study was an in-depth descriptive qualitative design.

15 Methods: Fifty-four South Australian children aged 10 to 13 years participated in same-gender focus
16 groups. Transcripts, field notes and activity documents were analysed using content analysis. Using an
17 inductive thematic approach, data were coded and categorised into perceived barriers and facilitators
18 according to a social-ecological model.

19 Results: Children identified a range of environmental, social and intrapersonal barriers and facilitators.
20 Bullying/teasing, the school uniform and school rules were exposed as explicit barriers to lunchtime play.
21 Other important barriers included lack of access to, and poor suitability of, space, lack of access to
22 programs/facilities and equipment, and lack of peer and teacher support. Perceived facilitators of
23 lunchtime physical activity centred on access to equipment, enjoyment, motivation to improve skills, and
24 peer support and acceptance. The freedom to make up or modify rules for games was also perceived to be
25 a facilitator of lunchtime play.

26 Conclusions: Communicating with children has been an effective approach in uncovering perceived
27 barriers and facilitators to lunchtime play that may not have been previously considered in the
28 quantitative correlate literature. Lunchtime interventions targeting children's physical activity should
29 focus on addressing the barriers perceived to be important to lunchtime play.

30 *Keywords:* Physical activity; Focus groups; Children; Leisure activities; Facilitators; Barriers.

31 1. Introduction

32 According to the Australian National Guidelines, children are encouraged to obtain at least 60
33 minutes of moderate-to-vigorous physical activity (PA) a day and no more than two hours of electronic
34 media per day¹. Given that children spend a large proportion of their day at school, this setting has been
35 identified as ideal for PA promotion with multiple opportunities to contribute to their recommended daily
36 activity “dose” without interfering with academic schedules². With concerns that allocated physical
37 education is not meeting statutory requirements³, the lunchtime period has been identified as a “critical
38 window” for PA promotion within a school day⁴.

39 The lunchtime period, or also referred to as “recess”, is a regularly scheduled time where all
40 children within a school are generally given equal opportunity for unstructured PA, regardless of gender,
41 ethnicity and socioeconomic background². Research has shown that children can obtain up to 33% of
42 their recommended daily moderate-to-vigorous PA during this period⁴. In a study using pedometers, the
43 lunchtime period was identified as the most important component of a school day, contributing up to 16%
44 of daily PA⁵. However, there is evidence that many children are not taking advantage of this period for
45 PA. Ridgers et al.⁶ found that boys and girls spent only 32.9% and 23% of their total lunchtime in
46 moderate-to-vigorous PA, respectively. Hence, further research is required to understand influences on
47 PA during this “critical window”.

48 Little research has been conducted into the factors influencing lunchtime play. Current research
49 has predominantly been quantitative, with a significant focus on cross-sectional surveys⁷ and school-
50 based intervention studies⁴. Quantitative surveys tend to assess the relationship between factors and
51 “global” PA, or focus on a narrow set of predefined factors, which are often inferred by adults⁸ and may
52 have limited relevance to the specific setting or behaviour under investigation. A social-ecological model
53 posits that PA behaviour results from multiple influences, including intrapersonal, social and physical
54 environmental factors^{9,10}. However, no studies to date have explicitly and comprehensively explored
55 these multi-faceted influences of lunchtime PA from a qualitative perspective.

56

57 This study was the first phase of a larger study in which the overall purpose was to develop a physical
58 activity correlate questionnaire that could be administered in school settings. To address current
59 recommendations to explore the influences on specific PA behaviour in specific contexts⁴, the aim of this
60 study to explore children's perceptions of the factors influencing their engagement in PA during the
61 lunchtime period, using a descriptive qualitative approach¹¹. The findings from this study will be used to
62 inform the questionnaire content in the larger study.

63

64 **2. Methods**

65 Maximum variation purposive sampling was used to select boys and girls across a range of
66 socioeconomic status (SES), geographic location and school types, in order to obtain a diverse description
67 of potential influences on children's lunchtime PA¹². A list of all South Australian government and non-
68 government schools was obtained along with their School Card Register (SCR). The SCR is the
69 percentage of students in a school whose families receive government support to meet the costs of school
70 attendance and is therefore an indicator of SES at the school level. The list of schools was stratified
71 according to the SCR score and split at the 50th percentile to categorise high and low SES schools. Six
72 schools were purposively selected from the stratified school list to reflect the range of school types,
73 socioeconomic status (SES) and geographic locations in South Australia and included a rural school, a
74 non-government single-sex female school, a non-government single-sex male school, a non-government
75 co-educational school, a high SES government co-educational school and a low SES governmental co-
76 educational school. The Principal or nominated teacher was asked to identify nine potential participants
77 from each gender across Years 5, 6 and 7 who were: aged between 10 and 13 years; spoke and understood
78 English; did not have a diagnosed physical, intellectual or sensory disability; represented diversity in
79 activity level (i.e. active or not very active); and were comfortable talking in group situations. A total of
80 54 participants (23 males), with a mean age of 11.05 (± 0.86) years, provided informed parental/legal

81 guardian consent to participate in the focus groups. Of these participants, 20% attended a low SES school
82 (SCR cut-off for low SES = 31.8%; 50th percentile).

83 The study was approved by the University of South Australia Human Research Ethics
84 Committee, Department of Education and Children Services (DECS), the South Australian Commission
85 for Catholic Schools (SACCS) and from the relevant school authorities.

86 In-depth semi-structured focus groups were chosen to explore children's perceptions of factors
87 influencing their engagement in lunchtime PA¹³. Using the social-ecological model as a guide^{9,10}, a
88 number of prompting questions were developed to obtain information about intrapersonal, social and
89 physical environmental influences, as outlined in Table 1. The questioning route was reviewed for
90 structure, content and expected length by a panel of experts with research experience in conducting
91 children's focus groups. Modifications to the number of questions per focus group were made based on
92 the experts' previous experience with similar participant groups. In addition, discussion-stimulating
93 activities were included into the focus group questioning route, which were recommended by the panel of
94 experts and the literature¹⁴. The questioning route was piloted with a group of children from Year 5, 6
95 and 7 in a South Australian school to ensure that the questions could be answered within an appropriate
96 timeframe, were worded and sequenced appropriately and elicited the required information^{15,16}.

97 *****Insert Table 1 about here*****

98 Eleven focus groups were conducted on school premises during class time across winter months
99 (April to early July). Focus groups ran for approximately one hour and the size of the groups ranged from
100 two to nine participants, with only two of the eleven groups containing less than four participants.
101 Separate male and female focus groups were conducted to provide a safe environment to discuss gender-
102 specific factors, such as body image¹⁶. The first author facilitated the groups, supported by a trained
103 research assistant. The discussions were audio-taped and transcribed verbatim¹⁵.

104 Each focus group followed the same basic structure, described in Table 1. To focus thinking
105 around the concept of physical activity⁸, children were asked the question, "What is the first

106 thing that comes to mind when you hear the word physical activity?” Following responses from
107 the children, the facilitator provided a definition and asked the children to come up with terms
108 that they would like to use in the discussion. “Play” and “Sport” were the most common terms
109 used. Following this introduction, children were asked to take the facilitators on a tour of the
110 school, by pointing out where they play at lunchtime and the activity they played, using a bird’s
111 eye map of the school printed from “Google Earth” (2009 Google). A picture of a stick figure
112 and a drawing of the activity were placed on the map to indicate where and what they played in
113 the school yard. This approach has been successfully used in other studies relating to children’s
114 perceptions of their environment^{8,17}. The map was used to stimulate discussion topics and was
115 regularly referred to during the discussion.

116 Factors mentioned were documented on a whiteboard until saturation was reached (i.e. when no
117 new ideas were expressed)¹⁵. To ensure rigour of the data, member checking occurred, during which
118 children were given an opportunity to make any changes or additions to the list before the conclusion of
119 the session. Children were given time at the end of the discussion to identify what they thought were the
120 five most important factors. Each child was given five sticker dots and was asked to approach the
121 whiteboard as a group and place the stickers next to the corresponding factors.

122 The audio-tapes were transcribed verbatim immediately following the discussion to increase
123 trustworthiness of the data. The transcripts and whiteboard summaries were used in the analysis.
124 Qualitative content analysis using a long table inductive thematic approach^{11,15} was used to analyse the
125 data. Comments were coded and arranged on poster boards under headings derived from the social-
126 ecological model (intrapersonal, social environment and physical environment characteristics), which was
127 used to provide a context for interpreting and summarizing the range of factors identified by the children.
128 Under each heading the coded comments were “clustered” into major categories and sub-categories based
129 on similar content. Analysis was conducted separately by the first author and an external coder. Coding
130 and clustering discrepancies were discussed with the research team until 100% agreement was reached.

131 The list of factors and sticker dot frequencies were then used to guide the development of a set of
132 prioritised factors, according to children's perceived importance¹¹, which were triangulated with the
133 whiteboard summaries of the factors identified during the focus groups.

134

135 **3. Results**

136 Perceived facilitators and barriers congregated under three major headings corresponding to
137 intrapersonal, physical environment and social characteristics. A total of 64 factors were identified by the
138 children with varying degrees of perceived importance. Due to the vast array of factors identified by the
139 children, only the factors perceived as the most important by the children and/or were unique to the
140 lunchtime setting will be described here. Perceived importance was interpreted from the sticker dot
141 activity, the number of verbalisations and the enthusiasm with which factors were described. Factors
142 perceived as the most important contained more than five sticker dots, ten or more related comments
143 and/or discussed with a lot of enthusiasm by the participants. Enthusiasm was interpreted from
144 observations during the focus groups by the principal researcher and the research assistant and was based
145 on observations of non-verbal responses, vocal intonation and eagerness to discuss a topic.

146 As outlined in Table 2, participants identified a number of barriers across all components of the
147 social-ecological model. Most of the physical environmental factors were perceived to be barriers to
148 lunchtime play. "Lack of access to space" was defined as space being available but not accessible. A
149 number of reasons for inaccessibility included peers taking up the space for sedentary activities (sitting
150 and talking); space being used for other school-related activities (e.g. training); and the condition of a
151 space. Another aspect of accessibility was the suitability of a space for a particular activity. For instance,
152 there may be times when available play spaces are not conducive to a particular activity. "Lack of access
153 to programs/facilities" was a common barrier across most schools. "Lack of facilities" was linked to
154 safety concerns and cost of facilities. "Access to equipment" was consistently raised in all schools, with
155 emphasis on current poor condition and maintenance of equipment, rather than lack of equipment.

156 Another consistently mentioned factor across most schools was “weather”. In extreme weather,
157 such as very hot or very wet conditions, opportunities to be active were restricted by the school’s weather
158 policy. “Uniform” was a factor discussed only briefly by girls but had a pertinent affiliation to the
159 lunchtime setting, particularly in high SES schools. When girls were asked why they chose certain
160 activities over others, uniforms was identified as a significant restriction to playing specific types of
161 activities, such as basketball. Children identified “other commitments”, such as meetings, music practice,
162 and sport shed duty, as important barriers. “School rules” were not only raised in relation to specific
163 factors, such as space and weather, but also enthusiastically discussed in general. These rules often had a
164 negative connotation and were seen as a major barrier to lunchtime play.

165 Perceived competence, lack of motivation and preference for sedentary pursuits were all
166 perceived as intrapersonal barriers to lunchtime play among boys and girls. These factors often led to
167 children believing that an activity was not worth pursuing.

168 Social barriers in the school yard fell into two major categories: “Peer influence” and “Teacher
169 influence”. An unexpected peer influence to play identified by the majority of children was
170 “bullying/teasing”. A direct influence of bullying was the prevention of children playing in certain areas
171 of the school yard or with pieces of equipment. Avoidance behaviour as a result of being bullied also
172 appeared to have an indirect influence on lunchtime play. Teachers were identified as another social
173 influence on lunchtime play. With a requirement to enforce school policies and maintain children’s safety,
174 teachers are sometimes perceived as “the bad people”, preventing children from playing certain games at
175 lunchtime.

176

177 *****Insert Table 2 about here*****

178

179 Table 3 outlines the facilitators perceived to be important during the lunchtime period. Depending
180 on the context in which factors were described, some of these, such as suitability of space, were also
181 identified as barriers to PA. However, in this context the availability of a space suitable for a specific

182 activity assisted children to play at lunchtime. For example, if children want to play football, they would
183 choose to play on the oval instead of the tennis courts. Similarly, accessibility of equipment was
184 consistently broached as an important facilitator and barrier across all schools. Most of the schools
185 provide opportunities for children to use equipment by giving them access to the sports shed, which was
186 perceived as an important facilitator of play. The type of weather was identified as a motivating factor for
187 children, in that they would select a specific activity based on the weather.

188 A number of intrapersonal factors were identified as facilitators of lunchtime play. When children
189 were asked why they participated in activities, the most common, and often the first response across all
190 groups was “*because it’s fun*” or “*I enjoy it*”. When asked to explain this response in more detail,
191 participants gave specific examples of what makes activities fun. For example, boys found an activity fun
192 because “*it’s dangerous*”, while girls described fun in relation to activities being challenging. Lunchtime
193 play was also considered fun if it meant hanging out with friends.

194 Behavioural attitudes, beliefs and feelings about lunchtime play were also perceived to be
195 facilitators. When asked “why do kids play sports/games at lunchtime”, responses centred on improving
196 skills or getting practice. Hanging out with friends was another factor that motivated lunchtime play. All
197 comments relating to beliefs about PA were considered facilitators. For example, children chose to play at
198 lunchtime because it gave them “something to do”. A unique characteristic of free play at lunchtime was
199 children’s freedom to “make up their own rules”. This assisted in making lunchtime games more fun and
200 facilitated motivation to play games. Of particular note, children commented that they often modify
201 existing rules to match personal and group capabilities, making lunchtime play more appealing.

202 In the “peer influence” category, “someone/friends to play with” was one of the most important
203 factors facilitating play. Children believed that having friends or someone to hang out with created
204 opportunities for play, contributed to the enjoyment of the activity and made activities worthwhile. “Peer
205 acceptance” was another important factor. “Teacher Influence”, in particular teacher support, was only
206 mentioned by children from two of the schools and was not considered as important as peer influence.
207 Irrespective of this, children commented that teachers sometimes helped with their play at lunchtime.

208

209 *****Insert Table 3 about here*****

210

211 **4. Discussion**

212 The literature has emphasised a need for explicit description of PA-related factors that are
213 pertinent to specific settings from the perspective of children¹⁸. This in turn will give meaning to existing
214 evidence and direct future PA promotion efforts. This study has contributed to the current literature by
215 specifically examining children's perceptions of the factors that facilitate and hinder their PA during the
216 critical school lunchtime period.

217 A number of barriers and facilitators identified in this in-depth descriptive qualitative study
218 concur with existing quantitative evidence of factors influencing "global" PA. These factors include
219 access to and suitability of space¹⁹, access to programs/facilities and equipment²⁰, enjoyment⁷, peer
220 support⁷, teacher support⁷ and perceived competence⁷. This study has contributed to existing evidence
221 by exploring these factors in the context of the lunchtime school setting and exposing a number of factors
222 unique to lunchtime play, which have not previously been investigated in detail in the quantitative social-
223 ecological correlate literature or included in PA correlate questionnaires. These factors include the school
224 uniform, bullying/teasing, school rules and the value of making up rules for games.

225 The school uniform has long been an important factor in the culture of a school²¹. It is a symbol
226 of discipline and status in the community²¹. However, there is little evidence of the influence of the
227 school uniform on children's unstructured lunchtime play. In the current study, school uniforms were
228 perceived predominately by girls as a significant barrier to lunchtime play. Uniform design, particularly in
229 the private school sector, restricts movement and is generally impractical for the majority of physical
230 activities. This leads to feelings of discomfort, particularly in mixed-gender environments, and reluctance
231 to engage in play. A qualitative study²² found that girls felt uncomfortable wearing the required sex-
232 specific physical education uniform of short skirts during physical education classes, preferring to not
233 participate in mixed-gender activities. In addition, the students also felt the skirt uniform was

234 inappropriate for the activities chosen during physical education class, preferring uni-sex uniforms
235 consisting of shorts, t-shirts and jumpers. In private schools, children are often not allowed to wear their
236 physical education uniform outside of physical education lessons. Schools could potentially reconsider
237 policies to allow a uni-sex physical education uniform during the lunchtime period. A practical design
238 allowing ease of movement would increase children's feelings of comfort and self-confidence when
239 engaging in physical activities.

240 Bullying/teasing in the school yard is not a new phenomenon and is well documented in the
241 literature, as evidenced by systematic reviews^{23,24}. However, this factor has only recently emerged in the
242 PA correlate literature as an important barrier to PA. Casey and colleagues²⁵ found that teasing was
243 linked with skill competence in activities, with the indirect outcome of reduced confidence and avoidance
244 of PA. Bauer and colleagues²⁶ also reported that children experienced direct gender and weight-related
245 bullying, inhibiting full engagement in PA. The participants in this current study also discussed examples
246 of direct bullying in which other children would physically stop children from engaging in activities by
247 stealing equipment and chasing them out of play spaces. Bullying/teasing can have profound negative
248 effects on self-confidence and can potentially lead to a preference for sedentary activities in lieu of PA
249^{25,26}. As this is a relatively recent concept in the PA literature, additional research is required to
250 understand the full extent of the influence of bullying/teasing on children's PA.

251 In the current study, children verbalised a desire to be more active at lunchtime but were
252 constrained by school rules. Rules tended to cluster around what they were allowed to play, who they
253 played with and where they played. Even though school rules are established for safety and legal reasons
254 and a means of controlling situations⁷, schools need to be aware that children generally perceive these to
255 be barriers to their lunchtime play, in which access to spaces, equipment and ultimately their
256 opportunities to be active, are restricted.

257 Children also indicated that freedom to make up or modify rules was important during lunchtime
258 play. Lunchtime PA is often characterised by its unstructured nature. According to MacDougall and
259 colleagues²⁷, children hold a unique meaning for "play", which is quite distinguishable from other forms

260 of PA. Play is often linked with fun, spontaneity, interaction with friends, and with no competitive
261 components. Humbert and colleagues¹⁸ reported that children want to be able to choose the level of
262 competition in any PA context and to make their own rules. In addition, a study by McKenzie and
263 colleagues²⁸ found children engaged in less moderate to vigorous physical activity during school break
264 times in areas that were highly structured through supervision or with organised activities compared to
265 unstructured play areas. The opportunity and the freedom to modify activities to be less competitive, to
266 change the physical demands of an activity and to include other children, can enhance opportunities and
267 promote enjoyment and motivation to engage in activities¹⁸.

268 Hohepa and colleagues²⁹ reported that the barriers and facilitators of PA are predominantly based
269 on perceptions of choice. The majority of the barriers tend to relate to aspects that children perceived to
270 be out of their control. For example, access to equipment was controlled and often restricted by the
271 school, and hence viewed as a barrier. However, when asked what would facilitate PA, participants
272 identified increased access to equipment as an appropriate solution. By increasing opportunities and
273 choice, children are more likely to be motivated to engage in PA³⁰. Even though Wilson and colleagues'
274 ³⁰ findings were based on non-specific PA, this current study has confirmed that the concept is applicable
275 to the school lunchtime setting and should be considered during the development of PA interventions.

276 When considering these findings, some limitations should be noted. School policies and physical
277 environments tend to vary across Australian states and between schools, thus limiting the generalisability
278 of the results. Only one focus group was run per group of children, restricting opportunities to follow up
279 and explore the identified factors in further detail. Also, some focus groups had a small number of
280 participants in the group, which may have affected the richness of discussion and reduced the ability to
281 expose additional factors. The identification of the five most important factors may have been influenced
282 by instructing the children to complete this activity in front of each other. An alternative approach could
283 have been to ask the children to identify the five most important activities one at a time without the other
284 focus group members in the room.

285

286 To the authors' knowledge this is the only qualitative study that has looked specifically at the lunchtime
287 period. The findings from this study can be used by schools, health promoters and policy makers to
288 develop appropriately targeted lunchtime PA interventions or modify existing policies in order to increase
289 children's choices and opportunities to be active at lunchtime. Furthermore, researchers using quantitative
290 methodologies could apply these findings to the development of questionnaires that are designed to
291 predict setting-specific PA. The concept of exploring setting-specific PA and related factors could be
292 expanded to examine other settings and times of the day or year, such as the school holidays. Additional
293 research is needed to explore the impact of the relatively new factors, such as the influence of the uniform
294 and bullying, on children's lunchtime-specific PA behaviour.

295

296 **5. Conclusion**

297 The current literature on the factors influencing PA tend to account for approximately 15 to 20%
298 of the variance in children's PA¹⁸. These findings suggest that there is a need to better understand the
299 factors and search for new factors in order to provide a more comprehensive picture of influences on
300 children's PA behaviour¹⁸. The current study has provided a unique opportunity to explore an array of
301 factors in the context of the lunchtime period and gain a more in-depth understanding of the influences of
302 children's lunchtime play from the children's perspective. Lunchtime interventions targeting children's
303 PA should focus on addressing the barriers perceived to be important to lunchtime play and modify these
304 to increase children's PA opportunities and choices in lunchtime settings.

305

306 **6. Practical Implications**

- 307 • Communicating with children provides a unique opportunity to uncover new factors and better
308 understand the factors that influence children's PA in the context of the lunchtime period.
- 309 • Efforts to promote PA in school settings should focus on addressing important barriers, such as
310 bullying/teasing and access to space and equipment, to increase children's PA opportunities and
311 perceptions of choice in the school yard.

- 312 • Questionnaires targeting setting-specific PA among children should be designed to incorporate
313 barriers and facilitators as perceived by children.

314

315 **Acknowledgements**

316 Rebecca Stanley acknowledges the support from University of South Australia for providing the
317 resources necessary to complete this study. This work was conducted during a PhD candidature in which
318 Rebecca is supported by an Australian Postgraduate Award Scholarship and a University of South
319 Australia Top Up Scholarship.

320

321 **References**

- 322 1. Department of Health and Ageing. *Australia's physical activity recommendations for 5-12 year*
323 *olds*. Canberra: Commonwealth of Australia;2004.
- 324 2. Beighle A, Morgan CF, Le Masurier G, et al. Children's physical activity during recess and
325 outside of school. *J Sch Health*. 2006;76(10):516-520.
- 326 3. McKenzie TL, Marshall SJ, Sallis JF, et al. Student activity levels, lesson context, and teacher
327 behavior during middle school physical education. *Res Q Exerc Sport*. Sep 2000;71(3):249-259.
- 328 4. Ridgers ND, Stratton G, Fairclough SJ. Physical activity levels of children during school
329 playtime. *Sports Med*. 2006;36(4):359-371.
- 330 5. Tudor-Locke C, Lee SM, Morgan CF, et al. Children's pedometer-determined physical activity
331 during the segmented school day. *Med Sci Sports Exerc*. Oct 2006;38(10):1732-1738.
- 332 6. Ridgers ND, Stratton G, Fairclough SJ. Assessing physical activity during recess using
333 accelerometry. *Prev Med*. Jul 2005;41(1):102-107.
- 334 7. Ommundsen Y, Klasson-Heggebo L, Anderssen SA. Psycho-social and environmental correlates
335 of location-specific physical activity among 9- and 15- year-old Norwegian boys and girls: the
336 European Youth Heart Study. *Int J Behav Nutr Phys Act*. 2006;3:32.

- 337 **8.** Darbyshire P, MacDougall C, Schiller W. Multiple methods in qualitative research with children:
338 more insight or just more? *Qual Res.* 2005;5(4):417-436.
- 339 **9.** Spence JC, Lee RE. Toward a comprehensive model of physical activity. *Psych of Sport Ex.*
340 2003;4:7-24.
- 341 **10.** Sallis J, Owen N, Fisher E. Ecological models of health behaviour. In: Glanz K, Rimer B,
342 Viswanath K, Orleans C, eds. *Health behaviour and health education: theory, research, and*
343 *practice.* San Francisco: Jossey-Bass Publishers; 2008:465-485.
- 344 **11.** Sandelowski M. Whatever happened to qualitative description? *Res Nursing & Health.*
345 2000;23(4):334-340.
- 346 **12.** Patton M. *Qualitative Research and Evaluation Methods.* 3rd ed. Thousand Oaks, California:
347 Sage Publications, Inc; 2002.
- 348 **13.** Kennedy C, Kools S, Krueger R. Methodological Considerations in Children's Focus Groups.
349 *Nursing Res.* 2001;50(3):184-187.
- 350 **14.** Colucci E. "Focus groups can be fun": the use of activity-oriented questions in focus group
351 discussions. *Qual Health Res.* Dec 2007;17(10):1422-1433.
- 352 **15.** Krueger R, Casey M. *Focus groups: A practical guide for applied research.* Thousand Oaks:
353 Sage Publications Ltd; 2000.
- 354 **16.** Peterson-Sweeney K. The use of focus groups in pediatric and adolescent research. *J Paediatr*
355 *Health Care.* 2005;19(2):104-110.
- 356 **17.** Veitch J, Salmon J, Ball K. Children's active free play in local neighborhoods: a behavioral
357 mapping study. *Health Educ Res.* Oct 2008;23(5):870-879.
- 358 **18.** Humbert ML, Chad KE, Bruner MW, et al. Using a naturalistic ecological approach to examine
359 the factors influencing youth physical activity across grades 7 to 12. *Health Educ Behav.* Apr
360 2008;35(2):158-173.
- 361 **19.** Harten N, Olds T, Dollman J. The effects of gender, motor skills and play area on the free play
362 activities of 8-11 year old school children. *Health Place.* 2008;14(3):386-393.

- 363 **20.** Haug E, Torsheim T, Sallis JF, et al. The characteristics of the outdoor school environment
364 associated with physical activity. *Health Educ. Res.* 2008.
- 365 **21.** Meadmore D, Symes C. Keeping up Appearances: Uniform Policy for School Diversity? *Bri J*
366 *Educ Stud.* 1997;45(2):174-186.
- 367 **22.** Williams A, Bedward J. Understanding girls' experience of physical education: relational analysis
368 and situated learning. In: Penney D, ed. *Gender and Physical Education: Contemporary issues*
369 *and future directions.* London: Routledge 2002.
- 370 **23.** Espelage DL, Swearer SM. Research on School Bullying and Victimization: What Have We
371 Learned and Where Do We Go from Here? *School Psych Rev.* 2003;32(3):365-383.
- 372 **24.** Merrell K, Gueldner B, Ross S, et al. How effective are school bullying intervention programs? A
373 meta-analysis of intervention research. . *School Psych Quart.* 2008;23(1):26-42.
- 374 **25.** Casey MM, Eime RM, Payne WR, et al. Using a socioecological approach to examine
375 participation in sport and physical activity among rural adolescent girls. *Qual Health Res.*
376 2009;19(7):881-893.
- 377 **26.** Bauer KW, Yang YW, Austin SB. "How can we stay healthy when you're throwing all of this in
378 front of us?" Findings from focus groups and interviews in middle schools on environmental
379 influences on nutrition and physical activity. *Health Educ Behav.* Feb 2004;31(1):34-46.
- 380 **27.** MacDougall C, Schiller W, Darbyshire P. We have to live in the future. *Early Child Dev Care.*
381 2004;174(4):369-387.
- 382 **28.** McKenzie TL, Marshall SJ, Sallis JF, et al. Leisure-time physical activity in school
383 environments: an observational study using SOPLAY. *Preventive Medicine.* Jan 2000;30(1):70-
384 77.
- 385 **29.** Hohepa M, Schofield G, Kolt GS. Physical Activity: What Do High School Students Think? *J*
386 *Adolesc Health.* 2006;39(3):328-336.

387 **30.** Wilson DK, Williams J, Evans A, et al. Brief report: a qualitative study of gender preferences and
388 motivational factors for physical activity in underserved adolescents. *J Pediatr Psychol.* Apr-May
389 2005;30(3):293-297.

390

391

392 Table 1

393 Focus group procedure and questions used during discussions

The procedure for each focus group was as follows:

1. Introductory discussion to focus thinking around the concept of physical activity.
2. School yard mapping activity where children identified where they usually played at lunchtime and the activity they played.
3. A discussion to identify factors that influence children's lunchtime play using the following questions.

When thinking about the time you spend during lunchtime at school...can you tell me about...

- What influences your lunchtime physical activity?
- Why do you/others do this activity?
- Is there anyone who helps you do this activity?
- What helps you or stops you from doing this activity?
- Is there anything that you would really like to do at lunchtime that you can't do or don't do?
- Was there ever a time when you stopped being active at lunchtime?
- What do you think stops children from playing elsewhere in the school yard?
- When you and others are doing this activity, is there anything you have to be careful about?
- Who do you do this activity with?
- What do you think schools can do to help children be more active at lunchtime?

4. Sticker dot activity where children identified the five most important factors.
-

394

395 Table 2

396 The most important perceived barriers to lunchtime physical activity

Factors	Sub-factors	Quotes
<i>Physical Environment</i>		
Access to space	• Lack of access to space	“Where ever you can play, everyone sits there.”
	• Size of space	“...sometimes you don’t have an area that you can play in. There’s just not enough room in the school.”
	• Number of people in space	“Even though it’s a big school there’s lots of people and almost not enough room.”
	• Schools rules (where you are allowed to play)	“We’re not allowed to play [in certain areas of the school].”
	• Condition of space	“The grass gets dry and it hurts when you fall over.”
Suitability of space	• Suitability of space for a chosen activity	“In the junior school there’s [no hiding spaces], it’s so open.”
Access to programs/facilities	• Lack of access to programs/facilities	“We don’t have a pool.”
Access to equipment	• Condition of equipment	“There used to be a soccer net and there used to be footy goals. But they were destroyed.”
Weather	• Weather Policy	“If it is over 36 [degrees] you have to stay in and if it’s raining they ring the bell three times and you have to go in.”
	• Types of weather	“When it’s hot you just kind of sit around and you don’t want to do anything.”
Uniform		“Hats is one big influence...No hat, no play.” “Uniforms cut you back from running and stuff.”
Cost		“Costs too much money [to build facilities].”
Safety	• Injury avoidance	“Lots of older girls walk around at lunch and when you run passed them you almost knock them down so you have to walk.”
Time constraints	• Other	“Sometimes you have meetings so you can’t go outside to

School policy	commitments	play.” “We are only allowed to run on the grass but we’re not allowed to run around the hall, around buildings and if we do we’ll get time out.”
<i>Intrapersonal</i>		
Self-efficacy	• Perceived competence	“I suck at physical running and stuff so I do nothing.”
Behavioural attitude	• Lack of motivation	“There’s not much things to do at school really. It’s really boring.”
Feelings about physical activity	• Activity preference for sedentary pursuits	“Some people think that [school] subjects are more fun than actual play time.”
<i>Social environmental</i>		
Peer Influence	• No-one to play with • Bullying/teasing • Peer barriers	“Sometimes people don’t play because they don’t have any friends.” “[Children] try and hide from the bullies so they can’t do much playing.” “You are very influenced by your friends...if they don’t want to play then you won’t be influenced [to play].”
Teacher Influence	• Teacher barriers	“All the fun stuff, the teachers say “that’s dangerous. You’re not allowed to do that”.”

398 Table 3

399 The most important perceived facilitators of lunchtime physical activity

Factors	Sub-factors	Quotes
<i>Physical environment</i>		
Suitability of space	• Suitability of space for a chosen activity	“Footy on the tennis court or on the gravel is heaps hard...so I play on the oval.”
Access to equipment		“All the sports equipment you can get from the sports shed, like hula hoops, balls, almost anything.”
Weather	• Types of weather	“You can do [skipping] in any weather...and when you do skipping when it’s cold it warms you up.”
<i>Intrapersonal</i>		
Enjoyment	• Challenge	“The game is also good because...you can’t find a good hiding spot which sort of makes the game more interesting.”
	• Socialising	“It’s fun because my friends are there and it’s really fun being with them and doing something that I enjoy.”
Self-efficacy	• Perceived competence	“I am really good at handball so I play all the time.”
Behavioural attitude	• Practice to get better	“We both play in the school cricket team so we treat lunchtimes and recess times as practice mainly.”
	• Socialisation	“Playing football is a form of hanging out with friends.”
	• Something to do	“I guess it’s just something to do rather than just sitting down.”
Belief about physical activity	• Make up your own rules	“At recess and lunch you don’t have to play by the rules so much. You can make up your own rules. You can make it much funner than normal games.”
Feelings about physical activity	• Activity preference	“I prefer handball and pokemon because I like it, it’s the two best things.”
<i>Social environment</i>		
Peer Influence	• Someone/friends to play with	“All they do is walking and they’re probably not going anywhere. They might just walk around in circles and stay in one place but if you have a couple of friends you might play

		chasey.”
	• Peer acceptance	“The people think you are uncool if you are not doing it [skipping].”
	• Peer support	“I want to play with the boys and my friends say ok so then I just do it.”
Teacher influence	• Teacher support	“[Teachers] give us better ideas about what to do and stuff.”
