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Disciplines

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Message framing and the use of incentives – are they effective in increasing participation rates in disease management programs?

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Abstract

Disease-and-risk management programs provide many benefits for individuals currently living with a chronic illness as well as those who possess one or more risk factors for developing a chronic condition (such as high blood pressure, high cholesterol or obesity). However, participation rates in such programs are well below their desired level and often reported as being a particularly problematic and complex issue (e.g., Foster, Kendall, Dickson, Chaboyer, Hunter and Gee, 2003). This study aimed to determine the most effective strategies for increasing participation rates using a combination of prospect theory (via message framing), inclusion of an incentive, and comparing two different delivery methods (phone and mail). The study found no significant effect for message framing or incentives.

Theoretical Framework

Chronic diseases have been growing in prevalence in the twentieth century and several factors have contributed to the emergence of what is now described as an “epidemic” (Crews and Gerber, 1994). These factors include complex social, cultural and technological changes, which have exerted a significant impact on the health of the population and have become large contributors of illness, disability and premature mortality (Swinburn, Egger and Raza, 1999). Currently in Australia, an estimated three million people suffer from one or more chronic conditions (Australian Institute of Health and Welfare, 2002) with the most common being cardiovascular disease, some forms of cancers, diabetes, asthma and mental illnesses such as depression (Australian Institute of Health and Welfare, 2001). Disease management programs were developed as a means of overcoming many of the burdens associated with the mounting chronic disease rate and this is primarily achieved by reducing the incidence of chronic diseases through prevention strategies, delaying the onset of disability, alleviating the severity of disease and prolonging the individual’s life (Brownson, Remington and Davis, 1998:5). However, it has been acknowledged that participation rates in such programs are well below their desired level – despite all the known benefits of participation.

This study will examine prospect theory (through the use of message framing), inclusion of an incentive, and comparison of different delivery methods (phone and mail) to determine the most effective strategies to increase participation rates in a disease-and-risk management program offered by a national health insurance provider.

Prospect theory was developed by Tversky and Kahneman (1979) in the late 1970’s to address the shortcomings associated with utility theory, namely its failure to adequately explain how individuals make decisions under conditions of uncertainty (Edwards, 1996) and today prospect theory has evolved to become one of the leading theories regarding decision-making. The theory postulates that people evaluate information in terms of either potential gains or losses from a

particular reference point (Smith and Petty, 1996) and this offers a conceptual framework within which to understand shifts in preferences from risky to certain as the decision frame changes from loss to gain (Rothman and Salovey, 1997). According to prospect theory, people tend to prefer the sure option when two alternatives are framed positively (in terms of gains) and the risky option when two alternatives are framed negatively (in terms of losses). This suggests that people have “different orientations in win situations versus loss situations” (Toland and O’Neill, 1983:53) and tend to be risk averse when messages are framed positively and risk taking when messages are framed negatively (Schie and Van der Plight, 1995).

In addition to prospect theory, incentives will also be tested because of their ability to induce the desired response and/or bring about the desired behaviour with the word incentive itself derived from the Latin word meaning *to stimulate* (American Heritage Dictionary of the English Language, 2000). The use of incentives, also commonly referred to as rewards, can be explained using B.F. Skinner’s Operant Conditioning. According to Skinner, people respond in certain ways to either gain a reward or avoid a punishment (labeled by Skinner as positive reinforcement and negative reinforcement, respectively) (Kardes, 2002). Positive and negative reinforcement have the ability to “strengthen or increase the probability of a target response” (Kardes, 2002:205), hence the popularity and wide application of incentives in a range of situations and disciplines.

And lastly, this study will also test the best way to communicate with members of a national health insurance provider to increase participation rates. Two different delivery methods will be tested – an invitation phone call and mailed letter – each of which has their own advantages and disadvantages. For example, phone calls are considered more personal, however, they may not give people adequate time to make an informed decision. Mailed letters on the other hand allow recipients to absorb the information at their own pace and make an informed decision, however, they are impersonal in nature and do not allow questions and concerns to be addressed in a timely manner.

Aim of the Study

This study aims to determine, via a series of randomised controlled trials, the most effective strategies for maximising the recruitment of at-risk adults in disease-and-risk management programs.

Methodology

This study was conducted in collaboration with Australian Health Management (ahm), which is the eighth largest provider of health insurance in Australia. The health fund is focused not only on the provision of insurance but also on the health and wellbeing of their members and this is reflected in their mission statement, that is, to “offer a balanced mix of insurance and health management products which together promote and sustain long-term good health” (Australian Health Management, 2003). This is achieved through the provision of a disease-and-risk management program called Total Health.

Total Health aims to help members suffering from chronic conditions such as arthritis, asthma and diabetes better manage their condition and disease related problems. In addition, it also aims to help individuals with one or more risk factors for a chronic condition make the lifestyle changes needed to prevent the onset of disease. This involves setting a goal with an ahm health consultant, developing an action plan and telephone support. However, despite the known benefits, participation rates are typically low and often reported as being a particularly problematic and complex issue (Foster, Kendall, Dickson, Chaboyer, Hunter and Gee, 2003).

The study was designed to investigate ways to increase participation rates in ahm's disease-and-risk management program, Total Health. All ahm members are eligible to enrol in Total Health once they have completed their Health Risk Assessment (HRA), that is, a health questionnaire sent to all members asking them a series of health questions and this is used to enable a health profile of the member to be developed. All members who complete the HRA are sent an in-depth report on their health with recommendations to enable the member to achieve optimal health.

Sample Population: Two experiments were conducted using a sample of 2945 ahm members. These members were randomly selected from ahm's database. The first experiment involved members receiving an invitation letter (n= 1445) and the second was an invitation phone call (n= 1500) – both of which aimed to encourage members to join Total Health.

Message Framing: The letters and phone calls were either positively or negatively framed, with or without an incentive. Unfortunately there was no control group for the letter condition (which was conducted first), however, this was later rectified for the call condition (see Table 1). The control group received a standard message, that is, a neutral message that didn't employ any positive or negative messages.

Positive message:

Did you know?

- Maintaining a healthy weight can reduce your risk of developing diabetes
- Eating a healthy diet can provide you with increased energy
- Regular exercise can prevent heart disease

Take this opportunity to join Total Health and you will be provided with the support and motivation needed to meet your important health goals. Taking action can help you improve your quality of life.

Negative message:

Did you know?

- Being overweight can increase your risk of developing diabetes
- Eating an unhealthy diet can make you feel tired and lethargic
- Lack of exercise can lead to heart disease

Miss this opportunity to join Total Health and you will pass up the chance to be provided with the support and motivation needed to meet your important health goals. Failing to take action can decrease your quality of life.

Incentive: The incentive used was a \$10 Rebel Sport gift voucher. This was offered to half the sample population, using a random allocation process, upon enrolment and participation in Total Health (that is, it was a post-incentive). A gift voucher was chosen because it would allow members to purchase sporting goods and thus hopefully encourage members to engage in physical activity.

Results

Message framing: As shown in Table 1, negatively framed messages performed better than positively framed messages (152 vs.124) however; the difference was not significant ($t=1.58$, ns).

Incentives: As shown in Table 1, the results of the study suggest that incentives are effective, with the incentive group outperforming the non-incentive group for all conditions tested except for the positive letter, although it again this difference was not statistically significant ($t=1.58$, ns)

Call vs. Letter: As shown in table 1, the letter condition performed slightly better than the call condition (154 vs. 122)¹ although not statistically significant ($t=1.00$, ns)

Table 1: Enrolment rates for letter and call conditions

Letter Type	Response Rate	Call Type	Response Rate
Positive	40	Positive	24
Positive w. incentive	26	Positive w. incentive	34
Negative	42	Negative	21
Negative w. incentive	46	Negative w. incentive	43
		Standard	25
		Standard w. incentive	54

Discussion

Negative messages slightly outperformed positive messages and this suggests that members in the sample population may be more responsive to what B.F. Skinner labeled as ‘negative reinforcement’ or the punishment associated with not joining Total Health. However, the results are not significant. Hence message framing did not have any significant effect on member’s intention to join Total Health and this suggests that greater attention needs to be given to more important variables – such as the actual messages themselves or the perceived credibility of the source.

The use of a tangible incentive did increase participation rates, however, statistical analysis found that this increase was not statistically significant. This failure to find a significant difference could be largely due to the fact that only one type of incentive was tested – a \$10 Rebel Sport Gift Voucher – which may not have been sufficiently appealing to the target group. For example,

¹ does not incl. standard calls

we do not know if other denominations would prove to be more effective, as there are few things that could be purchased for \$10 in a store such as Rebel Sports. It is recommended that future studies should test different denominations of the gift voucher, for example \$20 and \$50, to determine if members are more responsive to a higher amount. However, from an ahm perspective they did not want the incentive to be seen as a bribe but rather as an encouragement to join Total Health. In addition, different types of incentives should also be tested to determine if incentives that are related to the health behaviour change in question are more effective (for example, a cook book for members whose goal is to eat healthier). From an organisational perspective, the use of incentives can be very costly and as a result, a cost benefit analysis will need to be conducted to determine the feasibility of offering members an incentive.

Lastly, the invitation letter performed better than the invitation phone call, although again the difference was not statistically significant. However, the slightly higher participation rates obtained from those members who received the letter suggests that the decision to join a health program, such as Total Health, is a high-involvement decision. This is largely due to the time and effort members will need to invest when participating in such a program. Hence, members may prefer to have the information in front of them so they can read and process it at their own speed and make an informed decision, rather than being asked over the phone and having to make an on-the-spot decision. Future studies should therefore test to see if there is a significant difference between an invitation phone call and a more comprehensive mailout package, that is, coupling information brochures with the invitation letter to increase the amount of information made available to members during the decision making phase.

Limitations and Direction for Future Research

The main limitation noted with this study was that it was only carried out with members who have completed their HRA. Thus it is recommended that a follow-up study be carried out with members who have not completed their HRA to determine whether or not the HRA acts as an impediment to participation in Total Health. The follow-up study should also include a control group for both the letter and phone call condition, that is, the use of a non-framed message. Furthermore, it is also recommended that different levels and types of incentives be tested. This will enable the most optimal incentive type and level to be ascertained.

Conclusion

The results of this study suggest that message framing has no effect on people's decision to join a disease-and-risk management program. Hence, less focus should be played on message framing and instead greater attention should be directed towards the actual messages themselves and other more influential variables, for example, the credibility of the source and interaction factors. While the results of both the incentive and delivery method showed no significant effect, the slightly higher results for the incentive and letter condition proves promising and provides a basis for additional studies to be carried out which will further explore these areas in depth.

References

American Heritage Dictionary of the English Language (2000) 4th Edition, Houghton Mifflin Company.

Australian Health Management (2003). AHMG Annual Report. Available at www.ahm.com.au

Australian Institute of Health and Welfare (2001). Chronic diseases and associated risk factors in Australia, 2001. Cat. No. PHE 33. Canberra.

Australian Institute of Health and Welfare (2002). Trends in death: Australian data, 1987-1998. Mortality Surveillance Series no. 3 Cat. No. PHE 40. Canberra.

Brownson, Remington and Davis (1998). Chronic disease epidemiology and control. 2nd Ed. American Public Health Association, Washington D.C.

Crews and Gerber (1994). Chronic degenerative diseases and ageing. In Crews and Garruto (eds). Biological anthropology and ageing. New York. Oxford University Press. 154-181.

Edwards, Kimberly D (1996). Prospect theory: A literature review. International Review of Financial Analysis. 6(1): 19-38

Foster, Kendall, Dickson, Chaboyer, Hunter and Gee (2003). Participation and chronic disease self-management: Are we risking inequitable resource allocation?. Australian Journal of Primary Health. 9(2 and 3): 132-140.

Kardes, Frank (2002). Consumer behaviour and managerial decision making. 2nd Edition. Prentice Hall. Cincinnati.

Rothman, Alexander and Salovey, Peter (1997). Shaping perceptions to motivate healthy behavior: The role of message framing. Psychological Bulletin. 121(1): 3-19.

Schie, Els and Van der Plicht, Joop (1995). Influencing risk preferences in decision making: the effects of framing and salience. Organizational Behavior and Human Decision Processes. 63(3): 264-275.

Smith, Stephen and Petty, Richard (1996). Message framing and persuasion: a message processing analysis. Personality and Social Psychology Bulletin. 22(3): 257-268.

Swinburn, Egger and Raza (1999). Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. Preventative Medicine. 29: 563-570

Toland, Anne and O'Neill, Patrick (1983). A test of prospect theory, Journal of Economic Behavior and Organization. 4:53-56

Tversky, Amos and Kahneman, Daniel (1979). Prospect theory: An analysis of decision under risk. *Econometrica*. 47(2): 263-292.