

Eliciting the Salient Beliefs of Physical Activity for Saudi Young People

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Abstract

The elicitation study of physical activity for Saudi youngsters (N= 104; boys= 56, girls= 48; age $M= 15.1$ years, $SD= 1.2$) aimed to identify the modal salient behavioral, normative, and control beliefs. Results revealed that youngsters recalled a limited number of beliefs, and also showed that the contents of modal salient behavioral (active or energetic, fatigue or tired, strength, weight control, fitness, blood circulation, and injury), normative (friends, father, relatives, mother, sisters and athletes) and control beliefs (lack of places and facilities, of time, of equipment, of social support, and bad weather) were endorsed by at least 30% of the sample and for each gender.

Introduction

Overweight and obesity are recently an essential public health concerns in Saudi Arabia among both adults and young people (e.g., Al-Hazzaa, 2002; 2004; 2009). A previous study reported that the prevalence of overweight among Saudi adults (Al-Hazzaa 2002; Al-Nuaim, Bamgboye, Al-Rubeaan & Al-Mazrou, 1997; Elhazmi & Warsy, 1997) and among Saudi children (Al-Hazzaa, 2000; Al-Hazzaa, 2001; Al-Hazzaa, Sulaiman, Al-Mobaireek & Al- Attass, 1993) has been increased alarmingly from 40 to 56% in the last decades. This noticeable epidemic of overweight and obesity is a cause of concern, since obesity is related to several problems that raise illness and death rates (Al-Rukban, 2003).

The TPB suggests that the determinants of attitude, subjective norms and PBC are assumed to combine multiplicatively (Ajzen, 1991). Attitude towards a behaviour are determined by an individual's beliefs about the outcomes of the behaviour (behavioural beliefs), and the extent to which these outcomes are valued (belief outcomes) (Ajzen & Fishbein, 1980). For example, although people may believe that exercise will improve their health, they may also believe that the pain that it may cause may not be worthwhile. Subjective norms relate to the influence of people in one's social environment on an individual's behavioral intention. It is determined by perceptions of whether important referents think that an individual should or should not execute the behavior (normative beliefs), and the motivation of the individual to comply with the beliefs of important referents (motivation to comply). If a young boy believes that his mother wants him to exercise, and he values her opinion, his motivation to exercise may be higher.

The concept of PBC focuses on the belief that the presence of factors may either facilitate or prevent behavioral achievement (control beliefs), and that the perceived ability to control these factors may influence the behavioral achievement (power of control). For example, the fewer resources and opportunities that individuals may believe they have (e.g., lack of time to exercise), and the more hindrances they have (e.g., no one to look after the children this week), the lower their perception of control is for performing the behavior.

According to the TPB, a salient beliefs elicitation study is essential to assess the target behavior of members of the population of interest (Hagger, Chatzisarantis & Biddle, 2002). The aim of an elicitation study is to determine the salient consequences, referents, and circumstances that form the beliefs structure. These salient beliefs should be elicited for each new behavior and priority group (i.e. young, old, fit, inactive). To determine the modal salient beliefs, Ajzen and Fishbein (1980)

suggested that investigators should initially conduct an elicitation study with representatives of the priority group. They suggested that open-ended questions may identify beliefs that are related to a priority group's consequences, referents, and circumstances. A content analysis is performed to rank order the beliefs. The most frequently mentioned items (usually 5 to 9) are considered the modal salient beliefs (Ajzen & Fishbein, 1980).

In contrast with Ajzen and Fishbein's suggested procedure, there is a body of argument arising from research related to the number of salient beliefs that determine attitude, subjective norms and PBC. However, research has suggested that selecting 9 salient beliefs is not realistic, as people's capacity for information processing may be restricted (Payne, Bettman & Johnson, 1993). According to van der Pligt and Eiser (1984), models with up to five beliefs would express a more realistic view of information processing. In their study, they demonstrated that models with five important beliefs provided information of equal value about attitude formation as a model with nine salient beliefs.

Although there is evidence to support the use of the TPB to understand a variety of behaviors, including physical activity (e.g., Baker, Little & Brownell, 2003; Courneya, 1995; Godin & Kok, 1996; Hagger et al., 2002; Hausenblas, Carron & Mack, 1997; Rosen, 2000), research has not focused so prominently on identifying the common elicited beliefs of young people. Empirical evidence demonstrated that the most common salient behavioral beliefs of physical activity participation in young British (Hagger, Cale & Almod, 1997) and Americans (Backman, 1999) are to (in no specific order): a) Improve health, b) Stay in good shape, c) Have fun, d) Make

friends, e) Reduce tiredness, f) Increase the risk of injury. The most frequent salient normative beliefs include parents, siblings, grandparents, friends, teachers and coaches (Hagger et al., 1997; Backman, 1999). Backman (1999) suggested that lack of time, money support, motivation, exercise knowledge, and access to equipment or activity programs are the most common salient control beliefs in American culture. Although similar behavioral beliefs have been reported with Chinese students aged 13 to 15 years (Zhang, Middlestadt & Ji, 2007), the pre-dominant normative and control beliefs have been shown to be different. Zhang and colleagues emphasized that parents are the most important referent for participation in physical activity (normative belief), while homework commitments and not having enough time are the most common control beliefs.

A recent review of concerning the physical exercise domain (Symons Downs & Hausenblas, 2005) provides summary information for this particular domain. They observed 47 studies that had considered elicitation studies to identify salient behavioral, normative, and control beliefs about exercising. The findings showed that salient behavioral beliefs associated exercising with such as improved physical and psychological health, control of body weight, improved daily functioning, increased energy, stress relief, relaxation, experiencing pain and injury, fatigue, and time expenditure. The most salient normative beliefs related to family members, friends, and health-care professionals. Finally, the most salient control beliefs as obstacles were lack of time, health problems (injury, pain), lack of social support, inconvenience and lack of energy; and as facilitators were convenience, pleasure obtained from physical activity, and social support.

Although Albakry (2007, Study 1) has conducted a study focusing on the elicitation of the modal salient behavioral, normative and control beliefs regarding physical activity of Saudi adults, to best of the research's knowledge, there has been no study with Saudi youngsters. Therefore, the purpose of the current study is to identify the modal salient behavioral, normative, and control beliefs concerning vigorous exercise of Saudi boys and girls 13 to 17 years of age. Furthermore, this study will provide preliminary knowledge and content of Saudi youngsters' beliefs for larger scale theory-based quantitative studies. On the assumption that there are no previous studies examining beliefs about physical activity in a Saudi Arabian context among a young population, no formal hypotheses regarding the content and the modal salient beliefs are made.

Method

Participants And Sample Characteristics

A sample of 104 Saudi youngsters (56 boys and 48 girls) with mean age of 15.2 (SD =1.2), volunteered to take part in the study. Although one hundred and thirty Saudi youngsters were invited to take part in the study, twenty-six youngsters (20 %) did not complete the questionnaire or obtain parental consent. Ethical approval was obtained from the General Management of Education for Boys and for Girls in the Riyadh Area (Saudi Arabia). The Management of Education for both genders identified the schools to be included in the sample. Within the schools participants were randomly recruited from middle (13 to 15 years) and high schools (15 to 17 years)*.

Procedure

Prior to Saudi boys' participation in the study, parental consent forms and questionnaires were handed to the principal of each school by the investigator. These forms were completed and signed by the students' parents within a week and returned to each school's principal. The questionnaires had a cover letter stating the purpose and value of the study, and an explanation of the meaning of the term "vigorous exercise" (Appendix C). The cover letter emphasized that data collection was anonymous; that there were no right or wrong answers; and that participation should be voluntary. The questionnaires were distributed to the students during school hours. Students had approximately ten minutes to complete the questionnaires. Students returned the completed questionnaire to their class teacher, who passed them on to the school principal.

* There are three grade classifications (1, 2, & 3) within middle and high schools. Grades 2 and 3 from middle schools and grades 1 and 2 from high schools are streamed.

Due to the nature of the Saudi culture, the principal investigator was unable to personally contact the randomly selected girls' schools. As such, a co-operative and fully briefed female teacher was responsible for the procedures aforementioned for the boys' schools.

Instrumentation

Following the procedures suggested by Ajzen & Fishbein (1980) and Ajzen (2002), an open ended questionnaire was used to elicit modal salient behavioral, normative and control beliefs. The open-ended questions (Table 3.1) prompted participants to state their beliefs about exercising vigorously for at least 30 minutes, 3 days per week in leisure time (not including school hours) in relation to: (1) advantages and disadvantages (behavioral beliefs), (2) people and referents who would approve or disapprove (normative beliefs), and (3) factors or circumstances that enable or make exercise difficult (control beliefs). The type and frequency of exercise participation, if any, was also obtained.

Translation And Modification Of The Questionnaires

The questionnaire (Appendix C) was translated from English into Arabic by the principal investigator. With the help of a professional translation office in Saudi Arabia, a second translation of the questionnaire into Arabic was undertaken, which was then translated back into English. The researcher compared the two Arabic translations and came up with a refined draft of the Arabic version of the questionnaire. A panel of two Arab experts then reviewed and evaluated the drafts of both the English and Arabic versions for content analysis. Ambiguities and

difficulties with the translations were discussed and resolved by the panel. After the draft of the Arabic version of the questionnaire was evaluated, it was then pilot tested on an appropriate sample of 16 young Saudi students. Modifications were made according to the comments made by these students in order to clarify the content. The students individually suggested the substitution of a number of words and expressions by synonyms in order to facilitate comprehension and to ensure cultural and linguistic accuracy.

Data Analysis

Modal salient beliefs were obtained by calculating the frequency with which participants expressed their beliefs from the open ended questionnaire. Ajzen (2002) suggests that beliefs with similar content should be categorized. Adopting this suggestion, the beliefs presented in this study are therefore belief categories.

This study does not use any concrete measures in assessing modal salient beliefs. This is an inherent limitation of the TPB. According to Ajzen and Fishbein (1980), beliefs that are indicated by at least 30% of the participants can provide the foundational basis for assessing modal salient beliefs. In this study, a 30% standard was consequently used to assess modal salient beliefs in both genders.

Results

Behavioral Beliefs

Table 3.2 reports the 12 most common behavioral beliefs for Saudi youngsters. While four salient behavioral beliefs meet Ajzen and Fishbein's (1980) recommended 30% value for the whole sample and girls, boys reported five salient behavioral beliefs greater than this value. Behavioral beliefs concerning outcomes relating to 'active or energetic', 'fatigue or tired', 'strength' and 'weight control' were the modal salient behavioral beliefs for the whole sample. Boys endorsed 'active or energetic', 'fatigue or tired', 'strength', 'fitness', and 'injury' as modal salient behavioral beliefs, while although girls also prominently reported 'active or energetic' and 'fatigue or tired', they also emphasized 'weight control', and 'blood circulation' to be important modal salient behavioral beliefs.

The table demonstrates that the order of behavioral beliefs varied in accordance with gender. For example, while 'strength' was the most common belief for boys, it was not salient for the girls. As such, 'strength' was only listed third for the entire sample. Conversely, while 'weight control' was the second most common belief for the girls, it was less important for the boys, thus it was listed fourth for the entire sample. Although 'fitness' and 'injury' were salient beliefs for boys, and 'blood circulation' was a modal salient belief for girls, these beliefs were less salient for the whole sample.

Normative Beliefs

Table 3.3 lists the 9 most common normative beliefs for the Saudi youngsters. While four normative beliefs can be considered as modal salient normative beliefs for

the whole sample and for girls, only three normative beliefs are modal salient beliefs for boys. Normative beliefs reflecting influence from 'friends' were the most common modal salient normative beliefs for all Saudi boys and girls.

Although the normative beliefs concerning influences from 'father', 'relatives' and 'mother' were modal salient beliefs for the whole sample, 'father' was salient only among boys while 'relatives' and 'mother' were salient only among girls. Normative beliefs concerning influences from 'sisters' were salient only for girls, whereas the normative beliefs concerning influences from 'athletes' were salient beliefs only for boys.

Control Beliefs

Table 3.4 lists the 9 most common control beliefs for Saudi youngsters. Although there were 3 modal salient control beliefs for the whole sample and for boys, 5 modal salient beliefs were reported for girls. The modal salient control beliefs of 'lack of places and facilities', 'lack of time' and 'lack of equipment' were observed for the whole sample, boys and girls.

However, Saudi girls also reported 'lack of social support' and 'bad weather' to be obstacles that may influence their perception on their control of participating in vigorous physical activity.

Discussion

The purpose of this study was to identify the modal salient behavioral, normative and control beliefs related to the physical activity of Saudi youngsters aged 13 to 17 years. The pertinent findings from the present study relate to the number and content of the physical activity beliefs.

The Number of Physical Activity Beliefs

The findings from the present study support previous research which have shown that people remember and process up to five beliefs (Backman, 1999; van der Pligt & Eiser, 1984; Zhang et al., 2007). Although a variety of beliefs (N= 30) were reported by Saudi youngsters (whole sample, boys & girls), up to five behavioral, normative and control beliefs are predominantly salient associated with physical activity. This saliency accounted for approximately 30% of the responses, and is in accordance with the proposition suggested by Ajzen and Fishbein (1980). The study supports van der Pligt and Eiser's (1984) suggestion that attitude can be generalized between cultures. In addition, these findings with Saudi youngsters support previous researches within a British (Hagger et al., 1997), American (Backman, 1999) and Chinese (Zhang et al., 2007) culture, that young people may only be able to remember and process a limited number of beliefs during the formation of attitude, subjective norms and PBC.

The Content of Physical Activity Beliefs

Behavioral Beliefs. The modal salient behavioral beliefs for the whole sample were 'active or energetic', 'fatigue or tired', 'strength' and 'weight control'. These findings support previous research within an American culture (Backman, 1999). However, it is interesting to note that only the beliefs of 'strength' and "being tired"

were associated with Chinese young people (Zhang et al., 2007). Only two types of the behavioral beliefs, 'active or energetic' and 'fatigue or tired', were shared between the Saudi boys and girls. Although Saudi boys also reported 'strength', 'fitness', and 'injury' as modal salient behavioral beliefs, Saudi girls suggested 'weight control' and 'blood circulation' to be important indicators of modal salient behavioral beliefs.

These findings support previous research with Saudis adults (Al-Hazzaa, 2000; Al-Nuaim et al., 1997). Abalkhail and Shawky (2002) suggested that Saudi boys pursue the enhancement of 'strength' and 'fitness' in physical activity due to their association with masculine traits. Participations in competitive sport, or indeed the endeavor to improve sporting competence, are typical characteristics of Saudi boys. Alternately, girls do not tend to report 'strength' and 'fitness' because physical strength is not considered an important attribute for Saudi females (Al-Nuaim et al., 1997). Previous research has shown that Saudi girls may idealize a lean body and prefer to be involved in physical activity for health purposes (Al-Hazzaa, 2007). As such, this is the likely reason for why girls suggest 'weight control' and 'blood circulation' to be important behavioral beliefs. This is similar to other countries (USA, UK and China). Due to the Saudi boys' masculine perception of physical activity, 'injury' was also reported as an important modal salient behavioral belief. This may be the consequence of boys taking part in more strenuous and demanding physical activity than girls, thus increasing the risk of physical damage and injury (Aleissa, 2001).

The order of behavioral beliefs concerning physical activity was also different between Saudi boys and girls. Specifically, while beliefs related to 'active or energetic' were the most common beliefs in the list of modal salient beliefs for the Saudi girls, this was the third most common belief in the list of modal salient beliefs

for the boys. These findings once again show that, at least with respect to Saudi Arabian youngsters, the structure is different across boys and girls (Ajzen & Fishbein, 1980).

Normative Beliefs. Findings related to normative beliefs suggested that the most common modal salient normative beliefs were ‘friends’, ‘father’, ‘relatives’, and ‘mother’ for the whole sample. These findings are very similar to those reported with young British (Hagger et al., 1997), American (Backman, 1999) and Chinese (Zhang et al., 2007) young people. Although Saudi boys and girls shared the normative belief of ‘friends’, Saudi boys also reported ‘father’ and ‘athletes’ to be important normative beliefs, while Saudi girls reported ‘relatives’, ‘mother’ and ‘sisters’ as modal salient normative beliefs (Role Model). Furthermore, as Saudi society is very conservative, in which relatives consider that girls’ outside exposure for such activities is shameful, Saudi girls are aware that outside exposure is viewed negatively in Saudi culture.

An additional difference is related to ‘athletes’ normative beliefs among Saudi boys only. This finding suggests that because boys in this particular age are probably influenced by the sporting media, therefore, ‘athletes’ as a normative belief directly or indirectly seems to play a major role model for Saudi boys and may play a valuable role in promoting exercise adoption.

Control Beliefs. With respect to control beliefs, ‘lack of places and facilities’, ‘lack of time’ and ‘lack of equipment’ were the most common control beliefs. In consistent with the other studies’ findings (Backman, 1999; Zhang et al., 2007), only ‘lack of time’ is common control beliefs inhibiting exercise participation for these young

populations; however, the finding of 'lack of equipment' was only consistent with American study's findings (Backman, 1999).

A theme that has emerged from this study is that 'lack of places and facilities' are the most common salient control beliefs. This may be due to Saudi Arabia being considered a developing country. At present, Saudi Arabia has a less established structure, particularly with regards to the opportunity to take part in physical activity, compared to countries such as the USA, UK and China. In the recent years, the Saudi government has started to invest in resources to promote physical activity (Albakry, 2002; Alsaif, Hakim, Harris, Alduwaihy, Al-Rubeaan, Al-Nuaim et al., 2002).

However, the policies and campaigns that are used to promote regular physical activity participation are rare in Saudi Arabia (Albakry, 2002; Alsaif et al., 2002). A further explanation may be related to the extreme Saudi Arabian climate (very hot, very cold, sandstorms). This diverse climate may limit the opportunity to regularly participate in physical activity outdoors, thus emphasizing the importance of "places and facilities" to be a common control belief.

Saudi youngsters also considered 'lack of time' to be an important control belief. This finding concurs with others studies. A study by Rasheed (1999) demonstrated that the lack of time is one of beliefs that related to exercise participation. Al-Hazzaa (2004) reported that Saudi youngsters spend, on average, a limited time on physical activity. The emphasis on 'lack of time' may be due to the busy school's schedule, both within and outside (homework) school hours, but also due to the extreme climate previously mentioned. Indeed, according to the Ministry Of Education in Saudi Arabia (MOE, 2010), most Saudi schools start classes at 7:00 am and finish at 13:00.

Not only is it too early to exercise before school, after 13.00, temperatures typically exceed 45 °C (summer months), thus limiting the opportunity to participate in physical activity.

Although Saudi boys and girls shared those three salient control beliefs, only Saudi girls reported 'bad weather' and 'lack of social support' as modal salient control beliefs to prevent them from exercise. Additional barrier to girls' exercises is related to the social supports.

Conclusion

This study elicited successfully the modal salient behavioral, normative, and control beliefs regarding the vigorous physical activity participation. The study demonstrated important commonalities and differences in the content of these beliefs across gender of the Saudi youngsters. Commonalities in the content of behavioral beliefs are concerning active or energetic, fatigue or tired, strength, weight control, and the differences are related to fitness, injury and blood circulation. The commonalities of the content of normative beliefs are associated with reflecting influences from friends, father, relatives and mother, and the differences revolve around sisters and athletes. Finally, the commonalities of the content of control beliefs concerning the hindrances to exercise are associated with lack of place, time and equipment, and the differences are related to lack of social support and bad weather.

This type of rapid elicitation method to determine the salient behavioral, normative, control beliefs to be changed with the members of the population of interest can serve a major purpose. Elicitation findings are fundamental to constructing close-ended items for theory-based instruments to be used in larger scale quantitative formative research. Specifically, following the recommendations of the TPB (Ajzen, 1991; Ajzen & Fishbein, 1980), the salient behavioral, normative, and control beliefs presented in the tables can be used to generate indirectly the measures of attitude, subjective norms and PBC respectively of the Saudi youngsters.

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Table 1 Open-ended questions for behavioural (1 & 2), normative (3 & 4) and control (5 & 6) beliefs.

Constructs	Questions
Behavioural beliefs	1) What do you believe are the advantages of your exercising vigorously for at least 30 minutes, 3 days per week over the next four weeks in leisure time (i.e. not in school)?
	2) What do you believe are the disadvantages of your exercising vigorously for at least 30 minutes, 3 days per week over the next four weeks in leisure time (i.e. not in school)?
Normative beliefs	3) Which individuals or referents would approve of your exercising vigorously for at least 30 minutes, 3 days per week over the next four weeks in leisure time (i.e. not in school)?
	4) Which individuals or referents would disapprove of your exercising vigorously for at least 30 minutes, 3 days per week over the next four weeks in leisure time (i.e. not in school)?
Control beliefs	5) What factors or circumstances would enable you to exercise vigorously for at least 30 minutes, 3 days per week over the next four weeks in leisure time (i.e. not in school)?
	6) What factors or circumstances would make it difficult or impossible for you to exercise vigorously for at least 30 minutes, 3 days per week over the next four weeks in leisure time (i.e. not in school)?

Table 2 Most common behavioral beliefs from 56 Saudi boys and 48 Saudi girls (N= 104). Frequencies and percents mentioned for the whole sample, boys and girls

No	Behavioural beliefs	Total		Gender			
		No	Percent Mentioning	Boys	Percent Mentioning	Girls	Percent Mentioning
1	Active or energetic	50	48	20	36	30	63
2	Fatigue or tired	34	33	18	32	16	33
3	Strength	34	33	27	48	7	15
4	Weight control	34	33	13	23	21	44
5	Fitness	23	22	22	39	1	2.1
6	Blood circulation	23	22	7	13	16	33
7	Injury	20	19	17	30	3	6.3
8	Stay healthy	13	13	8	14	5	10
9	Having fun	11	11	6	11	5	10
10	Having skills	9	9	5	9	4	8
11	Wasting time	6	6	3	5	3	6
12	Disease prevention	2	2	1	2	1	2

* The figures in bold are the modal salient behavioral beliefs.

Table 3 Most common normative beliefs from 56 Saudi boys and 48 Saudi girls (N= 104). Frequencies and percents mentioned for the whole sample, boys and girls

No	Normative beliefs	Total		Gender			
		No	Percent Mentioning	Boys	Percent Mentioning	Girls	Percent Mentioning
1	Friends	44	42	23	41	21	44
2	Father	32	31	21	38	11	22
3	Relatives	31	30	13	23	18	38
4	Mother	31	30	14	25	17	35
5	Sisters	19	18	3	5	16	33
6	Athletes	18	17	17	30	1	2
7	Brothers	5	5	2	4	3	6
8	Parents	3	3	1	2	2	4
9	Neighbours	2	2	1	2	1	2

* The figures in bold are the modal salient normative beliefs.

Table 4 Most common control beliefs from 56 Saudi boys and 48 Saudi girls (N= 104). Frequencies and percents mentioned for the whole sample, boys and girls

No	Control beliefs	Total		Gender			
		No	Percent Mentioning	Boys	Percent Mentioning	Girls	Percent Mentioning
1	Lack of places and facilities	45	43	18	32	27	56
2	Lack of time	33	32	17	30	16	33
3	Lack of equipment	32	31	17	30	15	31
4	Lack of social support	28	27	13	23	15	31
5	Bad weather	26	25	11	20	15	31
6	Lack of energy	7	7	4	7	3	6
7	Health circumstances	5	5	3	5	2	4
8	Psychological circumstances	3	3	1	2	2	4
9	Injuries	2	2	2	4	0	0

* The figures in bold are the modal salient control beliefs.