

Developing an Interventional and Educational Program Based on Social Marketing Approach to Increase Regular Physical Activity in Girl Students: A Qualitative Study

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Research

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Abstract

Background : Physical activity is one of the key factors in children and teenagers' health. The present paper follows a qualitative approach to identify subjects' viewpoints about regular physical activity and determine approaches to promote it based on social marketing mix.

Methods: The study was carried out as a qualitative content analysis study in 2020 in Kermanshah city, Iran . Totally, 23 students as the main participants along with five parents and four physical trainers were selected through purposive sampling. After data analysis and extraction of primary codes, four categories emerged based on the elements of social marketing mix (product, price, place, and promotion) along with subcategories.

Results: The majority of participants emphasized on the advantages namely prevention of chronic diseases, physical fitness, increased concentration, better learning performance, and a decrease in depression. They noted that they preferred a happy and friendly environment for doing physical activity. The teenagers listed fitness clubs, the media, and social media as preferred places to receive educational messages.

Conclusion: The results showed that physical activity in teenagers was affected by personal, environmental, and social obstacles. The results gave an insight and a deeper knowledge about values and motivations in teenagers that affect their decision to do regular physical activity.

Introduction

Physical activity is one of the key factors in achieving health in children and teenagers, which can prevent a wide range of diseases [1, 2]. The results showed a growing trend of less or no physical activity in the world and the developing countries in particular [3]. Lack of physical activity or no physical activity are not consistent with a healthy life and it is growing in different age groups and teenagers in particular [4]. It is one of the main causes of non-contagious diseases such as cardiovascular diseases, diabetes, hypertension, metabolic diseases, and obesity [3, 5].

According to the latest reports of the World Health Organization (WHO) on Lancet Global Health, noncontagious diseases are the cause of 40 million early deaths (70%) in the world. In addition, 1.9 million of death cases are due to lack of physical activities [6].

One out of every four adults and three out of every four teenagers (11–17 years old) do not follow the WHO's guidelines about physical activity to eliminate the risk of physical disease and improve health condition [7]. According to WHO's reports, low level of physical activity is one of the seven risk factors in children and teenagers' health [8]. Given this, WHO has introduced guidelines to improve physical activity based on age and gender [9, 10].

The results of studies in different countries have shown that 80% of teenagers at schools (85% in girls and 78% in boys) do not adhere WHO's recommendation (1 hour physical activity a day) [11]. Studies have shown that the level of physical activity decreases and inactivity increases with age [12]. Rostamimoez et al. found that the level of physical activity decreased with age and the decrease rate was highest at the age of 14 [13].

A qualitative study by Hosseinzadeh and Niknami showed that since physical activity is not a priority of families, lack of physical activity on daily bases is one of the causes of negligence of physical activity in students [14].

According to the guidelines of the US Disease Control and Prevention [15] and the British Society of Physical Activity [16], at least 50% of physical training course of students at school should be dedicated to moderate-to-vigorous physical activity (MVPA). Schools are good environments to increase the chance of physical activity in children and teenagers.

The mainstream recommendations for improving physical activity in girl students are based on multi-section intervention and school-centered intervention in particular [13, 17, 18]. Schools are good places to help girls to grow and keep a healthy lifestyle [18].

Behavioral change theories and models are used to make a change and keep that change in physical activity [19] and adopting the right model for health planning needs recognizing the key factors and the right path of intervention [20].

A new venue to solve social and health issues and problems that is widely used in the developed countries is social marketing [21]. It means designing interventional and controlling programs that are designed to improve acceptability of an idea or a social practice in a group of audiences [22]. Social marketing is practiced in different fields to alter attitudes and behaviors of the public. Studies have shown that this method is highly successfully in physical activity field [23, 24]. Croner and Randal argued that social marketing is a framework to design behavior change programs and improve the success of such programs [25].

One of the key specifications of social marketing is using audience analysis before designing the interventions. To have a better understanding of the audience, their needs as to the health problems and the factors are examined to develop efficient strategies [26, 27].

Marketing mix with four Ps is a term used in social and commercial marketing. It is comprised of four constructs namely product, price, place, and promotion [28].

Product is a behavior or proposition that is expected to be acceptable for the audience. Price is comprised of tangible and intangible things that the consumer is ready to give up to accept a new behavior [29]. It might appear as the time and energy spent, experiencing anxiety and worries, or losing a joyful experience [30].

Place is where the audience demonstrates a behavior or the consumer is exposed to the message of a behavior. Promotion is about using media, advertisement, public relations, and other ways to access a consumer to inform and motivate them [31, 32].

Promotion is almost the most evident element of marketing and it is consisted of promotional communications used by marketers to convey the advantages of a product or service, tangible objectives, pricing approaches, and the elements of place [33].

A study by Fujira et al. showed that social marketing can be a tool to improve participation in physical activities [34]. Ramirs et al. emphasized in their study on the positive role of social marketing in changing destructive behaviors into a useful behavior for health. They also argued that the positive results obtained by social marketing as to using healthy foods can be extended to physical activity as well [35].

An evolutionary research consists of a qualitative and a quantitative study and it is used to evaluate and improve educational interventions. Through the qualitative method, a deep understanding about phenomena is attained by health researchers, which helps them to discover behaviors and subjects about health from target population's viewpoint in the texture [36]. Despite the several studies on physical activities, there is a paucity of qualitative study on physical activities in teenagers [37–39]. There is also a paucity of studies using consumer-based models such as social marketing in physical activity field [40, 41]. Qualitative studies are a major step in the process of social marketing as they are aimed at identifying needs and demands in target audience. Therefore, it is possible to frame and package a public health product based on the needs and demands of target consumers. The present qualitative study is an attempt to achieve an in-depth perception of audiences' viewpoint about regular physical activity and determine approaches based on social marketing mix. The stages two to four of social marketing operational model were implemented including audience analysis to determine needs and preferences of students; market analysis to determine elements such as competitors, partners, and elements of marketing mix in regular physical activity field; and channel analysis to identify communicational and executive challenges for the program.

Methods

The study was carried out as a qualitative content analysis study from September 2020 in the academic year 2020-2021. The three stages of SMART model (Social Marketing Assessment And Response Tool) were implemented namely audience analysis to identify the needs and preferences in students; market analysis to determine elements such as competitors and the elements of marketing mix in regular physical activity field; and channel analysis to determine communication channels and proper ways to implement the program [42].

The participants were selected through purposive sampling method. To ensure the reliability of the collected data, maximum diversity in the participants was ensured. The target group was selected among teenage girls between 12-16 years old in junior high schools of Kermanshah, Iran. Before interviewing, the participants were briefed about the study method, confidentiality of information, and the objective of the

study. Data gathering was through semi-structured personal interviews. The interviews were based on the questioning guideline and with observance of health protocols and social distancing during COVID-19 pandemic. In addition, the interviews were based on social marketing mix (4P). Each interview took between 20 to 30min and given the answers, probing questions would be used to motive participants to give more complete answers (e.g. what is the best type of physical activity from your viewpoint? and probing questions like “explain more,” “what do you mean?” “how and why?” and “please give an example?”)

In observance of research ethics, the participants were informed that their voice would be recorded and that all information will remain confidential and used only towards the objectives of study. In addition, the participants were reminded that they can leave the study at any stage. The participants and their parents signed a written form of consent. With the consent of students, the interviews were private and face-to-face at school. It was made sure that the participants felt relaxed during the interview. Sampling was continued until data saturation -i.e. no new information would be found [43]. With 32 interviews with 23 students, five parents (mothers) and four physical education trainers at school, data saturation was achieved.

At the end of each interview, the interview would be summarized and the respondent would be asked to add any last comment if any. The answers by the participants were analyzed using content analysis method. Following each interview and along with data gathering phase, the recorded interviews would be transcribed verbatim and examined along with the field notes. Word processing was done in Microsoft Word Software. To achieve a general perception of the interviews, the content would be read for several times. Then, the primary codes would be extracted and through comparing the codes based on the similarities and differences, subcategories would be extracted [33]. The process would be continued to obtain categories. To add to scientific rigor (like data reliability in quantitative studies), specialized methods for qualitative works such as peer review, external review (experts), and participant review were used.

The study was confirmed by the Research Committee, Hamedan University of Medical Sciences (IR.UMSHA.REC.1398.952) and the participants received adequate written and verbal information about the study. All participants gave the informed consent.

Findings:

The mean ages of the participating students, parents, and physical trainers were 13.8, 46, and 32 years respectively. Other demographic characteristics of the participants are listed in Tables 1 and 2. Following primary coding of the interview text, concept extraction was started and totally, 110 primary codes were extracted. Following data analysis and extraction of primary codes, they were categorized as the four elements of marketing mix (product, price, place, and promotions) and the subcategories (Table 3).

Table 1-Demographic characteristics of participating students

Variable		Number
Age	Mean± standard deviation	0.93±13.8
Grade	Seventh	4
	Eighth	6
	Ninth	13
Menstruation	Has it	13
	Does not have	10

Table 2- Parental demographic characteristics

Parents	Age	Job	Education
Mother1	44	Employee	Ph.D
Mother2	38	housewife	Diploma
Mother3	54	Employee	MA
Mother4	45	Employee	Doctor
Mother5	49	housewife	Diploma

Table 3- Participants viewpoints

Category	Sub-category	Codes	examples of comments
Audient	Ensuring physical health	Prevention of disease	It is good for health and skeletal stability. It improves growth and corrects the bones form.
	Ensuring mental health	Acquisition of self-confidence, happiness, less stress, vitality, higher concentration, joy	Exercising is needed for physical and spiritual health and it improves self-confidence. Exercising makes you happier and stronger and it can fill the moments in the day that you have nothing to do.
	Self-efficacy	Facing obstacles	Of course, we should do it during COVID-19 pandemic to remain in shape, prevent cardiac diseases, and work better
Product	Physical activity status	Jogging, jump rope, warm up, and stretching, basketball, volleyball	Jogging is good even for sick people. Any physical activity is good and before anything, it is imperative to worm up and prevent muscle cramp.
	Advantages of physical activity	Prevention of disease, body fitness and skeletal growth, vitality, less aggressiveness, less stress	It helps burning fat, it is good for the body and it may be harmful when it does not suit the age. It helps you become taller, have stronger wrists, and have a stronger body.
Price	Personal obstacles	Laziness, lack of family support, physical problems	Laziness prevents physical activity and creates negligence about one's health. Maybe it is no possible for them to exercise. For example, they are obese and there is no space for physical activity where they live.
	Environmental and social obstacles	Lack of space, living in small apartments, long distance to the nearest facility, high cost of going to gyms	Because of COVID-19, people are recommended to stay at home. If you have yard, you can run in a circle at the yard. Going gym was a good option before the pandemic because the environment was motivating. The environment in gym is design to motivate physical activity.
Place	Good place to receive the message	Gyms, educational facilities, cyber space	It depends on the method; you can use online courses or ask someone who has the information; of course, a physical trainer is better
	Suitable places for physical activity	Easy access to facilities and equipping all schools with sport equipment	Of course, gym, because there is a trainer and enough equipment to exercise. Public parks and the home are also good.
Promotion	Using advertisement and proper	Using environment ads, the TV and	Cultural work is needed in the society, the media and social network should promote physical activity. Schools also need to promote it.

communication channels	Radio, sport celebrities at provincial level, and other celebrities and artists	The media and families can motivate children. The media also affects adults. The environment should also promote this by providing decent environment in public parks.
Influencers on physical activity in teenagers	Parents, trainers, peers, relatives	I would prefer my parents and watching them doing physical activity. I do not like it when older individuals are at the gym.
Using technology	Findings partner	I would say a mobile app that runs at a specific hour of the day to promote exercising
	Support services	We should make sure that they are attracted to physical activity and exercising. For instance, we can help them when they do not have enough time to make time.

Product:

Students' comments analyses about the products yielded two subcategories including physical activity status and benefits of physical activity.

Physical activity status:

The participants viewpoints about physical activity (e.g. the best type of physical activity) and their desire to perform such activity indicated that the majority of them would do juggling, rope jump, and stretching on daily basis. *"Juggling, running, and warming up are not heavy tasks and can be done every day."* The majority of participants noted that juggling was a common type of physical activity; while some named daily choir at home as physical activity. *"Because the body is active and does not rest."* *"Any activity that makes us burn energy is considered as physical activity."*

Benefits of physical activity:

The participants listed a wide range of physical and spiritual benefits for physical activities. The majority highlighted prevention of chronic diseases, fitness, better skeletal development, and vitality. *"...the mind can concentrate more on the homework and school works and you feel more vitality."*

"It makes you feel more energy and stronger. It can fill the time of the day that you have nothing to do." Among the main causes of lack of physical activity in the teenagers was seeing no value in life, reluctance to do physical activity, no interest in body fitness, lack of knowledge about the benefits of physical activity, and financial problems.

Mental health appears in different forms such as gaining more self-confidence and feeling more energy, which was mentioned frequently as the benefits of physical activity. *"It is a way to use energy, control aggression, and decrease stress."*

Price:

The comments by the participants about tangible and intangible prices of physical activity were categorized into two subcategories of personal obstacles and environmental and social obstacles.

Personal obstacles:

The majority of participants mentioned lack of a strong will and laziness, lack of family support, lack of time because of heavy homework, physical problems, and illness. *"Even the family has a role to play. They are not interested in their health, or they might be even unaware when they do not motivate the child to have physical activity."* This was one of the obstacles and problems of doing physical activity in teenagers. Some other participants highlighted lack of facilities and required condition to have physical activity. Some mentioned the sexist attitude in the society about physical activity in girls as a reason for lack of physical activity in teenage girls. *"Some believe that physical activity and exercising such as martial sports are not good for girls."*

Parents are the main factors in lack of physical activity in teenagers and the long hours with mobile phone spent in social media. *"Mobile phone and social networks keep my daughter busy all day and stops her from doing physical activity."* Some noted that having no sibling was a reason for lack of physical activity.

Social and environmental obstacles:

This category refers to the social and environmental factors that limit physical activity in individual. All participants highlighted lack of facilities such as space for doing physical activity. For instance, there is no enough space in the neighborhood and the nearest sport facility is too far. Some others mentioned financial problems and expensive gyms.

Place:

This category refers to the place that girl students prefer being exposed to physical activity messages or the place that they want to do physical activity. The extracted codes were categorized into two subcategories including a good place to receive the message, and a good place to do physical activity.

A good place to receive message:

Facilities in public places are opportunities to transfer knowledge. The majority of participants mentioned that schools, gyms, the media, and social networks are good places to receive messages. *"It depends on the method. You search the Internet or ask an individual who has the knowledge. I prefer asking a sport trainer in person."*

Some mentioned city billboards or holding public sport events to promote physical activity.

There are factors in the environment that can motivate teenagers to have physical activity. For instance, public transportation facilities are good places for sending the message. *"If there are bicycles on sidewalks for rent, I might be motivated to use them instead of taking a cab. The fact that there is only cab and everyone use it, makes it a norm to only use cab for transportation."*

Good places for physical activity:

The majority of participant mentioned that going to gyms was a good idea and some found public parks a better place given the open space and availability sport facilities at parks. Some others mentioned that green spaces and using body building equipment were good for doing physical activity. *"A good point in gyms is that there is a trainer and you can learn the right way of practicing."* Some rejected the idea of doing sport in open spaces because of COVID-19 pandemic. *"I don't like going outside for doing sport during the pandemic. You can practice at home or run in the yard."*

"The best place for physical activity is a gym as there is no limitation for physical activity and no one would interrupt you." *"The gym environment is designed for doing physical activity so that you only think about practicing."*

From the parents and school officials' viewpoint, the best places for doing exercise are school and gym. Going gym was recommended if there was a specific hour for it.

Promotion:

Promotion is to use different methods to give awareness and motivate teenagers. Two subcategories were found in promotion namely "advertisement strategy" and "influencers on teenagers."

Using advertisement and efficient channels:

The majority of participants noted that face-to-face sessions, SHAD social network Telegram, the Internet and asking individuals with regular physical activity or a trainer were the best channels.

Influencers of physical activity in teenagers:

The majority of participants mentioned parents and school instructors as good influencers. Some mentioned family members (parents and siblings), relative, friends, health clinic, and medical staff. *"... My father motivates me."* Some said that they do not receive that much motivation from others. *"I usually do the opposite; therefore, I prefer not being motivated by others."*

Accepting peers as role models was an efficient factor in doing regular physical activity. *"At this age, the peers have a special influence on you and they can guide you towards good things."* Some mentioned that only successful peers in terms of school lessons and morality can be role models and motivate them to do physical activity. *"If she is a good girl and good at her lessons, she can be my role model for physical activity."*

Use of technology:

One of the ways to improve healthy behaviors is to use new educational media like the Internet, mobile phones, and applications. Social networks applications were mentioned by the participants as ways to promote physical activity. *"An application to explain the right way of doing physical activity and designed to be activated at a specific hour of the day can be a good solution."*

Discussion

In general, the teenage participants in this study were aware of the importance of regular physical activity. It appears that regular physical activity in teenage girls is affected by internal and external factors. Personal and environmental obstacles (price) was the most important finding in this study.

Although, it is not easy to control the large number of factors in teenagers' life, it is possible to overcome internal obstacles through motivation and social support. Parents' support has a key role in overcoming physical activity obstacles and realizing the importance of physical activity. The findings showed the role of family in physical activity behavior of teenage girls. This finding is consistent with Blackshear [46].

Price is one of the most important elements of social marketing. In the majority of social marketing intervention, price is not about financial behavior and it may appear as time, endeavor, physical obstacles, and the like [47].

Another element of social marketing with high importance was access to a suitable place to do physical activity. Anthony et al. argued that using open spaces was one of the approaches to improve participation in leisure sports given the easy and free access to such spaces [48]. Physical activity has no risk for healthy individuals during COVID-19 pandemic. In fact, the benefits of regular physical activity are undeniable even when a new virus has troubled the society. Still, preventive measures to decrease the risk of infection are imperative. Shirvani Rostamkhani highlighted doing physical activity at home or less crowded spaces during the pandemic [49].

Motivation as a one-way communication channel can deliver the message to a large group of individuals in a short time period. Celebrities and influencers can play a major role in promoting a product or service. These individuals can be popular athletes, actors/actresses, veterans, or accepted groups such as family, social brands, and trainers [50].

The participants highlight the positive effects of using celebrities, local athletes, artists, and celebrities as good ways to promote physical activity in teenagers. Sempogena and Olga [45] supported advertisements and using the power of celebrities as good ways to influence behavior and promote healthier behaviors. Their findings are consistent with the present study.

Families and parents in particular can act as booster and supporter to initiate and keep a specific behavior. Using different methods to motivate teenagers and by preparing the requirement, families can promote physical activity in teenagers. Edwardson and Gurly showed that while parents are not as

influential on teenagers as they are on children, the level of physical activity in parents is important for teenagers [51].

Manouchehri Nejad et al. highlighted the important role of family, peers, school, and the media to institutionalize sport culture in children and juveniles [39]. Studies on the supportive role of parents have shown that parents' support and help is a key correlating factor in physical activity behavior in teenagers [52-55].

As the results showed, by being role models, parents and siblings can have key role in motivating teenagers to do regular physical activity. Keisi et al. showed that as a role model, parents can indirectly create a positive atmosphere for participation of their children. Family members and those who have regular physical activity can increase participation of teenagers as they can motivate their daughters to do physical activity and prepare the environment for doing such activity [56].

Parents and experts argued that the most important obstacle in the way of creating a healthy life was the priority of school courses over physical activity. Amiri et al. also mentioned that priority of school courses was a serious challenge in making change in life style of teenagers [57].

Transportation challenges to go to sport facilities outside school was highlighted by the parents. A study in North Carolina showed that the long distance, cost, and safety and security issues were the main obstacles on the way of doing physical activity in children [58].

The participating teenagers and parents mentioned using cyber space, state of art technology, and mobile applications for education and motivation of individual about physical activity. The emergence of Internet and new media and the wide-range effect of this media in people's life have enabled them to overcome the obstacles of education, empower themselves, and improve self-care. Therefore, the expansion of using social media in health education has become an essential matter [59].

Compared to other studies in physical activity field, the present study is featured with advantages such as using a qualitative method to explore teenagers' viewpoint, categorizing subjects and emphasizing on teenagers, and introducing social marketing approaches. As to limitations, the social distancing during COVID-19 pandemic was one of the main ones so that a few students would attend schools every day. However, although the present study is not as generalizable as a quantitative study, it can be highly useful for designing quantitative research projects in the future.

Trustworthiness:

To support validity of the data, the transcribed texts of interviews were reread and recoded a few days after the primary coding for comparison and examination of the validity of the codes. In addition, continuous engagement with the data enabled us to deepen and widen the information and ensure trustworthiness of the data. Member check also improved coordination between the extracted codes and the experiences of participants.

Conclusion

The results showed that physical activity in the teenagers was subject to personal, environmental, and social obstacles. The reasons mentioned by the teenagers for doing physical activity included health, vitality, parents' support, and environment support. Learning about teenagers' viewpoint is important for designing and implementing efficient intervention and audience-centered models to improve regular physical activity. Studies like the present one can promote regular physical activity behavior, attenuate obstacles, improve solutions, lower costs, and increase the chance of taking opportunities to do physical activity. As the findings showed, by designing proper behavioral interventions; using social marketing mix solutions; and introducing rational, joyful, feasible, inexpensive, and accessible physical activities, it is possible to find the best promotional messages for the target audience and promote regular physical activities in teenagers.

Abbreviations

WHO: World Health Organization; MVPA: Moderate Vigorous Physical activity; SMART: Social Marketing Assessment And Response Tool; COVID-19: Coronavirus Disease 2019

Declarations

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Conflict of interests:

The authors have no conflict of interests in this paper.

Ethics and dissemination:

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Ethics Committee of Hamadan University of Medical Sciences with proprietary ID, IR.UMSHA.REC.1398.952. The results of this experiment will be sent for publication in journals and distributed to school officials and parents of teenagers

Availability of data and materials:

The datasets generated and/or analysed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Consent for publication:

Not applicable

Author contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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