

pandemic. You can practice at home or run in the yard” (13 years old).

“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 schools and gyms. Going to the gym was recommended if there was a specific hour for it.

3-10. Promotion

Promotion refers to the use of different methods to give awareness and motivate teenagers. Two subcategories were found in promotion namely “Advertisement strategy” and “Influencers on teenagers.”

3-11. 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.

3-12. Influencers of physical activity in teenagers

The majority of the participants mentioned the parents and school instructors as good influencers. Some mentioned family members (parents and siblings), relatives, 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” (14 years old).*

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” (13 years old).*

3-13. 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 network applications were mentioned by the participants as influential ways for promoting physical activity. *“An application to explain the right way of doing physical activities, which is designed to be activated at a specific hour of the day, can be a good solution.” (13 years old).*

4- 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) were the most important finding in this study. Although it is not easy to control the large number of factors in teenagers' lives, 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 that of Blackshear (45).

Price is one of the most important elements of social marketing. In the majority of social marketing interventions, price is not about financial behavior and it may appear as time, endeavor, physical obstacles, and the like (46). 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 (47). 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 and Rostamkhani highlighted doing physical activity at home or in less crowded spaces during the pandemic (48).

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.

The participants highlighted the positive effects of using celebrities, local athletes, artists, and celebrities as good ways to promote physical activity in teenagers. Sempogena and Olga (49) supported the use of advertisements and the power of celebrities as good ways to influence behavior and promote healthier behaviors. Their findings are consistent with those of the present study.

Families and parents in particular can act as a booster and supporter to initiate and keep a specific behavior. Through using different methods to motivate teenagers and by preparing the requirements, families can promote physical activity among teenagers. Edwardson and Gurly showed that despite the parents not being as influential on teenagers as they are on children, the level of the parents' physical activity is important for teenagers (50).

Manouchehri Nejad et al. highlighted the important role of family, peers, school, and the media to institutionalize sport culture in children and juveniles (38). Studies on the supportive role of parents have shown that the parents' support and help are key

correlating factors in the promotion of physical activity behavior among teenagers (51-54).

As the results showed, by being role models, parents and siblings can have key roles in motivating teenagers to do regular physical activities. 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 activities (55).

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 activities. Amiri et al. also mentioned that priority of school courses was a serious challenge in making changes in the lifestyle of teenagers (56).

Transportation challenges to go to sports facilities outside the school were also highlighted by the parents. A study in North Carolina showed that the long distance, cost, safety and security issues were the main obstacles on the way of doing physical activities by children (57).

The participating teenagers and parents mentioned using cyberspace, state of art technology, and mobile applications for educating and motivating the individuals in physical activities. The emergence of the Internet and new media and the wide-range effect of these media in people's lives have enabled them to overcome the obstacles of education, empower themselves, and improve self-care. Therefore, expansion in the use of social media in health education has become an essential matter (58).

Compared to other studies in the field of physical activity, the present study is featured with advantages such as using a qualitative method to explore teenagers'

viewpoint, categorizing subjects with an emphasis on teenagers, and introducing social marketing approaches. As for the 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.

4-1. Trustworthiness

To support the validity of the data, the interview transcripts were reread and re-coded 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 checks also improved coordination between the extracted codes and the experiences of participants.

5- CONCLUSION

The results showed that the teenagers' physical activity is subjected to personal, environmental, and social obstacles. The reasons mentioned by the teenagers for doing physical activity included health, and vitality, along with parental and environmental support. 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 the teenagers' adherence to regular physical activities.

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9- 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 study are distributed to school officials and parents of the participating teenagers.

10- ABBREVIATIONS

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

SDHRC: Social Determinants of Health Research Center

11- DECLARATIONS

11-1. Availability of data and materials

The datasets generated and/or analyzed during the current study are not publicly available but are available from the

corresponding author on reasonable request.

11-2. Author contributions

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

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