

Research Paper

Rapid Consensus on the Prioritization of Strategies to Improve Physical Activity Among Iranian Women: A Focus Group Study Using Nominal Group Technique



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ABSTRACT

Background: Despite the notorious effects of inadequate physical activity (PA), adopting appropriate interventions to increase PA is still problematic. This study identifies and prioritizes evidence-based strategies to increase PA in Iranian women.

Methods: This is a mixed-method study. A systematic review of clinical interventions was used to stimulate academic and focus group discussions (FGDs), where the participants identified the most salient strategies to promote PA in Iranian women. Then a nominal group technique (NGT) was used to reach a consensus on the prioritization of the strategies. This mixed methods study (systematic review and FGD) was conducted in 2014. The participants (n=13) included Iranian women, the research team, health sciences experts, managers, and policymakers. They rated the strategies' importance and applicability (from 3 to 13); higher scores indicated higher prioritization. The prioritized plans were then categorized under a socioecological model of intrapersonal, interpersonal, organizational, and community factors.

Results: Overall, 26 strategies were identified and coded as items. The challenging of inaccurate beliefs about PA, along with the increasing self-confidence and self-prioritization, creation of sports groups, the use of sports coaches, and increase of awareness via text messaging and informative multimedia placed in local mosques and schools got the highest scores both in terms of importance and applicability in this model.

Conclusion: In promoting PA, collaboration with key stakeholders is paramount. The strategies identified and prioritized in this study could be used to design future PA programs for increasing PA in Iranian women.

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Highlights

- Several interventions have been designed and implemented to promote physical activity (PA) worldwide.
- Intrapersonal, interpersonal, organizational, community, and public policy factors widely affect the ability or likelihood of individuals to participate in physical activity.
- Understanding and challenging inaccurate beliefs about exercise, high self-confidence, and the promotion of self-prioritization had the highest priority in importance and applicability.

Plain Language Summary

Despite the notorious effects of inadequate physical activity (PA), adopting appropriate interventions to increase PA has remained challenging. This study identifies and prioritizes evidence-based strategies to increase PA in Iranian women. The highest strategies in terms of importance and applicability were as follows: challenging inaccurate beliefs about PA, increasing self-confidence and self-prioritization, creating sports groups, using sports coaches, and growing awareness of the benefits of PA via text messaging and informative multimedia placed in local mosques and schools.

1. Introduction

Insufficient physical activity (PA) has been considered one of the main risk factors for morbidity and mortality globally (Dinu et al., 2019). Insufficient PA is a public health problem worldwide, occurring more frequently among cisgender women (Dinu et al., 2019; Caperchione et al., 2011). These women engage less regularly in PA predominantly due to increased childcare responsibilities, role conflict (e.g. working in and out-side the home), personal safety concerns, lack of knowledge both in PA programs and finances (Caperchione et al., 2011), societal and cultural constraints (Berger & Pearson, 2009), and religious constraints (Caperchione et al., 2011). Only 20.5% of women in Iran have sufficient PA (Amiri-Farahani et al., 2017). The barriers to the participation of Iranian women in PA are generally the same as those listed above (Motameni et al., 2014), with a particular focus on male-dominated culture and women's oppression in Iranian society. Strong evidence suggests that regular PA reduces the risk of premature death, heart disease, high blood pressure, stroke, diabetes, hyperlipidemia, metabolic syndrome, colon cancer, breast cancer, and depression (US Department of Health and Human Services, 2008). Consequently, several interventions have been implemented worldwide, a diverse range of which have led to the promotion of PA (Amiri-Farahani et al., 2015). One approach to promoting PA is to use socioecological models, which consider the health behavior across a particular society or a community. By adopting this approach, health promotion, health education, and public policy can be developed more comprehensively

(McLeroy et al., 1988). A socioecological model, in particular, can provide a framework to understand both barriers and facilitators of PA participation to enable the design of more effective interventions (Corr et al., 2019). In this sense, intrapersonal, interpersonal, organizational, community, and public policy factors affect individuals' ability or likelihood to participate in PA (McLeroy et al., 1988). In the design of interventions to promote PA in women, the participation of women, managers, health-care experts, and other authorities is also essential (Ramji et al., 2020). Yet since lifestyles are shaped within a variety of different social, physical, and cultural contexts, multilevel approaches which consider cultural, environmental, and personal factors may be more successful than separate programs (Rose-Clarke et al., 2019; Berra et al., 2017; Ogilvie et al., 2010; Baker et al., 2015). Considering what was discussed, this study integrated both quantitative (a systematic review of controlled trials) (Amiri-Farahani et al., 2015) and qualitative approaches (focus group discussions [FGDs]) to prioritize evidence-based strategies and increase PA in Iranian women.

2. Materials and Methods

This study was undertaken in 2014 as a part of a more extensive action research project. The findings of a previous systematic review of controlled trials (Amiri-Farahani et al., 2015) and an FGD were used to identify the most salient strategies to promote PA in Iranian women. The nominal group technique (NGT) (Robinson, 1999) was used during the FGD as a structured method for facilitating group discussions and encouraging all participants to promptly reach a consensus on prioritizing the strategies.

While systematic reviews of controlled trials may provide valuable quantitative data in relation to the effectiveness of interventions (Amiri-Farahani et al., 2015), FGD is considered one of the main approaches to identifying and prioritizing health promotion strategies along with the use of NGT (Robinson, 1999). Using NGT, participants are invited to present their ideas and opinions in groups of 5–12 (Williams et al., 2006). FGD is used for achieving participatory experiences while discovering the attitudes and needs of individuals in a social context (Webb & Kevern, 2001). When used together, these methods are also useful in engaging key stakeholders in analyzing the needs and designing the evaluation of health programs collectively.

Study procedure

A systematic review of community-based clinical trials aimed at exploring effective ways to promote PA in women aged 18 to 65 was conducted in 2014 (Amiri-Farahani et al., 2015). An FGD was subsequently hosted by the research team where the results of this systematic review were presented to all the participants as an incentive for discussion, along with those obtained during the previous phases of the action research (Amiri-Farahani et al., 2021; Amiri-Farahani et al., 2018). Following initial discussions, strategies to promote PA among women were offered by the participants (n=13), including members of the research team (nursing education and reproductive health specialists and a psychologist), Iranian women aged 18 to 65, home healthcare staff, policymakers and planners from Tehran Municipality, Iran and the municipal health department officials. These strategies were recorded and collected as data and then shared orally and through written notes on a whiteboard by the moderator (a PhD student). In line with the best practice (McKenzie et al., 2016), some open questions were also used to guide this FGD. The questions included “according to the conditions and facilities available in your community, what solutions would you recommend to improve PA among women?”, “among the solutions offered, which one do you think is more important?” and “among the provided strategies, which strategies can be more practical?”. Each participant was encouraged to participate equally and was prompted to elaborate on their suggestions as appropriate. After the proposed strategies were identified and recorded, the participants were asked to score them in terms of importance and applicability.

A single score was given by each participant to those strategies considered either practical or important (the maximum score was 13 for each item). Zero point was given to items that were not important or applicable. All

the classified and scored strategies were then presented to the participants of the FGD in a table. In line with best practice (Perry & Linsley, 2006), the strategy scored less than 2 was removed from the table. At the end of the FGD, the participants agreed that all strategies that scored the highest in terms of importance and applicability should be given priority.

3. Results

Overall, 36 strategies or items were proposed, out of which 26 were found to be eligible for scoring. These 26 items received scores from 3 to 13 and were thus confirmed as strategic priority areas. They were then categorized under a socioecological model of intrapersonal, interpersonal, organizational, and community factors (Table 1).

Intrapersonal (individual) strategies obtained the highest score in terms of importance and applicability. Cognitive behavioral therapy was suggested as a suitable strategy to increase PA. Interpersonal, social, and organizational strategies received lower scores in terms of importance and applicability. Nevertheless, the formation of groups for social exercise, the use of sports coaches, educational awareness, and the increase of PA facilities and equipment in popular places, together with the motivation through rewards for PA, were still prioritized, as they were scored the highest in these areas in terms of importance and applicability.

4. Discussion

This study aimed to identify and prioritize evidence-based strategies to increase PA in Iranian women. Once prioritized, the strategies were categorized under a socioecological model of intrapersonal, interpersonal, organizational, and community factors (McLeroy et al., 1988). Few studies have been conducted to prioritize strategies for increasing PA among Iranian women. Nevertheless, Baheiraei et al. (2014) used a socioecological model to enclose the highest and lowest scores relating to proposed strategies for increasing PA put forward by stakeholders. Similar to our study, increasing knowledge and motivation and decreasing concerns about PA in adolescents received the highest scores using NGT (Baheiraei et al., 2014). Yet these concerns identified in adolescent populations differed in that they predominantly referred to body image.

In a non-randomized study that used the principles of community-based participatory research and prevention marketing framework and social cognitive theory, a physical activity intervention was conducted in women

Table 1. Prioritizing strategies to improve physical activity in Iranian women according to the importance and applicability from the perspective of the focus group

| | Strategies Proposed | Range of Scores (Importance) | Range of Scores (Applicability) |
|-----------------------|--|------------------------------|---------------------------------|
| Intrapersonal | Increasing knowledge and skills via educational classes and workshops | 10-13 | 11-13 |
| | Dismantling false beliefs about exercise | | |
| | Training to increase self-confidence | | |
| | Cultivating self-control to improve PA (e.g. via daily records and training on overcoming obstacles and problem-solving) | | |
| | Motivational training highlighting the consequences of poor mobility and the benefits of increased flexibility | 5-7 | 5-7 |
| Interpersonal | Group exercise: Walking together with friends, forming groups for social exercise | 4-10 | 3-12 |
| | Use sports coaches to encourage collective participation among spouses and friendship groups (free of charge to overcome participatory barriers to exercise) | 13 | 13 |
| Organizational | Increasing awareness of local sports services and facilities | 6-10 | 6-11 |
| | Use of multimedia to increase awareness of PA opportunities and benefits | 6-10 | 6-11 |
| | Information promotion through local mosques, neighborhoods, schools, shopping areas, and local parks | 3-10 | 5-11 |
| Community | Increasing sports facilities and equipment in popular places (free to overcome participation barriers in sports) | 5-8 | 4-7 |
| | PA competitions based on incentive prizes | | |
| | Use of professional PA instructors | 3-12 | 3-8 |

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aged 35 to 54 in the southeastern United States. In line with the present study, recognizing inaccurate beliefs about exercise and providing instruction to increase self-confidence achieved the highest scores for prioritization (Sharpe et al., 2010). Considering the above results, it is reasonable to assume that in using the socioecological model, the proposed and prioritized strategies for improving PA can be different according to the age of the studied population. Therefore, the strategies adopted in each population and age group may not be generalizable to others (Elder et al., 2007). Indeed, the differences seen in the prioritization of strategies between adult women and adolescents are likely due to differences in perceived barriers and facilitators of PA in these two age groups. Consequently, it will be important to consider how to increase PA in different age groups separately.

Tehrani et al. conducted a study investigating the effect of an educational intervention based on a socioecological model to promote women's PA. Cognitive behavior therapy, social support, goal setting, and education ultimately increased PA in obese individuals (Tehrani et al., 2016). Given the similar strategies prioritized within the present study, these findings are encouraging and may usefully serve as a study design for future interventions.

In the face of contextual, social, and environmental challenges, robust partnerships appear crucial in improving PA (Sallis et al., 2006). Making changes in PA at the population level is highly complex and related to many individual variables within socio-cultural, political, environmental, and financial dynamics (Brownson et al., 2010). Therefore, in designing future programs aiming to increase PA, all complex social, medical, economic, physical, behavioral, and family factors should be considered (Estabrooks & Glasgow, 2006). Consequently, implemented strategies for PA promotion may be most effective where communities and individuals work with researchers to consider these factors and design solutions (Roux et al., 2008; Heath, 2009). Because the women selected to participate in the study (FGD) live in areas with above-average socioeconomic status, the perceived barriers to PA and the strategies presented may best be generalized to a population with a similar context. PA programs may also be most effective when they include multilevel components implemented at national and regional levels (McLeroy et al., 1988; Winterbauer et al., 2016). Accordingly, future studies could include larger sample sizes and cluster sets representative of local and regional municipalities.

5. Conclusion

This study identified strategies for promoting PA in Iranian women prioritized by the studied women and other key stakeholders. Designing programs to increase PA commensurate with targeted populations' multi-level needs and demands requires extensive collaboration. Thus, participatory research involving multilevel stakeholders (e.g. target populations, community organizations, non-governmental and governmental bodies) is warranted. Our study design may also be replicated to identify and prioritize strategies for promoting PA in other populations. The strategies identified and prioritized in this study could usefully inform the co-creation of future PA programs to increase PA in Iranian women regionally and nationally.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of [Tehran University of Medical Sciences](#) (Code: 92-02-28-23311). All participants were notified about the study, and written informed consent was obtained from all the group members.

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Authors' contributions

Study design: Leila Amiri-Farahani; Data analysis and interpretation: Sally Pezaro, Leila Amiri-Farahani and Parvaneh Khorasani; Writing and revising the manuscript: Sally Pezaro and Leila Amiri-Farahani; Final approval: All authors.

Conflict of interest

The authors declared no conflict of interest.

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