

Review Article

Barriers and Facilitators for Regular Physical Exercise among Adult Females: Narrative Review 2020

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Abstract

Females have a higher burden of physical inactivity compared to males. Despite the volumes of qualitative studies that investigate the facilitators and barriers for physical exercise among adults, there are few reviews on the subject. This review aims to investigate the facilitators and barriers to regular physical exercise among adult females based on existing qualitative studies. The available data, which are mostly qualitative in design, could categorize all barriers and facilitators into three themes. They are physical body related factors, psychosocial and physical exercise environmental factors. Physical body related factors include this theme is more related to determinants of gender & age, and health status of individual female. Psychosocial theme is related to social determinants of health which involve interpersonal factors, financial income & employment, educational level, and family & social support. Physical exercise environmental factors include both the workplace surroundings and accessibility to regular physical exercise facility.

Keywords: Females; Barriers; Facilitators; Physical exercise; Health benefits; Interpersonal factors; Exercise environment; Social determinants

Abbreviations: ACSM: American College of Sport Medicine; BMI: Body Mass Index; CVD: Cardiovascular Diseases; DALY: Disability-Adjusted Life Year; NCD: Non-Communicable Diseases; PE: Physical Exercise; SDT: Self-Determination Theory; WHO: World Health Organization; SDOH: Social Determinants of Health

Introduction

Regular Physical Exercise (PE) is crucial in improving and maintaining a healthy lifestyle simultaneously eliminating the risks associated with chronic diseases, especially as people grow older [1]. Comparably, there is a wide range of health benefits arising from regular PE, which include reducing all causes of mortality, reduction of Cardiovascular Diseases (CVD), metabolic diseases like type 2 diabetes, and some cancers as well as other Non-Communicable Diseases (NCDs) [2]. Generally, physical activity can be described as any body movement arising from the action of skeletal muscles using the required energy more than on the rest state [3]. Physical exercise, on the other hand, is a regular or repetitive and structured body movement that is done continuously to enhance the health related and skills related fitness

[4]. American College of Sport Medicine (ACSM) recommend that individuals should dedicate at least 150 minutes in most weekdays of moderate PE to maintain general health and normal Body Mass Index (BMI) [5].

The current global data shows that the majority of disease burden is due to NCDs, which accounts for almost (63%) of all mortality and morbidity [6]. World Health Organization (WHO) reported leading causes of NCD deaths in 2014 in the following order: CVD (46.2%) of all NCD deaths, cancers (21.7%), pulmonology diseases, (10.7%) and diabetes mellitus (4%). Thus, these four main NCDs were accountable for almost (82%) of all NCD deaths globally. Furthermore, the majority of deaths were females owing to the prevalent NCD disease and related risk factors [7].

Insufficient PE is one crucial risk factors for all NCD diseases including the four mentioned above. In 2010, (23%) of adults above 18 years had less than 150 minutes of moderate-intensity PE weekly or equivalent. Also, it was reported that adult females were less active than males, with (27%) of females and (20%) of males not achieving proposed amount of PE [8,9].

The existing available data showed variable insufficient regular PE level cross all geographical regions due to many reasons. This narrative review aims to address various barriers and obstacles that prevent adult females from regular PE as well as

the more common facilitators that helps in making PE an essential weekly habit among them.

Importance of Physical Exercise

Insufficient PE is one of the ten leading primary risk factors for mortality worldwide. It accounts for around (3.2 million) deaths per year. Further it caused (69.3 million) Disability-Adjusted Life Year (DALYs) 2.8% of the total-globally [10]. Insufficiently physically active individuals are at (20-30%) expanded risk of all-cause mortality, comparing to those who do at least 150 minutes of moderate-intensity PE weekly, or equivalent, as recommended by WHO [8].

Regular PE, beside decreases all causes of mortality, lowers the risk of broad spectrum of NCDs including the followings; CVDs, overweight & obesity, diabetes mellitus type II, hypertension, dyslipidaemia, musculoskeletal disorders, mental disorders, elderly related disease, and colon & breast cancer [11-19].

Social Determinants and Physical Exercise among Females

World Health Organization defined the Social Determinants of Health (SDOH) as all conditions in which people are born, grow, live, work and age. All these conditions are influenced greatly by many factors including; income, power and resources at global, national and local levels. The social determinants of health are typically accountable for health inequities [20].

Social determinants of health are wide spectrum factors that impact the health and disease course. Many references agreed on the following factors to affect female practicing PE: gender & age, income & social status, social support, education and literacy, employment/working conditions, physical and psychological environments, and personal health [21-23]. These determinants could be grouped into three themes as:

- A. Physical Body Related Factors.
- B. Psychosocial Factors.
- C. Physical Exercise Environment.

Physiological and Body Health Status

This theme is more related to determinants of gender & age, and health status of individual female.

Gender & age

Gender and age play essential role on the influence of access to regular PE from different perspectives including basically the age and anatomical and physiological capability. Females are generally weaker than males across all age groups, with the differences being more noticeable as the individual ages [24]. Also, researches showed that males aged between 30 and 65 have an easier time walking upstairs or downstairs, covering 400 meters

and standing for half an hour compared to females [25]. The reason for the difference in mobility, as explained by most researchers, is that females, especially those in advanced age groups, are near the threshold value of the strength of their quadriceps. The same findings apply to females of different age brackets as those aged up to thirty years have an easier time during regular PE compared to older females. As an individual grows older, the physical limitations result in reduced physical independence in daily activities such as housekeeping, shopping, among others [26]. Therefore, active participation in exercises lowers the risk of losing independence as the individuals advance in age.

Females exhibit more barriers in their leisure time activities in different exercise settings than males. Rasinaho, et al. reported the most common reasons for the differences between the two genders as fatigue and extreme engagement in daily activities hence limited time and energy left for regular PE [27]. The amount of time spent in PE also decreases from young adulthood as females approach their fifties and sixties [28].

According to Walia, et al. facilitators to consistency in PE rely on seeing material changes and having full control over one's body [29]. Research by Nies, et al. concludes that age and gender are two of the main facilitators to physical activity [30].

According to Mullen, et al. barriers to PE are more pronounced in young and middle-aged females compared to those of older ages. Slade and Shawn explained that the factors were mainly to do with the feelings and attitudes of those engaging in regular PE. The study acknowledged that the participants were affected by factors such as unqualified fitness instructors, uncomfortable atmosphere for regular PE, and sessions that they claim not to be fun. Furthermore, Slade and Shawn addressed the factors inhibiting PE by females regarding their physical appearance and body perception concerns. The study findings established that overweight females tend to feel insecure with their body weight, thus being more embarrassed about walking, jogging, or working out in public spaces. Evidenced by the feedback from the sample participants, more overweight females were more uncomfortable about exercising around petite people compared to males [31].

As age progress, the elderly reported not much different barriers and facilitators than other age groups. Physical problems, time limits, and also fear of falling were the top three barriers on elderly patients. Furthermore, having no companion and or no professional guidance and family responsibilities were also common interpersonal barriers. Also, physical barriers to walking and weather reported frequently as environmental exercise factors that prevented them from regular PE. On the other hand, facilitators were documented as intrapersonal ones like improving one's physical condition and enjoyment. While the interpersonal facilitators were social, and availability of exercise specialist.

Besides, the suitability of both physical environment and its security was familiar with environmental facilitators [32].

Physiological status is exciting to study, especially postpartum and its barriers & facilitators to regular PE. The substantial influence of personal and environmental barriers frequently reported, such as fatigue, and lack of motivation, substantial time limitations, lack of accessibility to reasonably priced and appropriate exercise facilities. In contrast, the primary facilitator was social support. Saligheh M described these findings through a qualitative study among 6-12months postpartum females in Australia [33].

In the younger age group, adolescence tended to change their facilitator and motivators as they progress in regular PE programs. The leading facilitator usually was losing weight but focused more on fitness over time. Usually, the achievement of the goals and family support were crucial for maintenance. At 6-months, the most frequently perceived changes were improved fitness (50%) and body shape (46%) [34].

The obvious evidence indicated the insufficient amount of regular PE among adult females comparing to males generally and it come to be less due to age related reducing ability.

Health Status

Over the literature, some chronic diseases influence regular PE among patients. Shanti Kadariya, et al. reported a high rate of PE among urban diabetic Nepali patients. More than half of the participants (52%) were moderately active, and (28%) highly active. Females were (38%) of the participants. The facilitators were physical fitness, strength, and flexibility, good quality sleep at night, social interaction was identified as the chief facilitators. Family tasks, busy daily schedule, and family discouragement were the barriers against regular PE [35].

The case is the different when Pereira CS found through a qualitative study among bipolar disorder patients that most of participants did not exercise regularly. Among all 14 females who participated in the study, unaware of how exercise can positively influence their disease. The most agreed barriers were the presence of symptoms and social stigma. While social support, including both family and friends, were the most reported facilitators [36].

Furthermore, Lavallée JF, et al. confirmed almost the same findings upon a qualitative meta-synthesis study of 13 studies on female patients with breast cancer. Essential facilitators for regular PE during adjuvant treatment were of tangible benefits, increased self-esteem, empowerment, and improvements in overall psychological well-being. The availability of experienced gym instructors, personalized information, and a social, supportive environment was essential to females during treatment. Whereas, barriers included weakness & body fatigue, pain, and work caring responsibilities [37].

Similar findings reported in an online cross-sectional study among individuals with a current or history of any cancer. Where barriers to regular PE during treatment included physical symptoms and lack of awareness of PE programs. Facilitators for regular PE were history of successful experience with exercise and accessibility [38].

Furthermore, medical condition dramatically affects the practice of regular PE, as revealed by L Boutevillain, et al. His study, which was during 2017 among patients with nonspecific chronic back pain in France, concluded main themes as physical factors, psychological factors, and socio-environmental factors. The leading barrier to regular PA practice was the pain, which sounds common sense. Psychological barriers were associated with the difficulty of integrating PA in a person's daily life. While the environmental barrier was lack of time. Facilitators including the availability of regular PE professionals for teaching exercises, and group exercise sessions [39].

Also, repeated evidence from qualitative studies showed that barriers could be stratified into five themes among patients with musculoskeletal disorders. They were health conditions, lack of time, poor physical condition, socio-emotional, psychological barriers, as well as exercise access. Alternatively, perceived PE facilitators were also under five themes, specifically improved health condition, socio-emotional, behavioral supports, exercise accessibility, and time convenience [40]. Almost the same themes for both barriers and facilitators noticed among patients before or after knee arthroplasty, as described by CA Pellegrini et al. during 2018 in the United States [41].

Both the status of weight loss as well as weight maintenance for obese patients counter almost the same barriers and facilitators. Metzgar CJ, et al. found the accountability to others, social support, planning, awareness, and self-motivation were as vital facilitators. Also, in the same qualitative study among females during 2015, found the barriers to be life transitions, health condition changes, internal factors, and deficiency of social support [42]. Similar barriers also reported during a descriptive and analytic study done in Iran during 2013, where also, stress, depression, food craving, lack of time, exercising lonely, employment, and being a student documented to be common barriers [43]. Medical conditions, especially post gastrectomy cases, were studied in the literature. Almost (50%) of all post-gastrectomy individuals, regardless the gender, gained weight and become obese after few years post-surgery, usually due to not adopting a healthy lifestyle [44].

Many studies reported that obese patients believed about the health-related benefits of regular PE; however, they reported insufficient PE levels to obtain those advantages. The most common perceived barriers were obesity associated factors like pain and physical limitation. While non-obesity related was lack of motivation, environment, and limited resources. There was

agreement that weight loss to be the key facilitator to regular PE among them [45].

From a qualitative study on females who were on average 15 months post-gastrectomy in Canada, the barriers and facilitators were identified as three main themes: the physical body, appraisal of the physical and social self, and exercise environment. From a physical body perspective, the most common barriers were limited mobility/lack of fitness feeling of low energy/or reduced stamina and surgery side effects. Contrary, the most common facilitators were post-operation weight loss and weight/health maintenance. Regarding appraisal of the physical and social self, the most reported barriers were lack of self-efficacy and motivation. Unlike facilitators, who were body image and social support/ongoing relationships. Concerning the exercise environment, lack of access to accommodating facilities was the most described barrier. While the access to exercise knowledge was the more common facilitator from exercise environment aspects [46].

Findings of post management related to physical limitation and common side effects of the intervention also confirmed among patients with colorectal cancer, following years post-treatment, were fatigue, which was related to the disease or its treatment is the commonest barrier. While physiological benefits of regular PE like getting more fit reported as the more frequent facilitators [47].

The more the medical condition is associated with pain and disability, the more barriers will be reported, especially in the musculoskeletal conditions. The barriers most frequently stated by patients were pain, stiffness, fatigue, and disability. Motivation and time were the most often reported facilitators in patients with ankylosing spondylosis, as concluded by Fongen C, et al. in a cross-sectional comparative study conducted during 2015 [48].

Various studies addressed frequently the physical limitations due to disease pathology and pain as regular PE barriers while, improving overall the disease course, reducing symptomatology and improving mobility were common facilitators but still in strong need for family and social support.

Psychosocial Factors

This theme is related to SDOH of interpersonal factors, financial income & employment, educational level, and family & social support.

Interpersonal Factors

Interpersonal factors are those related to the individual personality, mentality and interest. In qualitative research conducted by Mullen and Diane in the United States, established that the top motivating factors for PE range between physical appearance and body functioning. The study involved a sample population of females aged between 18 and 55 years. Those aged

18-34 listed their main motivation factors for regular PE as physical appearance, while participants aged 34-55 were more motivated by functioning of the body in the daily exercise routines. From the study by Mullen et al., differences in age determine the reasons for individual engagement in PE. The findings, therefore, also showed the relationship between age and perceived benefits of regular PE and enrolment in fitness facility programs [49].

Regarding the choice of fitness facilities, Jewson et al. ascertain that females across all ages consider factors such as fun sessions, level of qualification of the instructors, and the state of the atmosphere surrounding the facilities as facilitators [50].

Barriers have physical, social, and environmental components that may become a relatively depending on an individual's perception of the significance of these factors in a particular situation. For instance, unawareness of the importance of regular PE and lack of control over negative external factors may inhibit one from seeing the potential benefits of the exercises [51].

One more qualitative study carried out by Bethancourt HJ, et al. during 2014. He confirmed that physical constraints due to the health status of aging, lack of professional support frequently reported by the participants. On the other side, facilitators involved motivation to maintain physical & mental health and access to affordable and to stimulate PE options [52].

Income & Employment

The best place for individuals seeking to increase regular PE is a fitness facility as they offer the best services. However, there is a worrying trend in sustained membership in such facilities. Despite the willingness of many females to register for fitness membership programs and participate in the exercises, approximately (50%) of them drop out within six months of joining the facilities. Although most members initially acknowledge the physical and psychological benefits of regular PE, those who drop out of the exercise facilities give reasons such as loss of interest in the exercise, and lack of money to purchase necessary exercise equipment. Others lack the willpower to engage in regular PE such as jogging and long walks [53].

Further evidence also found that households with collectively higher income have more physically active members compared to those with lower income [54]. Another qualitative study was carried out among Dutch adults, (56%) of the participants were females, done by GE Nagelhout, et al. addressed financial and other logistic reasons. Where the main reason for not engaging in PE was the fees. While it was facilitated by physically active (transport to) work and by dog ownership [55].

Education, Employment/Working Conditions

Relation between education and employment is very strongly

interrelated. As vast majority of the educated individuals get work in most countries which ensures relative constant financial income as good quality of life.

Research by Daley and Parfitt, et al. suggested that enrolling in fitness exercise programs and active engagement in regular PE are aspects of health-promotion practices allowing individuals to enjoy the benefits associated with it, which is also related to education [56]. The study by Daley and Breuleux, et al. determines that individuals who exercise regularly have better psychological mood states and seem to be more physically fit than inactive individuals [57]. Regarding the workplace, the researchers ascertain that employees who spend their leisure time exercising register lower medical costs and have higher job satisfaction. The same findings were confirmed by Mittendorf, et al., who alluded that employees with membership in fitness facilities have a better actual health status [58].

Mullen et al. established that the main determinants of PE by females include education level, family size, work role, level of income, involvement in daily activities, and marital status [59]. Echoing the statement of Mullen et al., the Canadian Fitness and Lifestyle Research Institute (CFLRI) reported that females with neither partners nor children at their homes are most likely to be inactive when it comes to regular PE [60]. Conversely, highly educated individuals are active in PE compared to the illiterate or those with lower education levels. Overall, most findings indicate that education, social support, and level of household income have a significant influence on the levels of physical activity.

From workplace condition perspectives, barriers and facilitators may vary based on the type and environment of work. Some daily habits could be explanatory barrier for some female workers. This is reported by Carla Nooijen and her team in 2018 upon studying this among office workers. It was found sitting was a habit in (67%) of the females participated in the study. The two other most common barriers were that, standing was uncomfortable (29%) and standing was tiring (24%). On the other hand, facilitators were the reminders for work breaks (31%), introduction of either standing- or walking-meetings (33% and 29%) respectively [61].

The complexity of income, employment and income was well addressed in many of the above-mentioned studies. As the education and income increase, more adult females participate in regular PE.

Family & Social Support

Regular PE is also associated with psychological benefits, as the participants improve their networking capabilities. Moreover, regularly exercising individuals have higher levels of self-efficacy and a better sense of life control compared to their physically inactive counterparts [62]. Accumulative evidence established that individuals who exercise have better psychological mod states,

physical wellbeing, and register lower absenteeism rates in their workplaces compared to those who do not work out [63]. Overall, active participation in exercise programs by females from an early age enhances confidence and an opportunity to remain physically independent throughout their lives.

Based on existing findings, the most common reason for joining a fitness program is the achievement of health-related benefits such as improvement in body composition, cardiopulmonary fitness and muscular strength, especially as individuals advance in age [64].

Some studies address the factors that may affect females regular PE levels, among them being lack of peer support, negative body image perceptions, past traumatic experiences, especially concerning body weight and too large and overcrowded open spaces and fitness facilities. The factors briefly discussed in this study were evidence that complexities in age, PE levels, and an individual's attitude in the private and social settings have a significant influence on the benefits of regular PE [65,66].

According to El Mailey, et al. through a qualitative study done in two universities in the Midwestern United States to assess perceptions of regular PE among working parents during 2014. Barriers were involvement in family responsibilities, feeling of guilt, absence of support, scheduling restraints, and competitive work duties. Whereas, facilitators were active with children or during children's activities, playing a role model for offspring, making time/prioritizing, benefits to health and family, and having social support. Gender differences were within each theme, but generally, parents stated their priorities had gone to on family after marriage, which is expected and logic [67].

There are a variety of factors that have negative impact on regular PE spanning environmental, psychological, policy, and social domains. While the psychological factors include individual competence and confidence, ecological factors leading to the same comprise of crime-related safety and access to places set aside for regular PE [66]. However, there is greater effectiveness of socio-ecological factors that have high levels of influence, most of which are beyond the health system. According to the Self-Determination Theory (SDT), there is a correlation between extrinsic and intrinsic motives driving physical behavior [68,69]. Existing research seem to solely focus on PE among children & young adults or specific adults with chronic illnesses. Moreover, most literature base the findings on different facility settings without delving into factors such as age, gender, and PE levels.

Physical Exercise Environment

Accumulative evidence indicates that environment plays a preeminent influence on the perception of PE among adult females.

Workplace

Holly D and Swanson V, et al. concluded that workplace environmental context and resources were both important barriers and facilitators for mid-wives on a study conducted in Scotland during 2019. Likewise, negative social influences, family responsibilities, stress, tiredness, unpredictable breaks and shift were barriers, while positive social support facilitated PE as well as exercise facilitators included sponsored classes and protected breaks [70].

Access to Physical Exercise Facility

Functionality like connectivity with other destinations, safety, distance, infrastructure were the most commonly stated barriers. Furthermore, an inadequate variety of structured activities and regular PE services and the crucial influence of accessibility to more family- and dog-friendly facilities were also reported by Cleland V, et al. upon a qualitative study carried out in Australia rural areas during 2015 [71].

Mathews E, et al. reported in 2015 a qualitative study done by a focus group among females of Thiruvananthapuram City, India, that the most physical activity was through household activities. However, they reported adequacy of their activity level but also in need of solving their barriers. Frequently reported barriers were lack of time, motivation, and interest; stray dogs; narrow roads; and not being used to the culture of walking. On the other hand, facilitators of activity we're seeing others walking, walking in pairs, and pleasant walking routes.

Study Limitation

The majority of the available researches are descriptive of qualitative design which does not give overall objective significant view for the common barriers and facilitators of regular PE among females.

Complexity and multidirectional interaction between different SDOH in many occasions, make it difficult to rank the related factors of the common barriers and facilitators of regular PE among adult females.

The need for further quantitative studies still high to give more comprehensive understanding the barriers and facilitators of regular PE among females.

Conflict of Interest

Authors have no financial interest, arrangement or affiliation with anyone in relation to this narrative review that could be perceived as a real or apparent conflict of interest in the context of the subject of this study.

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