LITERATURE REVIEW Open Access

Physical Activity Recommendations for Adults in Yemen

Hend Al_Madani

ABSTRACT

Background: Physical inactivity is one of the most crucial global problems despite the approved impact of physicalactivity in enhancing health and preventing NCDs, osteoporosis, and many other diseases. Thus, WHO encouraged the countries to set their own physical activity guidelines based on the international physical activity recommendations, however, many countries do not have their national Physical activity recommendations such as Yemen in Eastern Mediterranean Region.
Objectives: To suggest proper physical activity recommendations for adults in Yemen based on physical activity recommendations in different countries in WHO regions particularly the Eastern Mediterranean Region.
Method: This study is a literature review. Searching was done on PubMed using the keywords" Physical activity, recommendations, guidelines, Yemen, Arab". The four related studies were chosen. Other studies were chosen by using the keywords in google scholar individually or in combination.
Discussion: The prevalence of national physical activity guidelines and physical activity factors vary among WHO regions. The absence of physical activity recommendations and statistical data in Yemen is obvious. More surveillance using validated tools should be done to assess the recent PA and its related factors. However, although Yemen has its own issues such as Khat chewing habit and conflict, it shares many factors with other Eastern Mediterranean Region countries in general and Qatar in particular such as an unsupportive physical activity environment and limited outdoor activities for women. Thus, Qatar's physical activity guidelines can be recommended as a proper option for Yemeni adults. According to those guidelines, adults should do (30–60) min of moderate exercise ≥ 5 days per week or (20–60) min of vigorous exercise for ≥3 days per week and in case of promoting or maintaining weight loss, they should do (50-60) minutes daily exercise.
Conclusion: Qatar national physical activity guidelines can be suggested as applicable and affordable guidelines for adults in Yemen. However, many studies should be done to assess the recent physical activity and related barriers to draw evidence-based physical activity guidelines for adults in Yemen.

Keywords: Physical Activity, Recommendations, Guidelines, Yemen, Arab

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INTRODUCTION

Physical inactivity is considered now as one of the most serious public health issues that need more worldwide attention [1] since 1 globally 1 in 4 adults is non-active[2]. It is identified recently as a crucial risk factor for global mortality especially with its association with noncommunicable diseases (NCDs), cancer and diabetes [3]. on the contrary, physical activity noticeably improves energy balance and the health of the heart, muscles, and bone[2]. According to IOF (international osteoporosis foundation), physical activity prevents osteoporosis by increasing the strength building and maintenance of bones [4]. When bones in adults are stressed and bear more weight comparing to usual daily activities, they respond by forming more bone by stimulation of bone osteogenesis process [4].

The importance of physical activity had been concerned more after 2008 when the Sixty-first World Health Assembly established an action plan known as'' Global Strategy for the Prevention and Control of Noncommunicable Diseases''[5]. This action plan encourages the state members to set physical activity recommendations that focus on developing national physical activity guidelines and promoting a supportive environment for physical activity implementation[5]. Physical activity recommendations include Frequency, intensity, and duration[6]. Recommended physical activity intensity varies among moderate and vigorous activities. In the moderate physical activity, the heart rate increases but the person still can talk and it includes brisk walking, gardening, dancing, biking <10 miles/hour while vigorous-intensity activity needs more efforts causing rapid breath such as hiking, running, jumping rope, fast-swimming laps, aerobics or biking >10 miles/hour [7].

However, because many countries, especially with low economies, cannot set their own guidelines, WHO was argued to make evidence-based global physical activity recommendations[5]. Those international guidelines are considered as base recommendations that should be modified by policymakers at national levels taking into consideration the unique features of the population[5]. Although each country has its own characteristics, each

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region shares many common features thus WHO divided the world into 6 regions: African Region, Region of the Americas, South-East Asia Region, European Region, Eastern Mediterranean Region, and Western Pacific Region [8]. Unfortunately, not all countries in all regions have their national guidelines, and Yemen in the Eastern Mediterranean Region is one of those countries. Moreover, there is no data about the prevalence of physical activity among Yemeni adults. The reason for information lacking is uncertain but it is more probably related to the poor facilities and policies regarding research centers and health information systems. Poor economy and conflict may play a crucial role in making this condition worse. However, in my view, I can see Yemeni men as moderate physical activity doers since most of them walk every day to their jobs or practicing their jobs outdoors. On the contrary, women's physical activity is more limited as they are less exposed to outdoor activities. On the other hand, suggesting physical activity guidelines need more analytical work than observing. That is why this paper aims to recommend a proper physical activity recommendation for Yemeni adults by analyzing the physical activity recommendations in different WHO regions including Eastern Mediterranean Region.

METHOD

This Study design is a literature review for many articles and journals. Articles are written in the English language only were considered. Advanced searching is done on the PubMed website Using the word "physical activity" 519683 results occur. Adding the keyword "adults" 263643 results occur. By adding the new keyword "guidelines" 6754 results occur. Using key combination search terms which are " Physical activity, guidelines, adults, Yemen, “show no results. That is why the "Arab" keyword was used instead of the "Yemen" keyword. By using these new key combination search terms which are " Physical activity, guidelines, adults, Arab, ", there were 25 results. The author chose the 4 articles which are related to the topic to be reviewed.

To get more studies, searching on google scholar was done using the keywords individually or combined in pairs such as: "Physical activity, recommendation, guidelines, adults, Yemen, physical inactivity, Arab, middle east". The author chose 23 " studies that are available in the Research gate and PUBMED to analyze.

DISCUSSION:

Physical Activity (PA) Recommendation in WHO Regions:

WHO has stated international recommendations for physical activity according to the group age. Physical activity recommendations for adults at age(18-64) include moderate-intensity physical activity for 150 min a week as a minimum period or vigorous-intensity physical activity for at 75 minutes minimum or equivalent combination of both moderate and vigorous-intensity activity [2]. For more health benefits moderate-intensity physical activity can be increased to 300 minutes per week, or equivalent [2]. However, each community should have its own national guidelines taking into consideration the most adequate and feasible options regarding their needs, features, the domain of physical activity, culture, national resources, gender issues, ethnic minorities, the burden of disease, and others [5]. However, not all societies with their own recommendations achieve those guidelines and many of them recorded low percentages of physical activity as we can notice in upcoming countries. The next examples can show an idea about the national PA recommendations in some countries in different WHO regions and their criteria and factors in PA assessment and implementation.

Starting from the Western Pacific region Japan, for example, physical activity recommendations for Japanese adults at age (20–64) years are minimally 60 minutes of moderate to vigorous-intensity physical activity (MVPA) per day as mentioned in the Physical Activity Guideline for Health Promotion 2013 in Japan [9]. However, it has been shown that most Japanese do not exercise sufficiently and only 36 % of males and 28 % of females at age of 20 years or more do a regular activity for minimally 30 minutes 2-3 times a week [9]. The National Health Promotion in the twenty-first century in Japan sets the PA guidelines based on an assessment of the recent situation [9]. This assessment includes the recent physical activity of people which is observed by assessing the daily steps using pedometry or accelerometer in addition to observing the health awareness level of citizens and their working hours which was approved to have a positive relation with PA in Japan [9].

In the Americas region in the USA, the updated PA guidelines state that adults should do moderate-intensity PA for at least 150minutes weekly or vigorous-intensity aerobic physical activity for 75-150 minutes per week or an equivalent combination for both moderate and vigorous-intensity PA[10]. The National statistics show that the percentage of American adults more than 18 years who achieved the PA recommendations is 53.3% for aerobic exercise and 23.2% for aerobic and muscle-strengthening [11]. In the USA people with high BMI have less tendency to follow the recommendations and BMI has considered a significant factor related to PA recommendations implementation [12].

In the European Region, the update data in 2020 showed that from 28 European union member states twenty-three countries have national recommendations while four countries are in the process of developing their guidelines [13]. According to German guidelines, for example, adults have to achieve at least 150 min of moderate-intensity aerobic physical activity per week or 75 minutes of vigorous-intensity aerobic physical activity a week [14]. However, the PA of German citizens is considered better than other European countries but it is still less than the recommendations [15]. In Germany, the setting of PA recommendations should take into consideration working on the existing international guidelines and comparing it with evidence-based quality criteria of the society [14].

In the Southeast region in Malaysia, the physical activity recommendations are at least 150 minutes per week of moderate physical activity according to the Malaysian dietary guidelines [15]. However, Malaysia is considered as a country with high physical inactivity with a percentage of 60% of sedentary adults

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[16]. Sociodemography plays an important role in the determination of PA among Malaysian since it has been approved that older individual, high-income people, women, the well-educated, widowed or divorced Individuals, people in an urban area or who are unemployed in addition to East Malaysian are less physically active comparing to others [16].

In Africa, the prevalence of physical activity varies widely within and between the countries [17]. This variance has been approved globally by using the Global Physical Activity Questionnaire (GPAQ) to assess the physical activity in Africa based on the international guidelines with careful explaining of the questions and using the local languages of the participants [18].

From the studies above we can notice the variety among countries in different regions. Since Yemen is a country in the Eastern Mediterranean Region, studies related to the middle east will be discussed in more detail.

Physical activity in the Eastern Mediterranean Region:

The prevalence of physical activity in the Eastern Mediterranean Region is considered one of the lowest in the world [1]while physical inactivity prevalence (less than 600 MET-minute) is high exceeding 40% in most Arabic countries [19]. By reviewing seven systemic reviews and 229 primary studies after the year of 2000, it has been shown that physical activity prevalence among adults in the middle east considered low comparing to the estimated global prevalence PA with a percentage of 34.3% in Saudi Arabia, 36.5% in Kuwait, 49.5% in Qatar and 57.8% in UAE while some countries show no PA prevalence measures as Yemen in addition to Djibouti, Bahrain, and Syria [36].

Although the absence of data related to the national physical activity guidelines of many Arabic countries, Qatar has its own PA recommendation. According to the State of Qatar National Physical Activity Guidelines, healthy adults aged (18–64) years should do (30–60)min of moderate exercise for 5 days or more per week or (20–60) min of vigorous exercise for 3 days or more per week and in case of promoting or maintaining weight loss, (50-60) minutes daily exercise is needed [20]. But, adults in Qatar did not meet the PA recommendations [21].

In the Arabic region, physical inactivity can be determined by many Socio-demographic and lifestyle factors associated with decreasing the PA such as the increase in age, being married, and urban residence and other factors linked with increasing PA like employment and education level[19]. Many barriers in the Middle East can interfere with Physical activity level as hot climate, inadequate motivation from others especially parents, inadequate transportation system, and lack of suitable places for exercising. However, as in Japan and America which recorded less PA of females compared to males [9,15], Arabic women do less PA than men especially with their limited outdoor activities and Islamic clothes [19] such as niqab-wearing [22]

Those barriers can vary from one Arabic area to another. In Qatar for example, it has been approved that the absence of a supportive environment is the main barrier of PA despite citizens' awareness and motivation level [23]. In Saudi Arabia, lack of support and time were considered the main PA barriers [24]. In Oman, PA barriers can be social factors as limited PA value in society and low outdoor activities for women or environmental factors as climate and limited PA places in addition to lack of adequate policies in health and resources [25]. In Jordan less PA was associated with low income and poverty due to unemployment and poor healthcare [26]. On the other hand, factors as experience better self-worth, prevention of chronic disease, stress relief, stay in shape, longevity, fun, and social benefits were considered as PA predictor factors among Jordan citizens [27]. Weigh control is the main motivational factor of PA in Lebanon [28]. In Egypt, less PA had noticed in high social class adults and lack of exercise supportive environment was considered the main PA barrier [29]. As can be noticed there are many general shared features related to physical activity factors among Middle East countries despite the special characteristics of each society.

Physical Activity Recommendations in Yemen:

As has been mentioned, not all countries have their own physical recommendations and Yemen is one of them. By looking at the studies we can notice the absence of data of Yemen in the global assessment of PA prevalence and factors [30] (Image 1). Even in studies related to PA in Arabic countries, the only data found was about some facts in PA among Yemeni adolescents which show a low prevalence of physical activity among teens [19,31]. Moreover, in the Who global survey and report related to PA, there was an absence of any data related to the prevalence of insufficient physical activity among adults in Yemen [32]. However, from this report, we can notice that Yemen has integrated physical activity programs at primary health care services to prevent NCDs but there are no national targets, plans, or strategies to promote physical activity. Moreover, there is an absence of formal collaboration with non-health sectors and no PA campaigns during the last year before the report or any implementation of international surveillance approaches as the Global School-Based Student Health Survey (STEPS) and Global school-based student health survey(GSHS) during last 5 years in addition to lack of programs related to mandatory physical education at schools or promoting a physical environment in public places [32].

According to the abovementioned PA recommendations in WHO regions in general and in the Eastern Mediterranean Region in particular, many steps should be taken to set the proper PA recommendations. Starting from assessment for recent physical activity especially with the absence of adequate data. Surveillance procedures Should be done broadly and repeatedly to understand the target populations and proper intervention strategies [30]. This assessment can be done by self-reporting measures that are done by people themselves to give an idea about the recent PA [9]. The assessment is followed by setting PA recommendations that exceed the recent level [9] taking into consideration the existing global guidelines of physical activity [14]. Other validated tools for physical activity assessment as the International Physical Activity Questionnaire (IPAQ) can also be applied in assessment [18].

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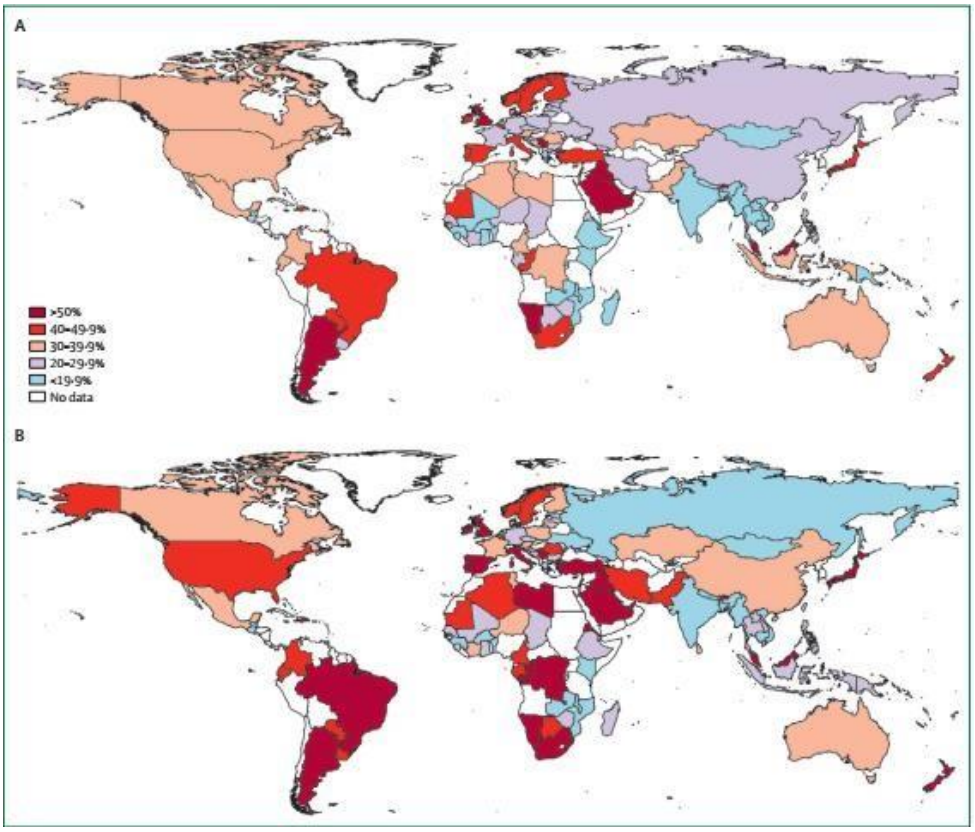

Figure 1. Physical Inactivity in Adults (15 Years Or Older) Worldwide in Men (A) and Women(B)

Physical activity recommendations are not only about determining physical activity intensity and duration but also about promoting physical activity in society especially that many communities do not achieve PA recommendations. That is why identification of barriers in the community is crucial to determine PA recommendations. Yemen shares with other Middle East countries many PA barriers such as the absence of a supportive environment and the limited outdoor activities for women. On the other hand, Yemen has its own features; unlike some Arabic countries, Yemen has cool weather in many places and Yemeni individuals are less dependent on transportation. That is why many people walk for longer distances comparing to the surrounding countries. However, many Yemeni citizens have the habit of Khat chewing which is not found in other Arabic countries. Khat is leaves that chewed by people especially in the afternoon and evening periods [34] and it has a mild stimulant effect (Image 2). Studies show that there is an increase in both blood pressure and heart rate at hourly intervals after starting to chew khat compared with baseline values [35]. It has been estimated that 90% of Yemeni adult males chew khat three to four hours daily while 50% women or even more chaw khat more or less frequently [37]. Most chewing sessions happen in-group more than individually [38] as it is more related to social gathering especially at weekends or weddings with an average duration of about 6 hours [39]. During the khat chewing session, people usually feel more cheerful and optimistic but after about 2 hours they feel more depleted as tension, emotional instability and irritability begin to appear [38]. In other words, khat can show an increase in the ability of physical performance as it contains some stimulants as amphetamines, cathine/cathinone [40], but in reality, as a cultural social-based habit Khat chewing can cause physical inactivity since many chewers sit and gather with other chewers for a long time.

Image 2. Khat leaves

Another recent issue in Yemen is conflict. Conflict in Yemen could be associated with more physical inactivity due to the fear of going outdoors, destroying activity areas, and increasing poverty. All those unique features should be taken into consideration in setting PA

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recommendations for Yemeni adults. However, because of the linear association among the countries of the same Who region [30] and the noticed similarities of PA barriers and factors among Yemen and middle east countries, Qatar national PA guidelines can be recommended as proper guidelines for adults in Yemen. This recommendation is to do moderate-intensity physical activity for 30–60 minutes for 5 days or more per week or vigorous-intensity physical activity for (20–60 minutes) for 3 days or more per week. And to get additional health benefits it would be useful to exercise for (50-60) minutes every day. Comparing to the WHO PA recommendations, the previous Qatar PA recommendations are more applicable along with the PA barriers in Yemen (Table 1).

Table1. Comparison of WHO Physical Activity Recommendations and Qatar National Physical Activity Recommendations

PA recommendations	WHO	Qatar
Moderate-intensity physical activity	at least150 minutes per week	(30–60) min for 5 days or more per week
Vigorous-intensity physical activity duration	at least75 minutes per week	(20–60) min for 3 days or more per week
For additional health benefits	moderate-intensity physical activity for 300 minutes per week, or equivalent	50-60 minutes daily exercise

However, to get research-proven recommendations, more studies should be done to analyze the barriers and motivational factors of PA among Yemeni individuals. Moreover, many policies and proper interventions should be applied to promote PA behaviors among Yemeni individuals. For instance, more sports playgrounds or parks can be built, more paths for walking, jogging, and biking should be constructed in addition to fitness centers. Furthermore, it is crucial to take into consideration the conservative nature of the Yemeni community, so it is a must to build many indoor physical activity centers especially for women in which they can practice different types of exercises as aerobic exercises, swimming, and balancing exercises. And to enhance all those facilities, more social activities should be organized which will motivate the citizens to engage in those activities.

CONCLUSION

Setting national physical activity recommendations should be based on the global physical activity guidelines relating to the recent physical activity of society. Setting those recommendations should also analyze the factors associated with motivating and preventing physical activity among adults. In the Middle East, PA is related to many factors as age, economy, climate, employment, education level, urbanity and rurality, marital status, and to a more extent physical activity environment and women outdoor activities. Like Arabic countries, Yemen has limited public physical activity places and few activities for women and unlike other Arabic countries. Yemen has its own issues such as Khat chewing habits and conflict. Due to many physical activity factors and geographical proximity between Qatar and Yemen, the national physical activity of Qatar can be suggested as applicable and proper guidelines. Guidelines of Qatar states that adults should do (30–60)min of moderate exercise for ≥ 5 days per week or (20–60) min of vigorous exercise for ≥ 3 days per week and for additional health benefits (50-60) minutes daily exercise is needed.

Physical activity assessment should be done and much statistical data should be collected to analyze the recent physical activity among Yemeni adults and address cultural, geographic, and other barriers to physical activity engagement. Based on those studies, evidence-based physical activity recommendations can be drawn and national policies should be implemented to promote physical activity among adults in Yemen.

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