

The Effect of Social Media Health Education on Physical Activity among Saudi Adult Females Attending Ministry of Health Primary Health Care Centers of Jeddah Kingdom of Saudi Arabia, 2018. (Interventional Study)

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ABSTRACT

Background: The relationship between physical activity and better quality of life, and association between inactivity and various non-communicable diseases are well documented. The objective of present study was to describe pattern of physical activity in women attending primary health care centers in Jeddah, and to evaluate the impact of utilizing social media to encourage Physical Education in inactive women.

Materials and Methods: Through a cross section study design, 310 attendants of the primary health care centers in Jeddah were selected randomly to assess the pattern of Physical Education by using Global Physical Activity Questionnaire (GPAQ) version 2.0. Out of the detected inactive women, 35 were subjected to an intervention using social media to encourage physical activity; the impact of intervention was done using pre-post analysis.

Results: Only 13(10.3%) of the respondents reported that they exert vigorous activity at work, and a greater percentage 167(55.5%) exerting moderate activity. Only one quarter of the respondents 73(24.3%) pointed 8 that they perform vigorous activity in recreation and leisure time with average METs of (median, IQR: 1440: 960-2640). The overall energy expenditure of active respondents accounted for and average METs of (median, IQR: 2640: 1440-5760). The number of respondents who had been categorized as being inactive was 90 corresponding to 29.9% of the respondents. After

intervention, 17(48.6%) of the originally inactive women became active with a statistically significant increase in average METs which reached up to (median, IQR: 3100: 1380-5300) $p < 0.05$.

Conclusion: The prevalence of inactivity of women is considerably high and accord similar studies in other settings, our trial in its current form using social media is effective in encouraging physical activity in physically inactive women.

Keywords: Physical Activity, Primary Health Care Centers, Global Physical Activity Questionnaire (GPAQ) Version 2.0.

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INTRODUCTION

Physical activity (PA) is intimately related to improvement of health of individuals, with positive impact on health status of the overall community. Worldwide, physical inactivity has been identified as the fourth leading risk for global mortality (6% of deaths globally).¹ According to the World Health Organization (WHO), Physical Activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure.² The Centers for Disease Control and Prevention (CDC) recommend P Physical Activity tailored in terms of type and duration for each age group. Regarding need Physical Activity for

healthy adults aged 18-64, they need at least: 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (i.e. brisk walking) every week and muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms).³ Social media carries a considerable potential for health education (HE) and health promotion. Meanwhile, in the kingdom of Saudi Arabia (KSA), a rapid development in standards of living have touched all aspects of people's lives, especially widespread use of new technologies and social media.⁴ The aim of the present study was

to determine the prevalence of physical activity and to investigate the relation between demographic, socio-economic determinants that correlate physical activity and to estimate the effect of social media in health education of physical activity among Saudi adult females attending primary health care of ministry of health in Jeddah, Kingdom of Saudi Arabia during 2018 by applying pre and post interventional study.

MATERIALS AND METHODS

This study was carried out in Jeddah, Kingdom of Saudi Arabia and all Saudi adult females aged between 18–65 who were attending urban PHCCs in Jeddah 2018 were included in the study. There are 44 ministries of health primary health care centers distributed over geographical and administrative jurisdiction of four general hospitals. The study was conducted in two phases; the first one was a cross sectional study design to achieve the first and second objectives. The second one was Pre-Post interventional study to assess and estimate the effect of social media on Physical Activity by using WhatsApp. Participant coming to the Primary Health Care Centers for follow up, having any medical problem contraindicating to Physical Activity, and pregnant ladies were excluded from the study. Sample size was calculated by using Raosoft calculator. Based on an estimated prevalence of 50% to achieve maximal sample size, and accepted margin of error at 5%, with confidence level set at 95%, the minimal sample size to achieve the study objectives was 300 out of an estimated population of 20,000. Through a multistage selection technique, where in first stage, one Primary Health Care Center was selected by simple random sampling from each sector. In the second stage the first female attending the chosen PHCC who fulfilled the inclusion criteria was invited to be enrolled in the study. Then, by using systematic random technique, every other attending woman who fulfilled the inclusion criteria was invited to be included in the study, until completion of the required sample from the Primary Health Care Center was achieved. Data was collected using tools (instruments). Tool 1 was a Questionnaire (Global Physical Activity Questionnaire (GPAQ) version 2.0.). The questionnaire was developed by WHO for Physical Activity surveillance in countries. This questionnaire is Valid & reliable measures of Physical Activity. (Using Arabic copy

of the Questionnaire). Tool 2 was personal information including demographic, socio-economic determinants (age, gender, nationality, education level, marital status, occupation, income, medical problem, contraindication to physical activity, disability and pregnancy), and mobile number was taken for the purpose of the study with clear consent explaining the aim and technique of the study.

Data collection was done in two phases. The first phase where the questionnaire was filled out by the participants. The second phase (interventional) was where the health education intervention took place. Written consent was taken from each participant. The data was statically analyzed and then prevalence of physically active and physically inactive females was determined. From the physically inactive female group a randomly selected sample (n=35) was selected to be enrolled in the second interventional phase. The researchers created a WhatsApp group for eighty randomly selected physically inactive females. During the month, translated from English to Arabic scientific materials about physical activity and its health benefits were sent to the group on a daily basis. The scientific materials vary between Centers for Disease Control and Prevention videos, Saudi Ministry of health infographics, WHO educational materials and AHA/ACC physical activity guidelines. Through the interventional phase all participants' questions and queries were answered by the researchers. By the end of the interventional phase the GPAQ questionnaire was created online via google drive and sent again to the group to be filled by the participants for analysis. Data entry and analysis was done by using the SPSS version 21. Shapiro-Wilk test was used to verify normality of the quantitative variables. For not normally distributed variables, median and interquartile range (IQR) were used for description of the data and Wilcoxon test was used for pre-post analysis for the significance of difference. The chi-square test was used to assess the significance of categorical variables, P value <0.05 was considered as an indication for statistical significance. Ethical approval was taken from the Joint Program of Family Medicine and from the regional ethical committee board in the directorate of health affairs in Jeddah was collected. All data will be kept confidential and it will not be disclosed except for the study purposes. The research is Self-funded.

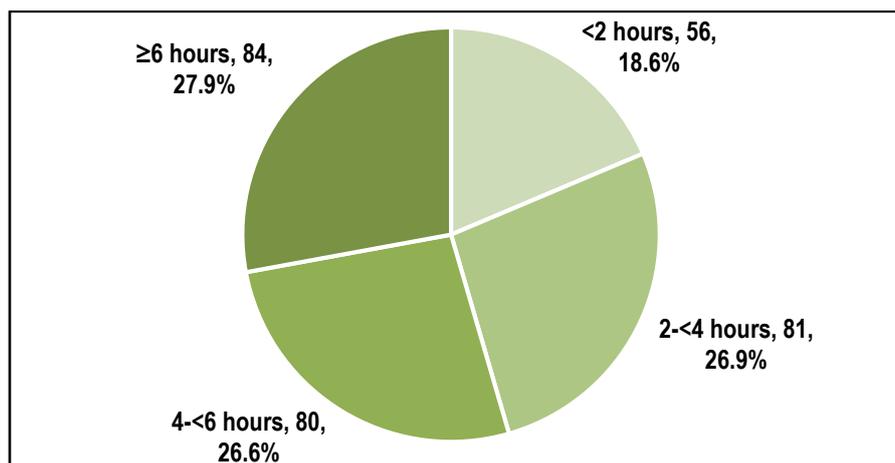


Figure 1: Duration of daily sedentary behaviours

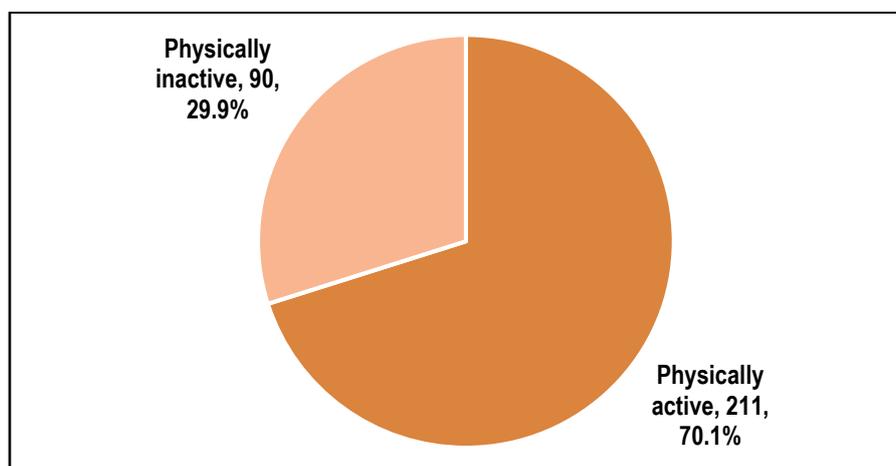


Figure 2: Prevalence of physical inactivity among respondents.

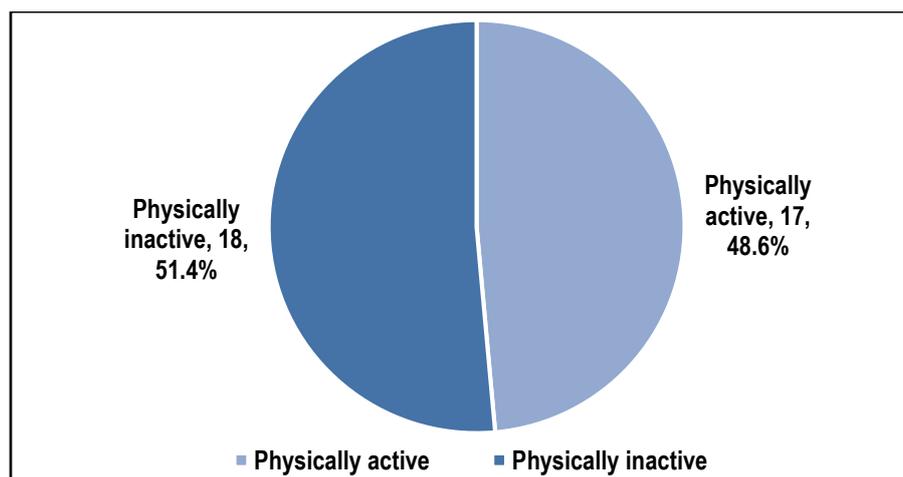


Figure 3: Prevalence of physical inactivity after intervention on inactive group.

Table 1: Prevalence of inactivity according to demographic characteristics of the respondents.

Demographic characteristics	Physical activity				X ²	p
	Inactive		Active			
	No	%	No	%		
Age					1.254	0.740
18 < 29 years	18	25.0%	54	75.0%		
29 < 39 years	29	30.5%	66	69.5%		
39 < 49 years	20	30.8%	45	69.2%		
≥49 years	23	33.3%	46	66.7%		
Marital status:					0.680	0.835
Single	30	30.0%	70	70.0%		
Married	51	30.0%	119	70.0%		
Widowed	4	40.0%	6	60.0%		
Divorced	5	23.8%	16	76.2%		
Educational level					0.106	0.745
Below university	29	31.2%	64	68.8%		
University and higher	61	29.3%	147	70.7%		
Employment					0.001	0.978
Employed	49	31.4%	107	68.6%		
Unemployed	40	30.1%	93	69.9%		
Monthly income:					4.453	0.108
<5000 SR	14	21.2%	52	78.8%		
5000-<15000 SR	53	31.0%	118	69.0%		
≥15000 SR	23	38.3%	37	61.7%		

Table 2: Demographic characteristics of the intervention group (n=35).

Characteristics	No.	%
Age groups:		
18 < 29 years	6	17.1
29 < 39 years	11	31.4
39 < 49 years	10	28.6
≥49 years	8	22.9
Marital status:		
Single	10	28.6
Married	23	65.7
Divorced	2	5.7
Educational level:		
Below university	12	34.3
University and higher	23	65.7
Employment:		
Employed	15	42.9
Not employed	20	57.1
Monthly income:		
<5000 SR	6	17.1
5000-<15000 SR	18	51.5
≥15000 SR	11	31.4

Table 3: Prevalence of inactivity after intervention according to demographic characteristics of the respondents (n=35).

Demographic characteristics	Physical activity				X ²	p
	Inactive		Active			
	No	%	No	%		
Age					NA	NA
18 < 29 years	3	50.0%	3	50.0%		
29 < 39 years	3	27.3%	8	72.7%		
39 < 49 years	6	60.0%	4	40.0%		
≥49 years	5	62.5%	3	37.5%		
Marital status:						
Single	4	40.0%	6	60.0%		
Married	11	47.8%	12	52.2%	NA	NA
Divorced	2	100%	0	0.0%		
Educational level						
Below university	6	50.0%	6	50.0%		
University and higher	11	47.8%	12	52.2%	0.015	0.903
Employment						
Employed	5	33.3%	10	66.7%		
Unemployed	12	60.0%	8	40.0%	2.440	0.118
Monthly income:						
<5000 SR	3	50.0%	3	50.0%		
5000-<15000 SR	8	44.4%	10	55.6%	NA	NA
≥15000 SR	6	54.5%	5	45.5%		

RESULTS

According to the study design 301 females were selected randomly from attendants of primary health care centers to determine prevalence of inactivity, out of the inactive, thirty five were selected for testing the impact of predesigned social media health education on modifying their activity. The results section comprises two main parts, the first one describes characteristics and prevalence of inactivity among the study group. The second part presents the results of the intervention.

Figure 1 shows that 27.9% of the respondents stay inactive for six or more hours daily. Overall, the number of respondents who had been categorized as being inactive was 90 corresponding to 29.9% as displayed in Figure 2. The results showed that almost one third of the intervention inactive group (31.4%) aged 29-39 years, and almost two thirds (65.7%) were married. The majority of them (69.1%) had university or higher qualifications, and slightly more than one half (54%) were employed, and one half (51.5%) had monthly income between 5000 and <15000 SR [Table 2]. After intervention, 17(48.6%) of the originally inactive women became active [Figure 3], with a statistically significant increase in average METs which reached up to (median, IQR: 3100: 1380-5300) $p < 0.05$.

Table 3 shows that although the percentages of women who became active were higher among those aged 29-<39 years (72.7%), single (60%), employed (66.7%) and those who had monthly income between 5000-<15000 (55.6%), these differences were not statistically significant $p > 0.05$.

DISCUSSION

The World Health Organization (WHO) stressed on the cumulative knowledge about the link between physical inactivity and several non-communicable diseases such as cardiovascular diseases and diabetes mellitus, therefore, there has been strong recommendations encouraging regular performance of physical activity.²

Therefore, the current study aimed at evaluating prevalence of inactivity among Saudi females attending primary health care in Jeddah, and assessing effectiveness of proposed intervention for encouraging inactive respondents to become physically active. The reason behind targeting females in the current study is the findings of previous national survey of 4758 participants conducted in Kingdom of Saudi Arabia in 2014 which showed that the percentage of physically inactive females was 72.9%.⁵ In our study, the prevalence of inactive Saudi females was 29.9%, which is much lower than what had been reported in previous studies carried out in Saudi Arabia. According to our study, there was not statistically significant correlation between socioeconomic demographic characteristics and physical activity, which comes in contrast to what had been demonstrated in Eastern Saudi Arabia, where the researchers found negative relation between both high education level and occupation status from one side and leisure related physical activity.⁶

In our study, we created a WhatsApp group for physically inactive females, through which, simplified scientific materials about physical activity and its health benefits were sent to the group on a daily basis for one month. After intervention, almost one half (48.6%) of the originally inactive females in our study became active, with a statistically significant increase in average METs < 0.05 . Similar findings were reported in other studies with different

degrees; in USA, using Facebook group increased social support related to raising physical activity,⁷ and in Belgium, the researchers used electronic health intervention for adults, called 'MyPlan 1.0', they found that intervention group had significant increase in Physical Activity in compared with control group.⁸ On theoretical basis, this discrepancy could be explained by the transtheoretical model of health behavior change.⁹

This model posits that health behavior change involves progress through six stages of change: precontemplation, contemplation, preparation, action, maintenance, and termination, the strike for starting this cascade of processes is usually the gain of knowledge, in this phase, we can accept "knowledge as striker" but it will not typically end by changing behavior unless it pass by all stages till adoption of the new behavior. This concept should be viewed very clearly for interventions targeting change of behaviors; it is also essential to know that there is a two way directions between successive steps i.e. one could relapse from contemplation to pre contemplation; this reversed directions could explain the failure in sustaining newly adopted behavior, and it also point to the necessity of continuation of health promotion activity to ensure sustained adoption of healthy behaviors. Applied research that were applied under this model has demonstrated dramatic improvements in recruitment, retention, and progress using stage-matched interventions and proactive recruitment procedures.¹⁰

CONCLUSION

The prevalence of inactivity in Saudi females is considerably high reaching in our study up to 30%. Our intervention using social media in health education to raise awareness and encourage female to practicing the recommended form of Physical Activity is effective in encouraging physical activity in sedentary women. The majority of participants still believed that it's a distinctive, and effective method of health education and its better than using the old methods of health education and most of the them requested to keep the educational material in their mobile phones for reference.

RECOMMENDATIONS

Based on the findings of our study, the following can be recommended:

- All female patients attending primary health care centers in Kingdom of Saudi Arabia should undergo physical activity assessment by direct asking about their physical activity level and follow up to their anthropometric measurements to assess their general health.
- All physicians who are working at Primary Health Centers should fulfill their duty towards health education to their patients to practicing a healthy lifestyle.
- Activating the role of health education clinics in Primary Health Centers to educate patients about the importance of physical activity and increase their awareness about health benefits of Physical Activity.
- Pay a specific attention to female in our society in their general health and try to overcome the difficulties and barriers that face them towards practicing physical activity.
- Finding an easy and an inexpensive application in social media to facilitate communications between patients and their health educator in Primary Health Centers.

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