

The Effect of Education on Physical Activity Style and Body Mass Index on Employed Women in Iran University of Medical Sciences

Maryam Nooritajer

Department of Health and Family Planning, Faculty of Basic Sciences,
Islamic Azad University Branch of Islamshahr, Islamshahr, Iran

Abstract: Nowadays much effort regarding practices for promoting health is underway. Health professions, previously being therapy-oriented, are now focused on prevention and providing health via improving lifestyles and eliminating factors that have adverse effects on public health, the purpose of this study is determining the effect of education on physical activity style and Body Mass Index on employed women at Iran University of Medical Sciences. As a Semi-experimental and interventional study, 200 volunteers were with recruited. The data collecting tool was the Life Assessment Quality questionnaire; Different means were used, Chi-square test and the paired t-test for forward method. The results revealed that over 35% of the women before educational intervention were overweight and obese. This figure was lowered to 28% after education also; physical activity style improved in 72% of women. The results have shown education has a beneficial effect on physical activity style regarding the fact that educational needs a national intent and a detailed program that could only be implemented by the contribution and the support of the ministry's administrators, we draw the attention of the administrators and planners towards planning and policy making in this direction.

Key words: Physical activity style • Body mass index • Education • Women

INTRODUCTION

Much effort regarding practices for promoting health is underway nowadays. Health professions, previously being therapy-oriented, are now focused on prevention and providing health via improving life styles and eliminating factors that have adverse effects on public health [1].

Lifestyle and especially physical exercise style is regarded an effective factor in the incidence of chronic diseases such as malignancies, hypertension and chronic diseases like cardiovascular diseases. Thus, the responsibility degree and the personal preferences of individuals during their lifetime considerably affect their lifestyles [2]. Available evidence reveals a correlation between the lifestyle and public health. Numerous health problems (e.g. obesity, cardiovascular diseases) are somehow related to alterations in the lifestyle of individuals [3].

The World Health Organization claims that the worldwide increasing prevalence of obesity has

endangered the health of many people and a chronic obesity trend is seen in both developed and developing countries [4]. In the past decade, changes in lifestyle (e.g. alterations in diets and reduction of physical exercise) have caused a 50% increase in the obesity rate [5]. Also increased exercise is associated with a lower waist hip ratio (WHR), percentage of body fat and high-density lipoprotein cholesterol level (HDL-C) [6].

An increase in income and improving in public health care in different countries have made an epidemiological transition and changes in the epidemiological leads in total creates new challenges health care systems to face .planning have to come into consideration since 300 million people out of one billion suffer from obesity and chronic cardio respiratory diseases [7].

Performing physical exercises 40 minutes a day (as rapid walking, cycling and aerobic exercises) has a beneficial effect on individuals' health. Emphasizing on physical activities and aerobic exercises decreases the risk of diabetes and heart diseases [8].

Corresponding Author: Maryam, Nooritajer, Velenjak Ave, Sewom Gharbi Valley. No: 3 Iran-Tehran,
Fax: ++98(228) 2356176, Mob: 0912 2839745, Tel: ++982122408514
Email: maryamnoorytajer@iiu.ac.ir, maryamnoorytajer@yahoo.com

In Iran prevalence of obesity in the women is 39.5% with central obesity prevalence using WHR and WC cut-points 72.2% and 26.6% respectively. 70% women of between 15-25 yrs of age and 80% between 25-34yrs of age have no physical activity [9]. The duration of physical activity of women who were employed at IUMS in 2006 was 4 hours a week [10]. Schmaltz Results showed participating in physical activity can lead to positive self-esteem among adolescent girls, particularly for younger girls and those at greatest risk of overweight [11].

Physical activity is effective in improving cardio respiratory fitness in overweight and obese women with type 2 diabetes. Physical activity promotes weight loss and improves metabolic control in patients taking part in lifestyle intervention programs [12]. The researchers showed the vigorous exercise in the premenopausal women may promote a more favorable lipid profile, even in the presence of increased body fat [6].

In this regard, numerous studies have revealed that educating lifestyle (including physical exercise style) has a beneficial effect on the quality of life. Five different environments are usually recommended for educating healthy lifestyles, namely: schools and academic institutions, communities, workplaces, business centers and health centers [13].

Performing programmed aerobic exercises may have a beneficial effect on some symptoms of menopause like flushing [14]. Women who perform regular physical activity also experience less vasomotor symptoms, less psychological instability, less sexual disorders and higher life quality standards as compared to physically inactive women [15].

Educating women with the aim of promoting their health is of considerable importance. In fact, education is a process that affects and is affected by individuals' lifestyle and social environment [16]. The educational strategy is also considered economically cost-benefit. In other words, 3-4 dollars are saved in the health costs of a nation for each dollar spent on educating that nation's individuals or patients [13].

Regarding the important role of women, since they have numerous responsibilities both at home and at their workplace and thus, implementing a healthy lifestyle promotes their general health. The results of the present research and also of subsequent researches may act as a pioneer in implementing prevention programs for modification of physical activity style on women employed at IUMS.

MATERIALS AND METHODS

The method used is a Semi-experimental study with one group in pre and post education. The present research was performed in the central organization and the different faculties of IUMS. The test had a 95% confidence interval and 80% potency. Our main hypothesis was that our intervention should decrease the BMI by at least a degree, for the effect of education to be considered statistically significant and thus the sample size was determined to be 200 subjects. It should be mentioned that on the basis of similar studies, the standard deviation was estimated to be 2.5 self reporting (via a self-performing questions).

The data collecting tool was the Life Assessment Quality (LAQ) which consists of 9 questions, LAQ was developed in 1979 by NWI (Nation Wellness Institute) and (Healthier People Network) and validity and reliability was approved in 1979 and 1989, respectively. Consequently, in 1989 NWI declared that this questionnaire was valid. Therefore, this questionnaire in connection with the functions and methods related to health behaviors of people with different age group announced valid [17] and exists in the community health nursing reference book, every classification was selected randomly.

The *Validity* of the questionnaire was confirmed by experts and *Reliability* was determined by test-retest method.

At first the weight and height of women was measured and the BMI of them was detected. Then they were asked to fill the LAQ educational booklet about their physical activity style. After 2 months, they were asked them again complete LAQ by the self-performing method. It should be noted that essential guidelines were rendered to the subjects by face-to-face. During the two-month period in which the educational booklet was presented to the women, the researcher contact them telephonically in a two week interval and also gave them her phone number so that they could call her and ask any questions regarding the educational booklet. *Inclusion* criteria were; having at least one year experience while currently being an employee at Iran University of Medical Sciences, *Exclusive* criteria include: being pregnant, major bone disease and cancers, about *Ethical* criteria we told them that the provisions were completed within the questionnaire, which will be held confidential and anonymous and finally a comprehensive global report will be presented. Descriptive statistical methods were used

for analyzing the subjects' data on the basis of the scores of physical activity style. For questions about feeding options, the results never approach a zero score, never (0) sometimes rated (1) and often " Rating (2) most of the time points (3) always rated (4) have calculated that the total score between 0-36, Afterwards, we used the paired t-test for measuring the effect of education on physical activity style and comparing it to the pre-educational period; the t-test was used for comparing the subjects' scores obtained before and after education in each group. The SPSS software (version 14) was used for data analyzing.

RESULTS

The results of the present study revealed that a maximum of 70.5% of the women were married, 44.5%, of them were 34-44 years old, 28.5% were faculty members, 43.5% had two children, from which the maximum

children's age was 5-9 years, the levels of education was: 26% of them had a B.S, 21% a M.S and 13.5% a PhD. Also 69% of them used contraceptive pills. Before and after education responses are summarized in (Table 1) for example 44.5%, of women were 34 and undertook rapid walking, swimming and other water sports, handball, basketball and football.

Before education 35% and after 28% women were obese (Table 2). The changes of physical activity status after education had a larger effect on women aged between 35-44 years with 3.1±8.4 and the most changes on BMI were after education on physical activity with 4.75 ± 6.35 that had 2 children.

Educational measurement had improved physical activity style and reduced BMI in 72% of the employed Women; the score of physical activity style was increased (Table 3) on comparative BMI (Mean and SD) before and after education (13.08±8.23 vs.16.24±10.05).

Table 1: Frequency distribution of physical activity style before and after educational intervention

Physical activity style	Always		Most of the time		Often		Some times		Never	
	Before education	After education	Before education	After education	Before education	After education	Before education	After education	Before education	After education
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
1-I am doing exercise at least three times a week for 15 to 30 minutes	26 13.3%	30 15%	20 10.2%	28 14%	22 11.2%	30 3.5%	75 38.3%	53 27%	53 27%	47 23.9%
2-I can doing exercise until my heart and sweat too much more	15 7.7%	23 12%	18 9.2%	30 15%	37 18.9%	39 19.8%	47 24%	23 12%	67 34.2%	56 28.7%
3-I interrupt the exercise before I felt too tired	29 14.8%	30 16%	29 14.8%	34 18%	56 28.6%	49 25.7%	45 24%	23 11%	45 23%	33 17.3%
4-I am doing exercise with comfortable with the status of peace and happiness	30 15.5%	41 21%	29 14.8%	39 20%	48 24.7%	50 25.6%	33 17%	13 6.6%	34 17.5%	32 16.4%
5-I prepare my body before exercise	16 8.4	32 17	22 11.5	30 16%	34 17.8%	35 18.4	47 25%	14 2.7%	61 31.9%	46 24.2%
6-I can make my body ready after exercise	14 7.4%	23 12%	16 8.5%	30 16%	23 12.2%	30 15.8%	53 28%	19 9.6%	80 42.3%	54 28.4%
7- I am walking on possibility	52 26.4%	60 30%	42 21.3%	40 20%	41 20.8%	50 25.4	35 18%	72 36%	16 8.1%	12 6.1%
8-I can doing the exercise heavy sports like tennis swimming, handball, basketball and football	4 2.1%	8 4.2%	12 6.2%	28 15%	25 12.9%	52 27.2%	40 21%	39 20%	97 50%	62 33%
9-I am doing the exercise after intense sports activity at least 5 minutes in the light activity such as walking	10 5.3%	18 9.5%	14 7.4%	32 17%	27 14.2%	33 17.4%	52 27%	23 12%	77 40.5%	55 28.9%

Table 2: Frequency distribution of body mass index (BMI) before and after educational intervention in women

After education Before education Classification of BMI	Classification of BMI after education								Total Sum	
	< 20		20 - 24.99		25 - 29.99		≥ 30		n	%
< 20	10	5	2	1	0	0	0	0	12	6
20 - 24.99	2	1	80	40	2	1	0	0	84	42
25 - 29.99	0	0	7	3.5	63	31.5	2	1	72	36
≥ 30	0	0	0	0	7	3.5	25	12.5	32	16
Total Sum	12	6	89	44.5	72	36	27	13.5	200	100

1.5 person (8%) after education BMI had decreased

Table 3: Mean \bar{x} and standard division physical activity style before and after educational intervention in women

Physical activity style	Mean	SD
Before education	13.08	8.23
After education	16.24	10.05

□ Comparative means before and after used of paired t test P< 0.000

DISCUSSION

The results of this study showed relation to the general purpose research the women's score of physical activity style was elevated by approximately 3.16 points after education; the results of paired t-test showed that this relation was statistically significant ($p < 0.000$). As such; the hypothesis of the research was supported. In this regard studies in Jordan showed that 26% of female students were either overweight or obese (Mean BMI 23.1 for females) [18].

The adolescents with foreign background should participate in physical activity to prevent overweight and thereby improve physical health [19].

Jafar research showed there was a significant reduction in BMI of appetite with simple received physical training and dietary measures [18].

In addition, the prevalence of obesity in Iranian women is higher than Saudi Arabian women and lower than Kuwaiti women [20]. Perhaps the difference of the economic status in these regions was one of limiting factors in this research. Lifestyle factors and women's social culture were one of the points of atone of this study. Hubáček suggested that unfavorable socioeconomic statuses in an urban and an unpleasant urban environment are the background factors [21]. The COE showed effect of educational exercise programs [on activity level] was confirmed [22].

The results of this study revealed that educational intervention affected physical exercise style and decreased BMI in women employed in IUMS and all the

interventions had a statistically significant correlation with the variables of the research.

Esteghamati results suggest the importance of the preventive effect of education; that had an effect on community health, a theory which has attracted much attention in recent years emphasizes that lifestyle is the basis of socioeconomic development and the problem of physical activity style is a multi factorial one and is rooted in many developmental areas such as education and demography [21].

Attention for physical activity style is one of great importance considering that it prevents obesity. One of the accepted points of this study has somewhat challenged the effect of education on physical activity style and BMI in employed women. Implementing educational programs has a particular effect on physical activity style, which in turn mandates programming and policy making by the employers of insurance companies and financing foundations for facilitating the exploitation of sport clubs in IUMS.

ACKNOWLEDGEMENTS

This study was financially supported by research grant no.628 from Iran university of Medical Sciences (IUMS) and the employed women who participated in the study are gratefully thanked.

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