

Using the Health Belief Model to Understand Physical Activity Behavior among Older Adult at Geriatric Care Home

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ABSTRACT

Background and objectives: PA is a highly successful behavior for preventing and controlling a wide variety of common disorders and it plays an important part in the promotion of a healthy lifestyle as well as the reduction of death rates. The study aimed to assess the physical activity behavior level and to identify the association between study variables and PA.

Methods: A descriptive study was conducted at geriatric care home to identify the older adult behavior related to physical activity. The study included a random sample of 70 older adults who were selected from geriatric care home in Baghdad City. The study data were collected by use PASE questionnaire and questionnaire of health beliefs about physical activity. The descriptive statistical measures of frequency and percentage were used. Mean and standard deviation were also used. The linear regression, independent-sample t-test, and one-way analysis of variance were also used.

Results: The study showed that the majority of the participants in the study were aged between (60-65) years and most of them were males (65.7%), and the majority are singles (38.6%), with respect to the level of education, less than a half are elementary school graduates (45.7%), and more than two fifth are overweight (42.9%). The study finding indicated that the clear majority have a fair physical activity level (92.9%) followed by a small proportion who enjoy a good physical activity level (7.1%).

Conclusion: Researchers concluded that using the HBM to understand PA behavior in general provides a better understanding of how such beliefs can be influenced to improve older adults' physical activity engagement. The best concept of the health belief model to understand physical activity behavior was cues to action.

Recommendations: The researchers recommended designing illustrated indicative programs of physical activity that take into account individual differences between older adults and those who suffer from diseases or disabilities and programs that promote health beliefs and correct misconceptions about physical activity among older adults.

Keywords: Physical Activity (PA) behavior, Old adults, Health Belief Model (HBM)

INTRODUCTION

Physical activity (PA) is a highly successful behavior for preventing and controlling a wide variety of common diseases. ⁽¹⁾ And it plays a fundamental part in the promotion of a healthy lifestyle as well as the reduction of death rates. ⁽²⁾ PA is defined as any physical movement induced by the contraction of skeletal muscles that results in an increase in energy expenditure. It comprises exercise as well as other activities that need bodily movement and that are performed as part of everyday activities such as playing, working, active transportation, domestic chores, and recreational activities. ⁽³⁾ Physical activity is thus classified as a "behavioral category" as it encompasses a variety of behaviors. ⁽⁴⁾

Regular PA is important to reduce the risk of falling, improves mobility, improves cardiorespiratory and muscular fitness, and enhances independence and social interactions while preserving cognitive capabilities. ⁽⁵⁾ Physical inactivity (PI), on the other hand, is responsible for 3 million deaths per year and 6–10% of major non-communicable disease occurrences. ⁽⁶⁾ PI is a significant risk factor for the development of chronic disease in older adults. ⁽⁷⁾ It is considered one of the main causes of early death in developed nations, as it has been linked to the development of numerous chronic illnesses like cancer, cardiovascular disease (CVD), type 2 diabetes, and obesity. ⁽⁸⁾

In spite of the fact that physical activity is critical for healthy aging, physical activity levels frequently decline as people age. ⁽⁹⁻¹⁰⁾ This is more apparent in the residents of geriatric care homes. This is what was observed through a study conducted by Weeks and his colleagues, where it was found that the levels of physical activity of older adults residing in nursing homes were lower than the levels of activity of older adults who resided in the community. ⁽¹¹⁾

According to what the World Health Organization (WHO) recommends, older people aged 65 and up should engage in 150–300 minutes of moderate-intensity aerobic physical activity or 75–150 minutes of vigorous-intensity aerobic physical activity every week, in addition to at least two or more muscle-strengthening activities per week. ⁽¹²⁾ If older adults are unable to meet the guidelines due to chronic illnesses, they should nevertheless

remain as active as their capacities and conditions allow. While we cannot live forever, we can live longer and be healthier in our later years by making a few lifestyle modifications. ⁽¹³⁾ Behavior modification is critical in the prevention of noncommunicable illnesses. ⁽¹⁴⁾ Consistently adhering to health behaviors is essential for health promotion. ⁽¹⁵⁻¹⁶⁾ In particular, PA has been highlighted as a crucial behavior to target in order to boost physical and mental health. ⁽¹⁷⁾ Health Belief Model (HBM) is one of the earliest models in which behavioral science theories are utilized for health problems and the relationship between behavior and beliefs is demonstrated. ⁽¹⁸⁾ And one of the most extensively utilized psychological theories of health behaviour. Health belief model (HBM), encompasses both psychological readiness and normative or environmental influences on health behavior, encompassing six components: perceived susceptibility and severity, benefits, barriers, cues to action, and self-efficacy. It helps to comprehend people's attitudes, behaviors, and educational demands. For older adults in both healthy and chronic conditions, PA can best be understood by HBM. ⁽¹⁹⁻²⁰⁾

METHODOLOGY

descriptive study was conducted at a geriatric care home to understand older adult behavior related to physical activity. The study included a random sample of 70 older adults who were selected from geriatric care home in Baghdad City. The study instrument includes participants' sociodemographic sheet of age, gender, and marital status, body mass index (BMI), and level of education. It also includes the Physical Activity Scale for the Elderly (PASE) that measures older adults' physical activity level developed by Washburn and colleagues. ⁽²¹⁾ The response to this part is on four levels: (1) never (go to another question), (2) rarely (1-2 days/week), (3) sometimes (3-4 days/week), and (4) frequently (5-7 days/week) in the past 7 days. While the second part includes household activities (3 items). The answer to these items included a dichotomous answer (yes or no). The final total PASE is obtained by multiplying participation in activities by the finite element weights. Finally, subjects were classified into three levels of appropriate physical activity (poor fair , good). The cut-

off-point for the PASE is calculated as poor for 1-133, fair for 134-267, and good for 268-400 . It also includes Health Beliefs about physical activity consists of 36 items which are divided into 6 subscales of Health Beliefs model (Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Barriers, Cues to Action, and Self-Efficacy). Data were analyzed using the statistical package for social science. The descriptive statistical measures of frequency and percentage were used. Mean and standard deviation were also used. The linear regression, independent-sample t-test, and one-way analysis of variance were also used.

RESULTS

The study showed that the majority of the participants in the study were aged between (60-65) years, the age mean is 67.7 ± 4.45 and most of them were males (65.7%), and the majority are singles (38.6%), with respect to the level of education, less than a half are elementary school graduates (45.7%), and more than two fifth are overweight (42.9%) (Table 1). The clear majority have a fair physical activity level (n = 65; 92.9%) followed by a small proportion who enjoy a good physical activity level (n = 5; 7.1%) (Table 2).

Table 1: Participants' sociodemographic characteristics (N = 70)

Variables		
	F	%
Age		
60-65	27	38.6
66-70	26	37.1
71-77	17	24.3
Mean (Standard Deviation): 67.7 ± 4.45		
Gender		
Male	46	65.7
Female	24	34.3
Marital Status		
Single	27	38.6
Married	3	4.3
Widow/Widower	10	14.3

Table 4: Difference in physical activity between gender group

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
PA	Equal variances assumed	.310	.580	2.079	68	.041	22.10507	10.63195	.88935	43.32080	
	Equal variances not assumed			2.207	55.054	.032	22.10507	10.01648	2.03204	42.17810	

Table 5: Difference in physical activity among body mass index groups

ANOVA					
Physical Activity					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7796.541	4	1949.135	1.046	.391
Within Groups	121138.730	65	1863.673		
Total	128935.271	69			

Table 6: Difference in physical activity among marital status groups

ANOVA					
Physical Activity					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11712.471	4	2928.118	1.624	.179
Within Groups	117222.800	65	1803.428		
Total	128935.271	69			

Divorced	15	21.4
Separated	15	21.4
Level of education		
Unable to read and write	10	14.3
Read and write	4	5.7
Elementary school	32	45.7
Middle school	10	14.3
High school	10	14.3
Diploma	2	2.9
Bachelor's degree	2	2.9
BMI Category		
Underweight	4	5.7
Within Normal	22	31.4
Overweight	30	42.9
Obesity Class I	12	17.1
Obesity Class II	2	2.9

Table 2: Participants' physical activity level (N = 70)

Physical Activity Level	F	%
Fair	65	92.9
Good	5	7.1

Table 3: Association between study variables and physical activity level

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Age	-2.170	1.162	-.223	-1.868	.067
BMI	-1.002	1.459	-.091	-.687	.495
Susceptibility	-.935	3.383	-.139	-.276	.783
Severity	-.370	2.387	-.075	-.155	.877
Benefits	-2.087	2.347	-.225	-.889	.377
Barriers	-2.810	2.069	-.319	-1.358	.179
Cues to Action	-12.837	4.423	-.506	-2.902	.005
Self-Efficacy	-.730	2.705	-.057	-.270	.788

a. Dependent Variable: Physical Activity

Table 7: Difference in physical activity among level of education groups

ANOVA					
Physical Activity					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14980.446	6	2496.741	1.380	.236
Within Groups	113954.825	63	1808.807		
Total	128935.271	69			

DISCUSSION

The findings ,the majority have a fair physical activity level followed by a small proportion who enjoy a good physical activity level . Physical activity that promotes health appears to decrease throughout a lifetime, but there is a wide range of variation across individuals. Despite the fact that some individuals engage in appropriate levels of physical activity, others develop sedentary lifestyles⁽²²⁾. Despite the numerous benefits of PA on health and quality of life, a large number of older adults are sedentary or physically inactive. ⁽²³⁾ This finding could reflect that the neighbourhoods in which participants live lack the facilities for

physical activity. Furthermore, this finding reflects participants' poor awareness of engaging in physical activity behavior. Moreover, this finding indicates the absent role of healthcare professionals in establishing health promotion efforts that aim to encourage people; particularly older adults, to engage in physical activity.

There is a statistically significant association between cues to action and physical activity level (p -value = 0.005). This finding could be explained as for participants who enjoy good activity level, the health letters offered by media that emphasize the value of the physical activity could motivate them to engage in PA. This result is consistent with a study that found the cues to action were associated with the level of PA ($p < 0.01$).⁽²⁴⁾

There is a statistically significant difference in physical activity between gender groups (p -value = 0.041). Further descriptive statistics demonstrate that the physical activity level was greater among male participants compared to female participants. This finding may reflect the role of social norms that limit female PA. The results of the study were similar to a study by Booth and colleagues⁽²⁵⁾ in which males were shown to be more physically active than females.

There was no statistically significant difference in PA levels among body mass index groups. This finding could be explained by the fact that these participants, irrespective of their body weight status, have comparable levels of physical activity. That is to say, participants who are overweight or obese do not consider weight status as a factor that could threaten their health. The result is similar to the study by Shiraly et al.⁽²⁶⁾

There was no statistically significant difference in physical activity levels among marital status groups. This finding could be attributed to the reality that the largest proportion of participants are single, which make them lack the social support for physical activity. This result is similar to many studies⁽²⁷⁻²⁸⁾ And disagrees with a study by King and colleagues⁽²⁹⁾ that reported there is a link between marital status and physical activity.

There is no statistically significant difference in physical activity among the various levels of education. This result disagrees with Sadrollahi et al.⁽³⁰⁾ And Shaw⁽³¹⁾ who found that individuals' healthy behaviors are influenced by their educational background. This result could be interpreted by the fact that most of the participants have low educational levels, which implies that they lack the health awareness that can propel them to engage in physical activity behavior.

CONCLUSION

Researchers concluded that using the HBM to understand PA behavior in general provides a better understanding of how such beliefs can be influenced to improve older adults' physical activity engagement. The best concept of the health belief model to understand physical activity behavior was cues to action.

Recommendations: The researchers recommended designing illustrated indicative programs of physical activity that take into account individual differences between older adults and those who suffer from diseases or disabilities and programs that promote health beliefs and correct misconceptions about physical activity among older adults.

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