Impact of Physical Activity Program upon Elderly Quality of Life at Al-Amara City/Iraq

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Introduction

Objectives: The study aimed to evaluate the effectiveness of the physical activities program for the elderly among the quality of life; to determine association between elderly life qualities with their socio-demographic data.

Method: A quasi experimental design was carried out from 14th January 2019, to 20th September 2019 in the city of Al-Amara. A random sample was used to select 6 out of 14 primary health care centers. A purposive sample was used through inclusion and exclusion criteria include (50) elderly visiting health centers for therapeutic or preventive reasons. The collected sample was divided equally (25) into two groups of men and women (study and control group) while the first group underwent an activity program. The data of the study were collected through the interview method and using the designed tool which contained (3) parts.

Results: The findings of the study show that the two groups have a low level of activity and quality of life for the elderly before the program is conducted, while after the implementation of the program, the study group showed a significant improvement in physical activities at a high level score (2.36± 0.209), while the control group stay in same level score (1.37± 0.183). Quality of life demonstrated very good level score for post–test in the study group (3.91± 0.436) more than control group (1.73± 0.203).

Key words: *Elderly, Quality of Life, Physical Activity, Primary Health Care.*

Introduction

Elderly is a fragile and vulnerable segment of population need especial care due to the multiple problems which leads to a decline in the body's physical capacity and physiological system [1] . World Health Organization (WHO) mentions that there are more than six hundred million elderly people worldwide; it is estimated that this rate will double by 2025 and 2 billion by 2050 [2] . The annual statistical report issued by the Iraqi Ministry of Health showed that the proportion of elderly people over 60 years of age is expected to increase 3.4% in 2010 to 5% in 2015, and the increase is expected to reach 7.2% in 2050 [3] .

The views of most gerontologists agree that the ages of the elderly are 65 years and older. This age is the length of time that people are approaching the end of their occupation, work and the preparation of retirement plans. In addition, they work to end their responsibilities, duties and tasks that they performed during adulthood and thus they become inactive [4] . Global reports indicate that physical inactivity is continuous increasing. The prevalence of physical inactivity is estimated at 21.4% worldwide. In England, nearly 39% of the elderly performed the recommended levels of physical activity, while in the United States about 23% were considered physically inactive and therefore had many health problems[5]. Physical activity (PA) is "Any bodily movement produced by skeletal muscles those results in energy expenditure". All activities carried out by the elderly that is includes walking, leisure-time activity, regular exercise, housework, and work-related activity can offer many benefits through physical, psychological and social aspect in the elderly life qualities [6] .

Generally, to achieve a better healthy life, it is preferable for the elderly to engage in physical activity on an ongoing basis. Based on this principle, most health education programs are available in most countries to

disseminate new ideas and knowledge, which in turn promotes health and prevents risky behaviors [7] . Finally, it is necessary to integrate physical activity into the lives of older people as a way to improve their QoL. Participation in lifestyle activities impacts upon physical, social, psychological, and environmental well-being for individuals all of these elements lead to for integration of life quality [8]

Methodology

A semi-experimental design was used during the period 14th January 2019, to 20th September 2019, Simple random sample is used by the researcher to select (6) primary health care centers (PHCs) at Al-Amara city. A purposive sample (50) elderly visiting PHCs for therapeutic or preventive reasons, these elderly were collected from the centers. The sample comprised of (50) elderly people who agreed to participate in the program were divided into two groups, each group of study and control consisted of (25) elderly, the first group was involved in the activity program, while the second group was not exposed to the program. Data were collected through interview technique based on inclusion criteria for both sexes including: elderly people at an early age 65-74 year, mobile, independent, and able to communicate with others. The exclusion criteria included elderly with chronic diseases (asthma, diabetes, non-controlling blood pressure, and congestive heart failure).

The program includes six time-consuming lectures (45-60 minutes) to educate the elderly about physical activities and conduct pre- and post-program tests to assess effectiveness on quality of life. The questionnaire was used as a tool to collect data through the interview technique used and observation the practices of the elderly. The first part contains demographic characteristics, while the second part relates to the PA tool which includes (24) elements divided into four parts includes leisure time, household activities, balance, and flexibility exercises. The third part was used to measure the QoL of the elderly, through constructed questionnaire which contains (31) items, the first domain include three items about overall QoL and overall health status, while the remaining 28 questions were divided into five dimensions of health including: physical, psychological and emotional, social relationships, environment, and spiritual health. Summing the total scores for each certain domain manifested the elderly perception about their QoL. These items was rated according to the Likert scale and the scoring for these questions was range from (1 to 5), the higher scores corresponding to a better QoL classified as (5), while low scores classified as (1). The allocated time for the questionnaire was (20-30) minutes to complete. This scale was evaluated according to five levels as following: Low level = (1-1.80): 1; Moderate (1.81- 2.60): 2; Good level (2.61- 3.40): 3; Very good (2.41- 4.20): 4; Excellent (4.21- 5): 5. The Physical Activity Tool was rated according to Likert scale (Always; sometimes and never), and scoring as (3) for always, (2) sometimes, and (1) never, respectively. This scale was evaluated according to four levels: Low level =(1.00-1.66): 1; Moderate (1.67- 2.33): 2, and High (2.34- 3.00): 3. The time practice of PA checklist for each elderly took about (120-180) minutes. The validity and reliability of the questionnaire is determined by a panel of (16) experts and degree of Alpha Cronbach for QoL and PA for (31) items (r= 0.88) and (24) items (r= 0.86) respectively.

Our study data were analyzed by using the Statistical Package for Social Sciences (SPSS) version 20, and through applying two statistical approaches (1) descriptive by: percentage, frequency, standard deviation and arithmetic mean (2) inferential analysis through (t-test, and chi-square test) to determine relationship between the study and control groups. The results were affirmed as significant at $P \leq 0.05$ and no significant at $P > 0.05$.

Study Finding

The results of the data analysis were consistent with the objectives of the study. The presentation below shows the important findings of the study.

Table (1) Distribution of the study and control group according (Physical Activities) with comparisons significant

Main Domains Related To Physical Activities	"Control"					"Study"					C.S. (*) Pre X Pre (C X S)	C.S. (*) Post X Post (C X S)
	Pre		Post		C.S. (*)	Pre		Post		C.S.(*)		
	M.S	S.D.	M.S	S.D.		M.S	S.D.	M.S	S.D.			
Leisure time activities	1.73	0.465	1.69	0.410	P=0.442 NS	1.71	0.484	2.46	0.180	P=0.000 HS	P=0.865 NS	P=0.000
Household activities	1.78	0.418	1.74	0.423	P=0.610 NS	1.68	0.606	2.46	0.189	0.000	P=0.517 NS	0.000
Balance exercise	1.00	0.000	1.00	0.000	--- NS	1.00	0.000	2.38	0.169	0.000	--- NS	0.000
Flexibility exercise	1.00	0.000	1.00	0.000	P=1.000 NS	1.01	0.040	2.42	0.226	0.000 HS	P=0.327 NS	P=0.000 HS

C.S. = comparison significant, S= significant, NS= no significant, HS= High significant.

Table (2): Distribution of the studied groups according to (Quality of Life) with their comparisons significant

Main Domains Related To QoL	Control					Study					C.S. (*) Pre X Pre (C X S)	C.S. (*) Post X Post (C X S)
	Pre		Post		C.S. (*)	Pre		Post		C.S.(*)		
	M.S	S.D.	M.S	S.D.		M.S	S.D.	M.S	S.D.			
Life Overall	1.99	0.414	2.11	0.416	P=0.131 NS	1.69	0.480	3.85	0.510	P=0.000 HS	P=0.025 S	0.000 HS
The Physical Health facet	1.94	0.691	2.15	0.585	P=0.036 S	1.70	0.539	4.08	0.532	0.000 HS	0.184 NS	0.000
The Emotional and Psychological facet	1.54	0.354	1.64	0.307	P=0.057 NS	1.40	0.330	3.83	0.535	0.001 HS	0.155 NS	0.001
The Social Relationships facet	1.71	0.689	2.03	0.569	P=0.012 S	1.44	0.459	4.03	0.552	0.002 HS	0.114 NS	0.002
The Environment face	1.56	0.311	1.63	0.237	P=0.229 NS	1.40	0.248	3.83	0.477	0.000 HS	0.057 NS	0.000
The spiritual facet	1.64	0.376	1.74	0.453	P=0.246 NS	1.45	0.354	3.91	0.590	P=0.000 HS	P=0.072 NS	0.000

C.S. = comparison significant, S= significant, NS= no significant, HS= High significant.

Table (3): Overall Assessment among the Pretest and Posttest Periods for the elderly (PA and QoL) for Study and Control Group (1.00– 1.66): Low; (1.67 – 2.33): Moderate, and (2.34 – 3.00): High. L: Low, M: Moderate, H: High.

Variables	Overall Assessment		Study		Control	
			Freq.	%	Freq.	%
Elderly Physical Activity	Low: (1.00 – 1.66)	Pre-test	18	72.0	19	76.0
	Moderate: (1.67 – 2.33)		7	28.0	6	24.0
	High: (2.34 – 3.00)		0	0.00	0	0.00
	Total		25	100.0	25	100.0
	$\pm$S.D$\bar{x}$		1.39$\pm$0.251		1.37$\pm$0.197	
	Low	Post-test	0	0.00	20	80.0
	Moderate		3	12.0	5	20.0
	High		22	88.0	0	0.00
	Total		25	100.0	25	100.0
	$\pm$S.D$\bar{x}$		2.36$\pm$ 0.209		1.37$\pm$ 0.183	
Elderly Quality of Life	Low(1.00 – 1.80)	Pre-test	20	80.0	19	76.0
	Moderate(1.81 – 2.60)		5	20.0	6	24.0
	Good(2.61 – 3.40)		0	0.00	0	0.00
	Very Good(3.41-4.20)		0	0.00	0	0.00
	Excellent(4.21-5.00)		0	0.00	0	0.00
	Total		25	100.0	25	100.0
	$\pm$S.D$\bar{x}$		1.58 $\pm$0.241		1.58$\pm$0.333	

Freq.=Frequencies, %=Percentages,$\bar{x}$ $\mp$ S. D.$\bar{x}$ $\mp$ S. D.=Arithmetic Mean ($\bar{x}$)$\bar{x}$)and Std. Dev. (S.D.).

Table (4): Association between the elderly Quality of life with their Socio-demographic Variables for study group

Elderly Variables	Pre- Test				Post- Test			
	Chi-Square	d.f	P value	Sig.	Chi-Square	d.f	P	Sig.
Age	1.347	3	0.718	NS	101.387	3	0.000	S
Gender	8.692	3	0.034	NS	15.86	3	0.001	S
Occupational Status	30.128	9	0.000	S	35.353	9	0.000	S
Marital status	7.203	6	0.302	NS	69.249	6	0.000	S
Education levels	47.615	15	0.000	S	48.338	15	0.000	S
Monthly Income	20.514	6	0.002	S	19.955	6	0.003	S

Sig.= Significant, S= Significant at(P< 0.05), NS= Non Significant at (P > 0.05), d.f = degree of freedom, P = probability value.

Regarding association, the table showed that there was no significant relationship between elderly QoL with age, sex and presence of spouse or not, except (profession, education, monthly income) show significant differences in pre-test ($P < 0.05$). While, in the post test the results of the table above shows that there is a significant relationship between quality of life of the elderly with all demographic variables, when analyzed by chi-square.

Discussion

In our study, shows that there are highly significant differences (P=0.000) with very good levels at study group for all domains QoL which includes: life overall, physical health, emotional and psychological, social, the environment, and spiritual facet. In agreement with this study Pucci et al., [13] found positive correlations between health perceived by elderly and the time practicing physical activity. Also, Ludendorff et al.; Naji and Abdulridha [14 ,15] confirm the elderly who are physically and mentally active demonstrate and can perceive better performance of activities, better health and, therefore, better quality of life.

The results revealed that there is no significant relationship between the QoL of the elderly with their social and demographic data in the pre-test of the study group, whereas in the post-test period there was a significant association about these variables in ($P <0.05$). This findings were supported by Hamer et al., [16] who stated that maintaining a lifestyle physically active by the elderly at an early age (65 and above) leads to better health, longevity and healthy ageing in comparison with those remaining inactive lifestyle. Ramocha et al., [17] in study conducted in South Africa that show there are significant association between elderly QoL and their gender at ($P= 0.001$) after participation in physical activity program. In agreement of our study, Ramires et al., [18] in their study, they mentioned that retirement status and lower monthly income for seniors may reduce transportation and work-related activities, which may also be replaced by many activities such as leisure time, household…etc., thus are important factors in improving the QoL of older people. In regarding to marital status and education level, the result shows a significant association with QoL in the post-test at very good level for life quality. This result may come from spousal support and completion of school education which plays an important role to ensure that older persons remain physically active through internal / external activities, including gardening, shopping, walking, sexual relationship and religious activities, which improve their satisfaction with life.

Conclusion

The study showed that elderly physical activities and quality of life were low at the beginning of the program. However, these variables in the study group increased significantly in the post-test at a high level as a result of participation in the physical activity program. Regarding the relationship between quality of life and demographic data, the result showed that there was no significant relationship in the pre-test except (educational level, occupation and financial situation), but there was a high statistical significance between gender, age, occupation, marital status, education and monthly income with the quality of life of the elderly.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing and all experiments were carried out in accordance with approved guidelines.

References

1. Rugbeer N , Ramklass S , Mckune A , van Heerden J. The effect of group exercise frequency on health related quality of life in institutionalized elderly. The Pan African Medical Journal, 2017; 26 (35): 2-14.
2. World Health Organization: World Report on Ageing and Health, Geneva 27, Switzerland, 2015; 260.
3. Republic of Iraq Ministry of Health. National Health Policy for All Iraqi Citizens, Report 2014-2023, 2014; 1-31.
4. Unal H , Yildirim D , İrez B G.: A study in terms of social marketing approach: the effects of physical activity on quality of life in elderly. Journal of Physical Education and Sport Sciences, 2016;8(1): 83-92.

5. Reshidi FS : Level of physical activity of physicians among residency training program at Prince Sultan Military Medical City, International journal of health sciences, 2016;10(1): 39.

6. Notthoff N , Reisch P , Gerstorf D.: Individual Characteristics and Physical Activity in Older Adults: A Systematic Review. Gerontology, 2017; 63(5): 443-459.

7. Rana AM , Wahlin Å , Lundborg C , Kabir Z.: Impact of health education on health-related quality of life among elderly persons: results from a community-based intervention study in rural Bangladesh. Health promotion international, 2018;24(1): 36-45.

8. Pavlova I , Vynogradskyi B , Borek Z , Borek I.: Life quality and physical activity of Ukrainian residents. Journal of Physical Education and Sport, 2015;15(4): 809-815.

9. Heydarnejad S , Dehkordi AH.: The effect of an exercise program on the health-quality of life in older adults. Dan Med Bull, 2016;57(4): 113-7.

10. Andrade JMO, Rios LR, Teixeira LS, Vieira FS, Mendes DC, Vieira MA, et al. Influence of socioeconomic factors on the quality of life of elderly hypertensive individuals. Ciênc Saúde Coletiva. 2014;19(8):3497-504.

11. Ethisan P , Chapman R, Kumar R , Somrogthong R.: Effectiveness of group-mediated lifestyle physical activity program for health benefit in physical activity among elderly people at rural thailand. Journal of Ayub Medical College Abbottabad, 2015; 27 (2): 292-295.

12. Mudey A , Ambekar S , Goyal RC , Agarekar S , Wagh VV. Assessment of quality of life among rural and urban elderly population of Wardha District, Maharashtra, India. Studies on Ethno-Medicine, 2011;5(2): 89-93.

13. Pucci GC, Rech CR, Fermino RC, Reis RS. Association between physical activity and quality of life in adults. Rev Saúde Pública. 2012; 46(1): 166-79.

14. Ludendorff Queiroz L , Silveira de Brito C , Gomes de Almeida F , Martins Pereira N , de Almeida Silva H , Pena Porto J , Marques Ribas R. Quality of life and impact of physical activity time in the health of elderly. Revista da Faculdade de Ciências Médicas de Sorocaba, 2016; 18(1): 210-224.

15. Naji AB, Abdulridha MA. Impact of Fall Prevention Program upon Elderly behavior related Knowledge at Governmental Elderly Care Homes in Baghdad City. Journal of Nursing and Health Science, 2015; 4(5): 115-121.

16. Hamer M , Lavoie K , Bacon S : Taking up physical activity in later life and healthy ageing: the English longitudinal study of ageing. Br J Sports Med, 2014; 48(3): 239-243.

17. Ramocha LM , Louw QA , Tshabalala M D.: Quality of life and physical activity among older adults living in institutions compared to the community. The South African journal of physiotherapy, 2017; 73(1): 1-6.

18. Ramires VV , Wehrmeister FC , Böhm AW , Galliano L , Ekelund U , Brage S , da Silva I.: Physical activity levels objectively measured among older adults: a population-based study in a Southern city of Brazil. International Journal of Behavioral Nutrition and Physical Activity, 2017;14(1): 1-9.