

Impact of Educational Program on Self-Care Among Elderly with Chronic Illnesses at Geriatric Homes

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ABSTRACT

Objectives: To determine the Impact of the Education Program on Self-Care by Older Adults with Chronic Diseases.

Background: programs aimed at promoting self-care have become a key strategy in empowering older adults to take control of their health. These programs are typically designed to provide individuals with the knowledge and skills necessary to manage their chronic diseases more effectively.

Methods: quasi- experimental design, pre-tests and post-tests, with participants of non-probability Purposive sample consists of (30) elderly's, these subject one group (study). The study is carried out at geriatric homes in Baghdad City.

Results: The educational program significantly improved the elderly's self-care practice behaviors. The overall scores for self-care practice behavior increased significantly from pretest ($M = 58.53$, $SD = 5.758$) to posttest I ($M = 79.60$, $SD = 7.356$) and posttest II ($M = 78.83$, $SD = 6.983$), with a highly significant effect observed by Greenhouse-Geisser correction ($F = 139.343$, $p = .000$, Partial Eta Squared = .828). This indicates a strong and significant impact of the education program on enhancing elderly's self-care practices behaviors.

Conclusions: the effectiveness of education programs on self-care for older adults in geriatric homes is crucial for improving the health and well-being of this vulnerable population.

Keywords: Impact, Self-Care, Elderly's, Chronic Illness

1. INTRODUCTION

Self-care is recognized as a health resource in later life since it helps the elderly stay well and live in their homes for as long as possible. Self-care is influenced by external, interpersonal, and internal factors. For example, self-care is negatively impacted by advanced age, but self-care is positively connected with the functional abilities to carry out daily tasks. Therefore, it is imperative to address the issue of geriatric self-care. Self-care is a subjective practice that people adopt to manage their daily activities and is essential to both wellbeing and illness treatment (1).

Self-care practices are taught, and the person engages in "self-care activities" to preserve their life, health, and well-being. Self-care has developed into a holistic idea derived from a wide range of viewpoints. The World Health Organization (WHO) has developed a broad definition of self-care in tandem with these advancements, encompassing "what people do for oneself to establish and maintain health, prevent and deal with illness (2).

The majority of elders have a positive outlook on life, which should be emphasized. Elderly people can engage in or carry out a variety of activities that foster a sense of independence. Aging is not an illness; it is a natural process. Changes in the structure and function of the body are normal. Due to these changes, the elderly has unique demands. They are more susceptible to injuries, chronic diseases, and illnesses. This does not imply that all elderly people have physical and mental impairments. Many people still lead contented and healthy lives in their own houses. Less than 10% of senior citizens reside in nursing homes. The elderly should be educated about their own health care needs, especially the possibility of drug interactions if they take numerous medications, in order to promote and preserve health and prevent disease. They also require enough activity and a healthy diet. Health maintenance programs that cover a variety of health services, wellness programs, health screenings, outreach programs, social assistance programs, and information about community volunteer

opportunities are among the programs for healthy older adults (3).

Additionally, living in a very residential care facility was linked to a limited range of activities and a high level of inactivity, which led to a decline in residents' self-care practices. Aging is the gradual or sequential change that causes an organism to become more susceptible to weariness, disease, and death. There are several facets to aging. As a result, there are numerous theories that could each shed light on one or more facets of aging. Human aging is the result of a person's gradual accumulation of changes over time, which might include physical, psychological, and social changes. Recent theories have linked the causes of aging to either the concept of damage, which holds that the accumulation of damage, including DNA oxidation, may lead to the failure of biological systems, or the concept of programmed aging, which holds that issues with internal processes, such as DNA methylation, which can result from epigenetic maintenance, are linked to aging (4).

The current study's objectives were to evaluate the degree of self-care among senior citizens residing in nursing homes and to determine how self-care levels varied depending on sociodemographic and clinical factors. Physical activity may now be precisely measured in clinical and research settings thanks to modern technology. According to scientific data, the average level of physical activity (recreational, occupational, etc.) in the general population today is insufficient to have a positive impact on health. Additionally, increasing physical activity levels should be a component of the rehabilitation process following an injury, acute sickness, or hospitalization. Promoting regular physical exercise need to be a top priority for both rehabilitation and public health (5).

As people age more generally, chronic diseases are becoming more common in the elderly. Elderly patients' lives and physical health are gravely threatened by chronic diseases, which have a high rate of impairment and death. Two essential qualities of registered nurses that are pertinent to self-management support are the delivery of person-centered care and the integration of cross-organization/cross-setting care. Additionally, the Royal College of Nursing (2020) determined the essential elements of the nurse's function in encouraging assistance with self-management. Making Every Contact Count, information signposting, encouraging healthy choices, and education to facilitate symptom and self-management are a few of these (6).

Even if the value of health education in enhancing the community's ability to manage chronic illnesses in the elderly is becoming more widely recognized, its actual use in reality is still insufficient. Furthermore, it is simple to overlook senior mental health education in practice (7).

It is challenging to provide focused health education services since the team primarily consists of community workers who lack professional medical understanding when health education is conducted in our community. Given the nature of these conflicts, the nurse's advocacy role is essential in promoting self-care. The qualities of nurse advocacy include respecting patient autonomy, speaking up for patients, and promoting social justice in healthcare. Advocacy can be a crucial nursing function in promoting patient wellness. One of the biggest problems of the twenty-first century is the aging of the global population. The functional ability of humans is challenged by longer life expectancies, which are also linked to higher rates of chronic no communicable disorders (8)..

METHOD

A quasi-experimental design to assess elderly about self-care with chronic diseases at geriatric homes in Baghdad City.

Quasi-experiments are studies that aim to evaluate interventions but that do not use randomization. Similar to randomized trials, quasi-experiments aim to demonstrate causality between an intervention and an outcome. Quasi-experimental studies can use both pre intervention and post intervention measurements. The present study was conducted in Geriatric Home in Baghdad. The facility consists of two floors: a ground floor and an upper second floor. The women's section has 10 rooms, accommodating 20 beds. The men's section has 40 rooms, some designed for one person and others for two. The Al-Sulaikh geriatric care home, which is located in the Al-Sulaikh district of Al Adhamiya, north of Baghdad City. The Geriatric Home has (64) elderly residents. Of those (51) were over the age of (65) years. (30) of those were included in the study.

A non-probability (purposive sample) of (30) elderly who were living in Baghdad Geriatric Home. A pilot study is carried out with participant of (10) elderly from Geriatric Homes in Baghdad city for the period 10th to 15th of April, 2024. The sample of the pilot study was excluded from the main study sample.

2. RESULTS

The findings in Table (1) presented the distribution of the socio-demographic characteristics of older adults in the study. The age distribution shows that the highest percentage of participants (40%) is between 65 and 69 years old, with a mean age of 72 years and a standard deviation of 5 years. Regarding sex, 63.3% of the participants are male, and 36.7% are female.

Marital status reveals that a significant portion of the participants are divorced (40%), followed by widowed/widower individuals (23.3%), while only 6.7% are unmarried.

Educational levels are varied, with the largest groups having completed primary or intermediate school (30% each), while a minority hold a bachelor's degree or higher (20%).

In terms of income sources, 60% of participants rely on a monthly pension, whereas 16.7% have no income source. Finally, most participants perceive their monthly income as insufficient (70%), with only 13.3% considering it sufficient.

Table 1: Distribution of Older Adults according to their Socio-demographic Characteristics

List	Characteristics	F	%
1	Age (year) M\pmSD = 72 \pm 5	65 – 69	12
		70 – 74	7
		75 – 79	7
		80 – 84	4
		Total	30
2	Sex	Male	19
		Female	11
		Total	30
3	Marital status	Unmarried	2
		Married	6
		Separated	3
		Divorced	12
		Widowed/er	7
		Total	30
4	Level of education	Read & write	5
		Primary school	9
		Intermediate school	9
		Secondary school	1
		Bachelor or higher	6
		Total	30

List	Characteristics	F	%
5	Source income	No income source	5
		Monthly pension	18
		Social care	7
		Total	30
6	Perceived monthly income	Insufficient	21
		Barely sufficient	5

	Sufficient	4	13.3
	Total	30	100

No: Number, f: Frequency, %: Percentage, M: Mean, SD, Standard deviation

The analysis in Table (2) illustrates the assessment of chronic illnesses among older adults before and after the educational program across three time points: pretest, posttest I, and posttest II. The data shows that the prevalence of cardiovascular disease remained constant at 23.3% throughout the study.

A slight improvement is observed in the management of diabetes mellitus, with a reduction from 40% at pretest to 33.3% in both posttests.

Musculoskeletal disease and pulmonary/bronchial disease also showed no change, maintaining prevalence rates of 26.7% and 16.7%, respectively, across all time points.

Hypertension, the most prevalent condition, affected 63.3% of participants consistently. Notably, all participants were free from hematological disease, hepatomegaly, cancer, epilepsy, and hypothyroidism throughout the study.

There were no changes in the prevalence of renal disease (6.7%) and colon disease (13.3%) across the three assessments.

A slight increase in gastrointestinal disease was observed, from 20% at pretest to 23.3% in the posttests.

Table 2: Assessment of Chronic Illnesses among Older Adults Pre, and Post Educational Program

List	Chronic Illness	Ass.	Pretest		Posttest I		Posttest II	
			F	%	F	%	f	%
1	Cardiovascular disease	No	23	76.7	23	76.7	23	76.7
		Yes	7	23.3	7	23.3	7	23.3
2	Diabetes mellitus	No	18	60	20	66.7	20	66.7
		Yes	12	40	10	33.3	10	33.3
3	Musculoskeletal disease	No	22	73.3	22	73.3	22	73.3
		Yes	8	26.7	8	26.7	8	26.7
4	Pulmonary and bronchial disease	No	25	83.3	25	83.3	25	83.3
		Yes	5	16.7	5	16.7	5	16.7
5	Hypertension	No	11	36.7	11	36.7	11	36.7
		Yes	19	63.3	19	63.3	19	63.3
6	Gastrointestinal disease	No	24	80	23	76.7	23	76.7
		Yes	6	20	7	23.3	7	23.3
7	Hematological disease	No	30	100	30	100	30	100
		Yes	0	0	0	0	0	0
8	Hepatomegaly	No	30	100	30	100	30	100
		Yes	0	0	0	0	0	0
9	Renal disease	No	28	93.3	28	93.3	28	93.3
		Yes	2	6.7	2	6.7	2	6.7
10	Colon disease	No	26	86.7	26	86.7	26	86.7
		Yes	4	13.3	4	13.3	4	13.3

11	Cancer	No	30	100	30	100	30	100
		Yes	0	0	0	0	0	0
12	Epilepsy	No	30	100	30	100	30	100
		Yes	0	0	0	0	0	0
13	Hypothyroidism	No	30	100	30	100	30	100
		Yes	0	0	0	0	0	0

No: Number, Ass: Assessment, f: Frequency, %: Percentage

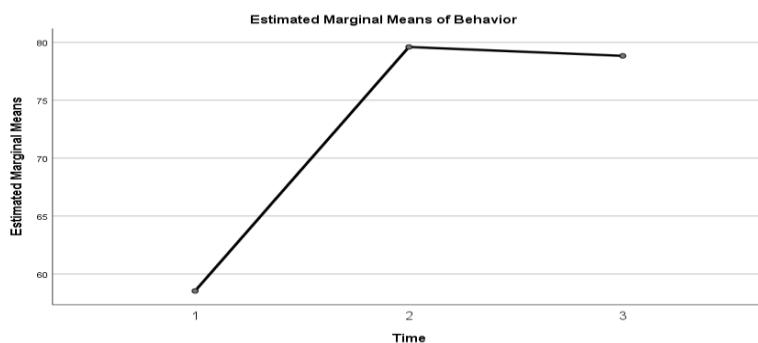
Table 3: Impact of Educational Program on Overall Elderly's Practices Self-Care Behaviors with Chronic Illnesses

Descriptive		Within-Subjects Effect							
Self-care Practice	Mean (S.D)	Source	Type III Sum of Squares	Df	Mean Square	F	P-value	Sig.	Partial Eta Squared
Pretest	58.53 (5.758)	Time	Sphericity Assumed	8564.822	2	4282.411	139.343	.000	H.S
			Greenhouse-Geisser	8564.822	1.016	8429.109	139.343	.000	H.S
			Huynh-Feldt	8564.822	1.018	8414.738	139.343	.000	H.S
			Lower-bound	8564.822	1.000	8564.822	139.343	.000	H.S
	79.60 (7.356)	Error(Time)	Sphericity Assumed	1782.511	58	30.733			
			Greenhouse-Geisser	1782.511	29.467	60.492			
			Huynh-Feldt	1782.511	29.517	60.389			
			Lower-bound	1782.511	29.000	61.466			

S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant

Elderly's Practices	Descriptive		Within-Subjects Effect (Greenhouse-Geisser)						
	Time	Mean (SD)	Type III Sum of Squares	Df	Mean Square	F	P-value	Sig.	Partial Eta Squared
Health Environment	Pretest	6.97(1.351)	205.400	1.105	185.870	87.683	.000	H.S	.751
	Posttest I	10(1.484)							
	Posttest II	10.07(1.461)							
Personal Hygiene	Pretest	15.47(1.655)	497.089	1.094	454.366	160.928	.000	H.S	.847
	Posttest I	20.53(2.177)							
	Posttest II	20.37(2.141)							
Nutrition	Pretest	7.67(1.936)	88.200	1.000	88.200	27.662	.000	H.S	.488
	Posttest I	9.77(.858)							
	Posttest II	9.77(.858)							
Rest and Sleep	Pretest	7.00(1.145)	17.489	1.038	16.854	10.750	.002	H.S	.270
	Posttest I	7.97(1.189)							
	Posttest II	7.90(1.213)							
Physical Exercise	Pretest	6.60(1.276)	220.156	1.065	206.787	88.866	.000	H.S	.754
	Posttest I	9.97(1.520)							
	Posttest II	9.87(1.432)							
Elimination	Pretest	6.33(1.184)	67.289	1.039	64.766	41.755	.000	H.S	.590
	Posttest I	8.20(.714)							
	Posttest II	8.13(.730)							
Physical Well-being	Pretest	3.87(.973)	53.422	1.074	49.735	64.792	.000	H.S	.691
	Posttest I	5.53(.629)							
	Posttest II								

		5.47(.62 9)						
Psychological, Social Well- being, and Emotional Support	Pretest Posttest I Posttest II	4.23(1.0 06) 7.37(1.5 42) 7.27(1.4 84)	190.289	1.076	176.771	86.616	.000 H.S	.749

Table 4: Impact of Educational Program on Sub-domains of Elderly's Practices Self-Care Behaviors

3. DISCUSSION

Distribution of Age. With a mean age of 72 years and a standard deviation of 5 years, 40% of participants are between the ages of 65 and 69. This implies that people in the early to mid-stages of older adulthood were the study's primary focus. **Gender:** Men make up the majority of participants (63.3%), while women make up 36.7%. Given that various chronic illnesses have varying prevalence rates among men and women, this gender distribution may have an impact on the health problems found in the study. A previous study by Brian Keogh, found in their study that, Self- management support for older adults with chronic illness: implications for nursing practice. The majority of the participants were women (62.3%), with an average age of 72.6 ± 7.49 (range of 60 to 99) years. Most of the participants were married (78.9%), and 91 participants (83.3%) lived with their families. In terms of religious beliefs, 45.9% were Buddhists, and most participants (53.7%) had a high school education or higher. More than 90% of the participants did not have a full-time job. (9).

Educational Levels: Participants come from a variety of educational backgrounds. Twenty percent have a bachelor's degree or beyond, and a sizable portion (30 percent each) have finished elementary or intermediate education. Health literacy can be influenced by educational attainment, which may then have an impact on one's capacity to manage long-term illnesses and make wise healthcare decisions. The results are agree with Frieswijk , In terms of gender, it is observed that 65 percent of the study sample is male and the remaining portion is female. As for educational attainment, the majority of them had a middle level of education, such as reading and writing, and had completed primary school. Additionally, the results showed that the largest percentage of the study sample were unemployed, not working, retired, and housewives (10-12).

The prevalence of cardiovascular disease stayed constant at 23.3% over all time intervals, indicating that the educational program had no effect on the condition's prevalence. There has been a minor improvement in the management of diabetes mellitus. In both posttests I and II, the prevalence dropped from 40% at the pretest to 33.3%, suggesting that the program may help control diabetes. The study result conducted with Bunker, and others, research the inhabitants' health profiles in geriatric homes. They discovered that the vast majority of them have a chronic illness. Additionally, Biswas, Nahed, and others discovered that their requirements could not be met by the economic position of the old (13).

Throughout the trial, the prevalence rates of pulmonary/bronchial disease and musculoskeletal disease were steady at 26.7% and 16.7%, respectively. This implies that these specific health problems were not impacted by the program. The most common ailment, hypertension, afflicted 63.3% of patients over an extended period of time. This suggests that its prevalence did not alter as a result of the program. Wang, JJ , in their research on the Self-Care Capability and Illness Representation

in Chronically Ill Older Adults. The Overwhelmed group is consisted of roughly equal proportions of patients with HF (36%), COPD (30%), and CKD (34%). The Stable group contained more patients with CKD (46%) than HF (26%) and COPD (28%). Approximately equal percentages of patients with HF (39%), CKD (33%), and COPD (28%), respectively, made up the Confident group (14).

Although only 30% of people attended routine exams at the pretest, the frequency of medical visits for chronic condition checkups significantly improved. Although it somewhat dropped to 86.7% at posttest II, this number increased to 100% at posttest I. Michael T. Lawless, we out a study on Instruments Measuring Community-Dwelling Older Adults' Self-Care and Self-Management of Chronic Conditions. The final Revie contained 107 publications from 103 studies. The review comprised a total of 40 measurement tools. Of the 40 instruments, 23 (57.5%) were disease-specific. Type 2 diabetes (20.0%), heart failure (7.5%), hypertension (7.5%), COPD (7.5%), and chronic kidney disease (CKD) (7.5%) were the most prevalent conditions (15).

A total of seventeen tools (42.5%) were non-disease-specific, which means that they were created to be used regardless of the diagnosis. To gauge self-care or self-management in individuals with multiple morbidities, eleven instruments (27.5%) were employed (16).

From 86.7% at pretest to 43.3% at posttest I, the belief that chronic health conditions hampered other facets of life improved, and this improvement persisted at posttest II. Riegel , this research that discovered, North America accounted for 44.8% of the trials, followed by Asia (28.0%), Europe (20.7%), Australia and New Zealand (3.5%), and South America (2.8%). This meta-analysis included 68.2% of trials with diabetes, 59.3% of trials with heart failure, 81.3% of trials with hypertension, 93.3% of trials with asthma, 80.0% of trials with coronary artery disease, and 100% of trials with chronic obstructive pulmonary disease, in comparison to the original scoping study (17).

The result is conducted done by Mahanaz , these results show that study participants in nursing home residents practiced self-care for chronic illnesses, with nearly 60% of the elderly following a low-salt and low-fat diet and 75% consuming milk, dairy products, meat, fresh vegetables, and fruits, respectively. The findings are consistent with the study's findings about the high percentage of health promotion behaviors among older adults in the food domain compared to other domains (18).

4. CONCLUSIONS

- 1- The study has confirmed that the educational program emerged as useful tool to improve the elderly self-care knowledge and practices.
- 2- The educational program significantly improved the elderly's self-care practice behaviors. The overall scores for self-care practice behavior increased significantly from pretest to posttest I and posttest II.
- 3- The management of diabetes seems to have benefited somewhat from the instructional program, but other chronic illnesses stayed the same.
- 4- Following the intervention, the proportion of participants who thought they could manage their chronic condition increased from 33.3% at the pretest to 76.7% at the posttest, indicating enhanced self-management abilities.

The effectiveness of these initiatives emphasizes how crucial it is to keep funding educational interventions for senior citizens. adults, emphasizing personalized care, practical learning, and psychosocial support to improve their overall well-being and self-care capabilities.

REFERENCES

- [1] Nguyen NT, Douglas C, Bonner A. Effectiveness of self-management programme in people with chronic kidney disease: A pragmatic randomized controlled trial. *Journal of advanced nursing*. 2019; 75 (3):652–64. <https://doi.org/10.1111/jan.13924> PMID: 30537153
- [2] Gabish AM, Mohammed WK. effectiveness of Health Education Program for Patient's Physical self-Concept and Actual Foot-Care behavior in People with Diabetes Mellitus toward Managing Feet at endocrinology and Diabetes Center in Al-Rusafa sector. *Indian Journal of Public Health*. 2018 Aug;9(8):1347. DOI. 10.5958/0976-5506.2018.00918.X
- [3] Iovino P, Lyons KS, De Maria M, Vellone E, Ausili D, Lee CS, et al. Patient and caregiver contributions to self-care in multiple chronic conditions: a multilevel modelling analysis. *International journal of nursing studies*. 2021; 116:103574. <https://doi.org/10.1016/j.ijnurstu.2020.103574> PMID: 32276720
- [4] Mukhlif HA, Qassim WJ. Old ages' attitudes and behaviors toward cardiovascular health promotion. *Rawal Medical Journal*. 2023 May 27;48(2):489-. <http://dx.doi.org/10.5455/rmj.20230310075851>
- [5] Yang C, Lee DTF, Wang X, Chair SY. Effects of a nurse-led medication self-management intervention on medication adherence and health outcomes in older people with multimorbidity: A randomised con-trolled trial.

International Journal of Nursing Studies. 2022; 134:104314. <https://doi.org/10.1016/j.ijnurstu.2022.104314>
PMID: 35849886

- [6] Mousa AM, Mansour K. Effectiveness of an Instructional Program Concerning Healthy Lifestyle on Patients' Attitudes after Percutaneous Coronary Intervention at Cardiac Centers in Baghdad City. Iraqi National Journal of Nursing Specialties. 2020 Jun 30;33(1):1-1. DOI: <https://doi.org/10.58897/injns.v33i1>
- [7] Ching Wong AK, Yuet Wong FK, Sum Chow KK, Man Wong S. Effects of a Video-Based health Program for Homebound Older Adults: Study Protocol for a Pilot Randomized Controlled Trial. Gerontology. 2022; 68(3):353–60. Nurse-led self-care for older adults with multiple chronic conditions PLOS ONE | <https://doi.org/10.1371/journal.pone.0298082> January 30, 2024 9 / 12
- [8] Jasim AH, Mansour K. Determination of Quality of life for patients with Essential Hypertension: A Comparative Study. Iraqi National Journal of Nursing Specialties. 2009;22(1):14-28. DOI: <https://doi.org/10.58897/injns.v22i1>
- [9] Abdulridha M, Mansour K. Nurses' Practices regarding Patients Discharge Planning Post Cardiac Surgery at Cardiac Centers in Baghdad city. Iraqi National Journal of Nursing Specialties. 2018 Dec 30;31(2):117-28. DOI: <https://doi.org/10.58897/injns.v31i2>
- [10] Ibrahim AR, Bakey SJ. Effectiveness of an Education Program on the Knowledge of the Residents of Geriatric-Care Homes about Personal Hygiene. Iraqi National Journal of Nursing Specialties. 2023;36(1). <https://doi.org/10.1016/injns.2023.10.002>
- [11] Jonker AA, Comijs HC, Knipscheer KC, Deeg DJ. Benefits for elders with vulnerable health from the Disease Self-Management Program (CDSMP) at short and longer term. BMC geriatrics. 2015; 15(1):1–10. <https://doi.org/10.1186/s12877-015-0090-4> PMID: 26275714
- [12] Baktash MQ, Naji AB. Efficacy of health belief model in enhancing exercise behavior to preventing stroke among geriatrics homes residents in Baghdad city. Indian Journal of Public Health. 2019 Feb;10(02):929. DOI: 10.5958/0976-5506.2019.00415.7
- [13] AlAbedi GA, Naji AB. Impact of physical activity program upon elderly quality of life at Al-Amara city/Iraq. Medico-legal Update. 2020 Jul 12;20(3):1223-8. <https://doi.org/10.52845/CMRO/2024/7-7-9>
- [14] Najee AF, Hassan HS. Effectiveness of an Instructional Program on Knowledge of Type 2 Diabetic Patient Toward Ocular Self-Care at Diabetic and Endocrine Center in Al-Nasiriyah City. Indian Journal of Forensic Medicine & Toxicology. 2019 Oct 1;13(4):936 DOI. 10.5958/0973-9130.2019.00417.1.
- [15] K., & Babar, Z. U. (2020). Drug burden index, polypharmacy and patient health outcomes in cognitively intact older residents of aged care facilities in Malaysia. Journal of Pharmacy Practice and Research, 50(1), 13–21. <https://doi.org/10.1002/jppr.1556>
- [16] Omar, M., Ariandi, A., & Tohit, N. (2019). Practical problems of medication use in the elderly Malaysians and their beliefs and attitudes toward deprescribing of medications. Journal of Research in Pharmacy Practice, 8(3), 105. https://doi.org/10.4103/jrpp.jrpp_19_35
- [17] Bruggencate, T. T., Luijkx, K. G., & Sturm, J. (2018). Social needs of older people: A systematic literature review. Ageing & Society, 38(9), 1745–1770. <https://doi.org/10.1017/S0144686X17000150>
- [18] Abdulridha M, Naji AB. Evaluation of the Elderly's Environmental Practices Concerning Fall prevention at Governmental Elderly Homes in Baghdad City. Iraqi National Journal of Nursing Specialties. 2016 Dec 30;29(2):74-83. <https://doi.org/10.58897/injns.v29i2>