Promoting Self-Care among Elderly Attending Zagazig Social Club through a Health Education Intervention

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Abstract:
Background: Self-care for health promotion required that clients had the knowledge and competencies needed to maintain and enhance health. **The aim of the study;** was to increase old people's self care capabilities. **Research design;** quasi-experimental design was used. **Setting;** this study conducted at geriatric social clubs at Zagazig city. **Sample;** composed of 120 elderly (60 client for the study group and 60 for the control group). **Tools;** two tools were used in this study; first, an interview questionnaire to collect data about socio-demographic characteristics of the study participants and their knowledge about self care, the second tool was observational checklist for assessing their practice about certain items of self care. **The study results;** revealed statistically significant improvements of the study group knowledge and practice about self care and its elements, also hygienic practice and care of some prevalence health problems faced the elderly after health education intervention. No statistically significant relations detected between elderly knowledge and practice related to self care among the control and the study group and their age, sex, residence, and level of education.**Conclusion;** health education intervention increased elderly satisfactory level of knowledge and adequate practice related to self care. **The study recommended;** implement a follow up health education intervention about self care in all geriatric social clubs, and booklet containing information about elderly self care should be available in the elderly social club library.
Key words: Self care, elderly, social club, health education.

Introduction:

The world's total number of older people was expected almost to double within the next 25 years from 606 million in 2000 to over 1.2 billion by the year 2025 and to reach the 2 billion mark by around 2050.[1] The recent census 2012 in Egypt indicated that the number of elderly represented 7.3% of the total population and expected to rise in ratio to 11.6% in 2030. [2]

Improved health of the population leads to increased longevity and an increase in the elderly population in good physical, mental, social, and financial conditions. [3] The increasing number of elderly people in the community increases the need for health promoting and preventive services. [4] Self-care defined as learned behaviour that was purposeful with patterned and sequenced actions, and suggested that individuals acquired the capacity for self-care during childhood principally in the family, where cultural standards were learned and transmitted intergenerationally. [5]

Self-care was considered the predominant and basic form of primary care. Engaging in self care meant taking responsibility for one's health and well-being. [6]

Positive health promoting lifestyles play an important role in maintaining a high quality of life and greater independence for the older generation. Promoting the physiologic health of older adults includes helping them to understand the importance of good nutrition and proper exercise and how to decrease their risk for certain chronic diseases.[7]

Aim of the study:
The aim of this study was to increase old people's self-care capabilities.

Specific objectives:
The specific objectives of this study were to:

- Assess the knowledge and practices of the elderly regarding self-care.

- Plan and implement a health education program for self-care.

- Evaluate the effect of the health education intervention on the knowledge and practices of the elderly.

Study hypotheses:
After implementation of health education intervention program about self-care:

1. Elderly satisfactory knowledge about self-care will increase by at least 50% relative to pre-program level.

2. Elderly adequate self-care practices will increase by at least 50% relative to pre-program level.

Significance of the study:
The recent census 2012 indicated that the number of elderly represented 7.3% of total population in 2011 and expected to rise in the ratio to 11.6% in 2030.[2] Aging itself cannot be prevented, but some of the health problems associated with aging can be prevented through early detection and effective management. This would need a high level of health awareness that leads to sound health behaviors. To achieve this, there is a need for health education interventions to promote self-care practices among the elderly, and improve their quality of life.

Subjects and methods:
Research design:
A quasi-experimental design was used in this study.
Setting:
The study was conducted at the elderly social clubs at Zagazig city.
Sample:
Random sampling collected from the club logs with the following **inclusion criteria:**
- Age from ≤ 60 to 70 years.
- Self-dependent.
- Accepting to participate in the study.

The sample included 120 elderly males and females attending the above mentioned clubs and the studied sample was divided into two groups, the study group (60 persons) received the health education intervention and the control group (60 persons) did not attend the health education intervention.

Tools for data collection:
Two tools were used in this study for data collection including an interview questionnaire sheet, and observation checklist.

Tool (1): An interview questionnaire
A structure interview questionnaire consisted of three parts:-
Part I: Socio-demographic characteristics of the study subjects.

Part II: Related to elderly medical history.

Part III: Concerned with:

A. Assessment of elderly knowledge about self care.

B. Knowledge about self care practice.

C. Knowledge about deals with most prevalence health problems faced elderly.

The scoring system for knowledge items:

The scoring system for the questions was as follows: - Each right choice takes one point, while zero for wrong answer. In other questions yes took two points, sometimes took one point, and no took zero. The total score was calculated for each elder by adding the score of each item of the questionnaire sheet.

The elderly who took 60% of the total score or more was considered as having satisfactory knowledge and who had less than 60% was considered as having unsatisfactory knowledge.

Tool II: An observation checklist:

The observation checklist was developed for assessing the elderly practice about some items of self care.

Scoring system for practice items were:

Part I for procedures: related to (Practices of wound care, first aid for bleeding, brushing teeth, foot care, and practices of light exercises (quadriceps strengthening exercise).

Each step took two points if done and zero for each step not done. The total score was calculated for each elder by adding the scores of all items of the observation checklist. The elder had adequate practice when his total score was equal to or above 60% and inadequate if it was below 60%.

Part II for balanced diet:

Total score was (6) points. This was calculated for each elderly by adding the score of food groups of diet /day. The elderly had a balanced diet when he took 60% of the diet elements or more per day and an unbalanced diet if he took less than 60% of the diet elements.

Field work:

After securing official permissions to conduct the study, the researcher started identifying the study population, and recruiting the sample. All study subjects had a pre-test upon recruitment using the designed tools. Then, they were divided into two groups; the study group whose exposed to the intervention program, while the control group received the standard care provided in the elderly club. The effect of the intervention was assessed after the end of the program, and after a period of three-month of follow-up using the same study tools. The control group members took the same post and follow-up tests at the same time as the study group.

The educational program:

The intervention group was divided into 6 groups, each one consisted of 10 elderly, and it was applied through (8) sessions two times /week. Four of them covered the theoretical part which included: Self care definition and its elements, the most common problems of elderly as (constipation, sleep problems), the preparation of balanced diet, and the importance of follow up. And the other four sessions were practical which covered hands care, feet care and cutting nails, quadriceps strengthening exercise, teeth care, and wound and burn care.

Pilot study:

A pilot study was carried out on 10% of the elderly persons to assure of the clarity of questions, to remove any ambiguous questions, and to estimate the time needed for collecting data.

The elderly persons included in the pilot study were excluded from the main study sample.

Content Validity:

Two tools were prepared for the assessment phase; a questionnaire and an observation checklist, after reviewing different literatures related to knowledge and practice as regard to geriatric self care. It was reviewed by experts (5 professors of CHN) and according to their opinions items of evaluation questionnaire sheet were modified, and certain questions were added which related to knowledge about self care practice. Also observation checklist was revised by experts to test the consistency of its items and its relevance.

Administrative design and ethical considerations:

Permission for collecting data and implementing the educational program from geriatric social club directors were taking this was done through submission of a formal letter from the dean of the faculty of nursing, Zagazig University to obtain the approval for conducting the study. Data were collected during the period from December 2010 to July 2011.

The agreements for participation were taken after the purpose of the study was explained before collecting data; the elderly were informed about the aim of the study and what would be done by the results. They were given an opportunity to refuse to participate and they were notified that they can withdraw in any stage of the research.

Statistical Design:

The collected data were coded and entered to the SPSS version 10.0 statistical software package. Data were presented by using appropriate statistical tests. These statistical tests were chi-square, mean and standard deviation. For all statistical tests the level of significance was set at $P<0.05$.

Results:

Table (1): Presents the socio-demographic characteristics of the studied sample. According to the table the mean age of the study sample is (64.7 ± 3.5 years and 64.9 ± 3.4 years) respectively. Most of both groups (85%, 83.3%) were females, as well as 60% of the study group were widowed.

As for the studied sample residence, it was found that more than two thirds of both groups (83.3%, 70%) respectively were coming from urban areas. Also the minority of the sample in both groups (10%, 8.3%) respectively had basic education as well as less than half (41.7%) of the control group and about one third (35%) of the study group had university education. Also the majority of the sample in both groups (91.7%, 91.7%) respectively reported that their income were not enough, and the main source of income among both groups were retirement pension (100%, 98.3%) respectively. More than half (55%) of the control group and nearly one third (31.7%) of the study group lived alone.

Table (2): Illustrates that the main diseases are hypertension (35%) and diabetes mellitus (25%), and (70%, 75%) respectively of the control and the study groups took medication regularly to treat these diseases.

Concerning drugs problems, most of the study sample did not suffer from any problems related to regular drug

usage (78.33% of the control group and 73.33% of the study group).

Table (3): Shows the studied sample (control and study groups) satisfactory score level of their knowledge about self care throughout the program. According to the table

there was a statistically significant improvement among the study group in relation to their knowledge about the definition of self care and the elements of self care (p= 0.00). While no change in total score of knowledge about self care among the control group.

Table (4): Shows the studied sample (the control and study groups) satisfactory level of their knowledge about hygienic practice throughout the program. According to the table there was a statistically significant improvement among the study group in relation to their knowledge about hygienic practice (p= 0.00). While no change in total score of knowledge about hygienic practice among the control group.

Table (5): Presents the total knowledge about how to deal with most common problems of the studied sample. The table reveals that before implementing the health education intervention the minority of the study sample (5%,8.3%,0.00%,0.00% and 1.7%,8.3%,0.00%,0.00%) respectively had satisfactory knowledge about dealing with common problems faced the elderly as wound care, minor burn care, constipation and sleep problems in both groups (the control and the study) which improved among the study group in post I to become (58.3%,90%,68.3%,75%) respectively and slightly decreased to reach 33.3%,33.3%,50%,53.3% respectively post II with statistically significant difference between pre and post I and post II of the health education intervention (p= 0.000).

Table (6): Shows the studied sample (the control and study groups) observed adequate practice of self care throughout the program. According to the table there is a statistically significant improvement among the study group of elderly in practice of self care (p= 0.00).While there is no change in observed practice of self care among the control group.

Table (7): Shows a statistically significant difference between the control group and the study group total mean score of knowledge in follow up test of health education intervention in items of knowledge about self care, knowledge about practice of self care and total knowledge.

Table (8): Shows a statistically significant difference between the control group and the study group total mean score of practice in follow up test of health education intervention in items of brushing teeth, foot care, practice exercises, balanced meal and total practice.

Figure (1): Portrays the most common problem associated with regular drug used for treating chronic elderly disease. According the figure: The high complains among both the control and the study group was stomach pain (53.85%, 43.75% respectively), while the lowest complains was increase heart rate (7.69% and 12.5% respectively).

Figure (2): Shows a significant improvement among the study group knowledge about the importance of constant walking throughout the health education intervention (p= 0.00).While slight change was occurred among the control group in follow up phase.

Discussion:

Promoting the health of older adults included helping them to understand the importance of self care as a practice of activities that

individuals initiated and performed on their own behalf in maintaining life, health and well-being. It included personal hygiene, brushing teeth, good nutrition, exercises, and medical follow up. The elderly should practice these elements of self care to maintain health, avoid health hazards, and decrease the risk for certain chronic diseases. [8]

The socio-demographic characteristics of the studied sample revealed that the mean age of the studied sample (the control and the study groups) were (64.7± 3.5years and 64.9± 3.4 years) respectively in table 1. This finding was in the same line with Egyptian study which reported that the mean age of two groups; the target and the control groups were (64.8±4.5 and 64.6±3.5) respectively.[9] Also the present study illustrated that most of both groups (the control and the study groups) were female, this might be due to that the females live longer than males. These results disagree with a study carried out in Fakous city which indicated that males were more than females at age group 60 to 65 years. [10] In addition, the current study revealed that more than two thirds of the control and the study groups were widowed. This finding was in accordance with a study done in Alexandria and mentioned that more than half of the studied sample was widowed.[11] Also these findings were in agreement with Abd-Allah [9]who pointed that more than half of both studied groups in Zagazig city were widowed.

Regarding to residence the present study clarified that more than two thirds of both groups were coming from urban areas. This might be due to the social club near from elderly houses and the availability of transportation as well as spare time, but in the rural area they did not have free time because they were busy with manual work and farming. These results disagree with a study done in India [12] which reported that less than one third (28%) of elderly lived in urban areas.

Concerning the educational level, the minority of the studied sample in both the control and the study groups had basic education, and that less than half of the control group and one third of the study group had university education. This might be due to their high economic standard that permitted them to have a university education. These results contradicted with Berger [13] who found that the older population had less education than the younger population. Moreover, gradual and continuing increase in level of education will be accompanied by better health and higher incomes.[14]

Regarding sources of income in the present study among both groups (the control and the study) were retirement pension. This result was in the same line with Mohamed [10] whose study was done in Fakous city in which he found that the majority of both groups depended on pension as a source of their income. Also this finding was supported with Abd-Allah [9] who reported that pension represented the highest percentage of the source of income of the elderly people of both sexes at Zagazig city. In addition, this finding contradicted with a study done in United State which reported that most income of the older people derived from social security payments and less than one fourth from retirement pensions.[15]

The current study revealed that more than half of the control group

and nearly one third of the study group lived alone; this might be due to loss of spouse, sibling or a close neighbor who can leave an aged person feeling very lonely and socially isolated. This result was similar to a study carried out in U.S.A [16] and mentioned that about 31% of all non institutionalized older persons in 1997 lived alone and the number of older non institutionalized persons living alone increased. Also, most of the older adults lived in a non institutional community setting and a majority 67% of them lived with someone else. [17] Loneliness was found to be a social problem in the old age. [18]

The current study illustrated that most of the control and the study groups suffered from chronic diseases and the main diseases were hypertension and diabetes mellitus in table 2, this might be due to the decrease of organ function and immune function which accompanied aging process. Older people were often at greater risk for acute and chronic diseases as well as for developing serious complications of diseases. These results were in accordance with the study at Zagazig and reported that the main chronic disease which affected the elderly in both the study and the control groups was hypertension 68% and 70% respectively.[9] This result was supported by a study conducted in America that mentioned that the hypertension and diabetes were common chronic illnesses that affected the health status of the elderly.[19] Also a study in United States of America supported the finding of the present study and illustrated that chronic diseases increased with age and most elderly people had at least one chronic disease and more than two thirds of them had two or more chronic conditions.[20]

The studied sample in the present study revealed that they took their medication regularly to treat their chronic diseases; this result was in the same line with a study conducted by Eliopoulos [21] who found that the high prevalence of health conditions in the older population led this group to use a large number and variety of medications.

The present study revealed that most of the control and the study groups suffered from side effects of medication taken to treat their chronic disease and the highest complains were stomach pains while the lowest were increase in heart rate in figure 1. This result conflicted with the finding of a study which reported that the adverse effect of drug on the elderly was due to the regular use of medication to treat their chronic diseases such as confusion, dizziness, and fluid and electrolyte imbalances. [21] But the present study goes in the same line with the study conducted in U.S. They reported that the medication used by the elderly was complicated by the effect of aging.[22.23]

As regard to the total score of satisfactory level of knowledge about self care table 3, revealed that there was a statistically significant improvement among the study group in relation to their knowledge about the definition of self care and its elements, while no change in total score of knowledge about self care among the control group was detected. This finding was in agreement with Mustafa [24] who showed that health education intervention improved student's knowledge about self care of diabetes, and there was highly significant increase among the study group knowledge about diabetes mellitus. This might be due to the study students who had the ability to learn more than the elderly because of old age

short memory. Also similar findings supported the current findings; a study performed in India which concluded that the elderly knowledge in both nutrition and health had improved significantly in all participants after implementing the education intervention program.[25]

The above mentioned results proved the first hypothesis which revealed that the elderly satisfactory knowledge about self care will increase at least 50% after health education intervention.

As regard to satisfactory level of knowledge of studied sample about hygienic practice (bathing, oral hygiene, hands care ,feet care),the current findings showed there was a statistically significant improvement among the study group in relation to their knowledge about hygienic practice in table 4. Also another study performed that was in the same line with the current study and clarified that maintenance of personal hygiene was necessary for an individual comfort, safety, and well-being and added that bathing was a part of total hygienic care. [26]

The present study showed that before implementing the health education intervention, the minority of the studied sample had satisfactory knowledge about dealing with common problems facing the elderly as wound care, minor burn care, constipation, and sleep problems in both groups table 5, which improved among the study group in the post I and follow up with a statistically significant difference between pre and post I and post II of health education intervention. Also the current study findings were supported by Dhaar and Robbani [27] who emphasized that the elderly needed education on self care and they should be educated on the principles of cleanliness, and first aid care.

Regarding practice of self care of the studied sample, the present study illustrated in table 6 there was a statistically significant improvement among the study group in observed adequate practice of self care in (wound care, bleeding care, brushing teeth, foot care and exercises); this reflected the enthusiasm of participated elderly in the study. This finding was supported by Ahemad [28] who found a statistically significant improvement in patient's practice after implementing health education program.

Additionally this finding goes in the same line with a study done in Zagazig University by Abd-El Maksoud [29] who found that after participating in education program, there was a significant improvement in self care and household tasks.

Also these results clarified that the study group level of observed practice of self care improved after the health education intervention in the following items (wound and bleeding care, brushing teeth, foot care, exercises and balanced diet), as stated in research hypotheses by the ratio of 50% at least relative to pre program level but slightly decrease was detected in the follow up.

The above mentioned results proved the second hypothesis which revealed that the elderly adequate self care practice will increase at least 50% after health education intervention.

Conclusion:

In light of the study findings, it can be concluded that both the control and the study groups had low level of knowledge, and deficient in practice related to self care before implementing the program. While after implementing health education intervention about self care, there was a significant improvement in their practice about self care. Satisfactory knowledge and adequate practice of

self care among the study group while little or no change in most items of self care was detected among the control group. There was a statistically significant relation between the control group and the study group after health education intervention in relation to their knowledge and practice, while no statistically significant relation before implementing the health education intervention.

Recommendations:

Based on the study findings, the following recommendations have been considered:

- Implementation of health education intervention about self care should be provided to all the elderly attended social clubs.

- Periodic follow up to the elderly is recommended to check their level of knowledge and practice about self care.

- Booklet containing information about aging process, items of hygienic care, the importance of medical follow up, and practice exercises should be available in geriatric clubs library.

- Further researches are needed in other health settings which provide care for elderly to assess the actual level of knowledge and practice about self care.

Table (1): Distribution of the studied sample according to socio-demographic characteristics

Socio-demographic characteristics	Control group		Study group		Total		Chi-square	
	N=60	%	N=60	%	N=120	%	X^2	P-value
Age :								
≤65	41	68.33	38	63.33	79	65.83	0.333	0.564
>65	19	31.67	22	36.67	41	34.17		
Mean ±SD	64.68±3.52		64.88±3.36					
Sex :								0.803
Male	9	15.00	10	16.67	19	15.83	0.063	
Female	51	85.00	50	83.33	101	84.17		
Marital state:								0.1818
Married	17	28.33	24	40.00	41	34.17	3.40	
Widowed	43	71.67	36	60.00	78	65.00		
Family number : ≤3	43	71.67	49	81.67	92	76.67	1.667	0.195
>3	17	28.33	11	18.33	28	23.33		
Room Number :							0.556	0.456
≤3	34	56.67	38	63.33	72	60.00		
>3	26	43.33	22	36.67	48	40.00		
Crowding index:								
<3	38	63.33	47	78.33	85	70.83	3.260	0.071
≥3	22	36.67	13	21.67	35	29.17		
Mean ± SD	0.76 ± 0.57		0.67 ± 0.39					
Residence :								
Rural	10	16.67	18	30.00	28	23.33	2.981	0.084
Urban	50	83.33	42	70.00	92	76.67		
Education level								
Illiterate or read and write	10	16.67	5	8.33	15	12.50		
Basic education	6	10.00	5	8.33	11	9.17	5.629	0.344
Secondary or diploma	19	31.67	29	48.33	48	40.00		
University and higher	25	41.67	21	35.00	46	38.33		
Monthly income:								
Enough	5	8.33	5	8.33	10	8.33	0.000	1.000
Not enough	55	91.67	55	91.67	110	91.67		
Source of income:								
Retirement	60	100.00	59	98.33	119	99.17	1.008	0.315
Revenue	7	11.67	7	11.67	14	11.67	0.000	1.000
Social affairs	1	1.67	0	0.00	1	0.83	1.008	0.315
Other*	0	0.00	4	6.67	4	3.33	4.138	0.042
With whom you live?								
Wife/ husband	17	28.33	24	40.00	41	34.17	1.815	0.178
One of the sons	24	40.00	25	41.67	49	40.83	0.034	0.853
Relatives	0	0.00	1	1.67	1	0.83	1.008	0.315
Alone	33	55.00	19	31.67	52	43.33	6.652	0.010

More than one answer in the question about the sources of income

Table (2): Distribution of the studied sample according to medical history

Medical history	Control group N= 60	%	Study group N= 60	%	Total N=120	%	Chi-square X²	P-value
Name of the disease:								
▪ Hypertension	20	33.33	22	36.67	42	35.00		
▪ Diabetes mellitus	16	26.67	14	23.33	30	25.00		
▪ Heart disease	5	8.33	4	6.67	9	7.50	1.165	0.948
▪ Kidney disease	4	6.67	3	5.00	7	5.83		
▪ Chest disease	2	3.33	2	3.33	4	3.33		
▪ Lumber disk	5	8.33	8	13.33	13	10.83		
▪ No disease	8	13.33	7	11.67	15	12.50		
Take medications regularly								
▪ Yes	42	70.00	45	75.00	87	72.50	0.376	0.54
▪ No	18	30.00	15	25.00	33	27.50		
Problems from these drugs								
▪ Yes	13	21.67	16	26.67	29	24.17	0.409	0.522
▪ No	47	78.33	44	73.33	91	75.83		

N.B: Some individuals suffer from more than one disease.

Table (3): Satisfactory level of knowledge of the studied sample about self care throughout the program

Items of self care	Control group (N=60) Pre N	%	Post N	%	follow up N	%	P-value	Study group (N=60) Pre N	%	Post N	%	follow up N	%	P-value
Self care Satisfactory	0	0.00	1	1.67	1	1.67	0.60	0	0.00	51	85.00	23	38.33	0.00*
Hygiene Satisfactory	0	0.00	0	0.00	0	0.00	1.00	0	0.00	33	55.00	1	1.67	0.00*
Nutrition Satisfactory	7	11.67	8	13.33	7	11.67	0.95	21	35.00	58	96.67	47	78.33	0.00*
Exercises Satisfactory	0	0.00	0	0.00	0	0.00	1.00	1	1.67	17	28.33	8	13.33	0.00*
Medical follow-up Satisfactory	0	0.00	0	0.00	0	0.00	1.00	4	6.67	33	55.00	10	16.67	0.00*

Table (4): Satisfactory level of knowledge of the studied sample about hygiene practice throughout the program

Items of hygienic practice	Control group (N=60)										Study group (N=60)									
	Pre		Post		follow up		P-value	Pre		Post		follow up		P-value
	N	%	N	%	N	%		N	%	N	%	N	%	
Bathing Satisfactory	16	26.67	18	30.00	17	28.33	0.92	15	25.00	40	66.67	40	66.67	0.00*
Oral hygiene Satisfactory	0	0.00	0	0.00	0	0.00	1.00	0	0.00	21	35.00	21	35.00	0.00*
Hands care Satisfactory	0	0.00	0	0.00	0	0.00	1.00	1	1.67	39	65.00	22	36.67	0.00*
Feet care Satisfactory	2	3.33	2	3.33	2	3.33	1.00	3	5.00	46	76.67	10	16.67	0.00*

Table (5): Satisfactory level of knowledge of the studied sample about care given to their most common health problems throughout the program

Knowledge about common health problems	Control group										Study group									
	Pre		Post		follow up		P-value	Pre		Post		follow up		P-value
	N	%	N	%	N	%		N	%	N	%	N	%	
Wound Care Satisfactory	3	5.00	3	5.00	2	3.33	0.88	1	1.67	35	58.33	20	33.33	0.00*
Minor burn care Satisfactory	5	8.33	5	8.33	5	8.33	1.00	5	8.33	54	90.00	20	33.33	0.00*
Constipation Satisfactory	0	0.00	0	0.00	0	0.00	1.00	0	0.00	41	68.33	30	50.00	0.00*
Sleep problems Satisfactory	0	0.00	0	0.00	0	0.00	1.00	0	0.00	45	75.00	32	53.33	0.00*

Table (6): Observed adequate practice of self care of the studied sample throughout the program

Adequate practice of self care	Control group										Study group									
	Pre		Post		follow up		P-value	Pre		Post		follow up		P-value
	N	%	N	%	N	%		N	%	N	%	N	%	
Wound care Adequate	4	6.67	2	3.33	2	3.33	0.59	2	3.33	36	60.00	40	66.67	0.00*
Bleeding care Adequate	0	0.00	0	0.00	0	0.00	1.00	1	1.67	32	53.33	30	50.00	0.00*
Brushing teeth Adequate	0	0.00	0	0.00	0	0.00	1.00	0	0.00	30	50.00	20	33.33	0.00*
Foot care Adequate	23	38.33	21	35.00	24	40.00	0.85	16	26.67	43	71.67	39	65.00	0.000*
Exercises Adequate	7	11.67	9	15.00	11	18.33	0.59	7	11.67	37	61.67	37	61.67	0.00*

Table 7: Comparison between the control group and the study group total mean score of knowledge in pre and follow up phases throughout the program

Knowledge items		Control		Study		T-test (P-value)	
		Pre	Follow-up	Pre	Follow-up	P1 (pre test)	P2 (follow-up)
Knowledge about self care	Mean	14.917	15.483	16.350	29.367	0.107	0.000*
	SD	4.806	4.831	4.871	5.142		
Knowledge about practice of self care	Mean	9.100	9.117	9.850	13.567	0.127	0.000*
	SD	2.704	2.719	2.648	3.721		
Knowledge about common problems	Mean	6.867	6.867	7.217	7.650	0.469	0.094
	SD	2.568	2.574	2.713	2.503		
Total knowledge	Mean	31.917	32.533	33.333	52.567	0.256	0.000*
	SD	6.882	6.758	6.676	9.060		

 * *P < 0.001 (significant)*

Table (8): Comparison between the control group and the study group total mean score of practice in pre and follow up phases throughout the program

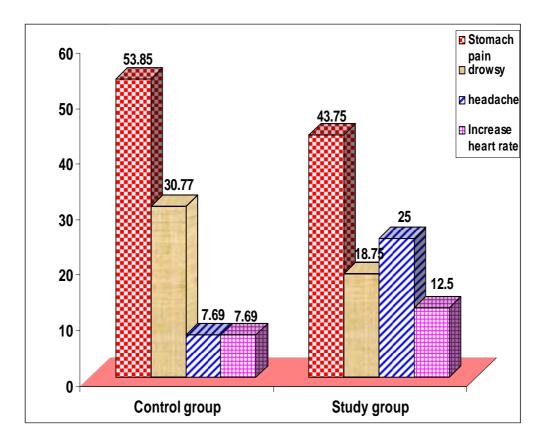| Practice items		Control		Study		T-test (P-value)	
		Pre	Follow-up	Pre	Follow- up	P1 (pre test)	P2 (follow-up)
Wound care	Mean	5.400	5.200	6.033	5.831	0.321	0.185
	SD	3.724	3.041	3.226	2.010		
In case of bleeding	Mean	1.400	1.667	1.717	1.746	0.352	0.770
	SD	1.659	1.434	2.034	1.515		
Brushing	Mean	3.700	3.383	3.617	4.533	0.821	0.000*
	SD	2.094	1.263	1.923	1.346		
Foot care	Mean	6.267	7.233	5.900	9.220	0.604	0.000*
	SD	4.008	3.039	3.708	2.035		
Exercises	Mean	0.900	1.167	0.833	2.542	0.881	0.008*
	SD	2.509	2.505	2.337	3.059		
Balanced meal	Mean	3.017	3.200	3.183	3.500	0.298	0.005*
	SD	0.813	0.605	0.930	0.537		
Total practice	Mean	20.683	21.850	21.283	26.050	0.670	0.001*
	SD	7.475	6.380	7.913	6.495		

 * *P < 0.001 (significant)*

Figure (1): Problems associated with regular drugs usage of the studied sample

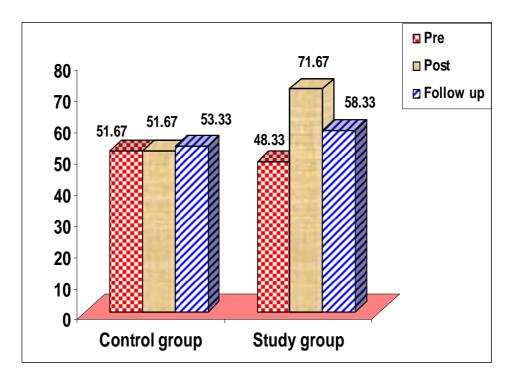**Figure (2): Knowledge about walking regularly among the studied sample**

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