

## Knowledge and Self Care Practices Among Elderly Patients after Total Hip Joint Replacement

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### Abstract

**Background:** Hip Joint Replacement is the most frequently performed and effective surgeries worldwide, which is mainly carried out among elderly people. **Aim of the study:** Assess knowledge and self-care practices among elderly patients after total hip joint replacement. **Subjects and Methods: Research design:** A descriptive design was adopted to carry out this study. **Setting:** The study was conducted at the orthopedic outpatient clinics in two hospitals named Nasr City Hospital, and El Nile Hospital. **Subjects:** purposive sample of 135 elderly patients. **Tools of data collection: Tool I:** Structure interview questionnaire consisted of two parts; Demographic characteristics assessment and elderly patients' knowledge with total hip replacement. **Tool II:** Observation checklist to assess self-care practices regarding activities of daily living of the elderly patients with total hip replacement. **Results:** The study reveals that 65.2% of elderly patients were in age group less than 65 years, as well as 74.8% were males. Regarding elderly patients educational level 30.4% had secondary education, overall, only 17.9% of elderly had good knowledge, also the percent of elderly patients that feel independent about their practice was 6.3%. **Conclusion:** unfortunately, the majorities of the study subjects had low level knowledge, and were partially dependent concerning their practice. **Recommendations:** nursing interventions and training programs should be developed in in the study setting for more improvements.

**Keywords:** Elderly, Knowledge, Self-care practices and Total Hip Joint Replacement.

### Introduction

The world's population is getting older; two billion people will be aged 60 and over by 2050, 22% of the world's population. Today, 125 million people are aged 80 years or older. By 2050, 80% of all older people will live in low and middle income countries. Aging refers to a multidimensional process in humans, the process of physical, psychological, and social changes<sup>(1)</sup>.

Hip joint is an important articulation, which plays a significant role in maintaining the normal activities of the lower limbs. According to many researches, hip fracture is the main cause of the movement disorder of the elderly. It is predicted that with the aging of the global population, the case number of hip fracture worldwide will rise from 4.5 million to 21.3 million by 2050, with 45% of these coming from Africa<sup>(2)</sup>.

Total hip replacement (THA) is an effective means to treat hip joint diseases. Although it cannot reverse the progress of hip joint pathology, it can retain the function of hip joint to the maximum extent<sup>(3)</sup>.

It has become one of the main methods for the treatment of advanced hip lesions. However, elderly patients after THA suffer from larger trauma and need longer time to recover when restoring hip joint function. Therefore, effective guidance and recovery training for patients after THA is of great significance for the recovery and prognosis of hip joint function<sup>(4)</sup>.

Gerontological nurse has an important role assessment the level of knowledge regarding total joint replacement include pain assessment, physical activity and expected outcome to identify the needs of patients and improve their

expectations regarding surgery's outcome. Nurses identify patient's knowledge before surgery to promote patients' recovery, reduce patients' length of stay, and eased their financial burden<sup>(5)</sup>.

The pre/postoperative education helps to alleviate patient fears, and decreases anxiety, length of stay, and postsurgical pain. It also improves patient satisfaction<sup>(6)</sup>.

#### **Significance of the Study:**

Hip Joint Replacement is the most frequently performed and effective surgeries worldwide, it is mainly carried out among people aged 60 years and over, also during 2018 it was reported that the incidence of total hip joint replacement in the USA increased to 300.000 patients every year. Despite all technical advances in THA over the last decades, there are still a certain number of dissatisfied patients with residual pain and function deficits regarding the postoperative outcome after THA, so improve the knowledge and self care practices for elderly patients is very important.

#### **Aim of the study:**

##### **The aim of the study was:**

To assess knowledge and self care practices among elderly patients after total hip joint replacement.

##### **Research questions:**

- What is the level of knowledge after hip joint replacement among elderly patients?
- What is the level of practices regarding their daily living activities after hip joint replacement among elderly patients?

#### **Subjects and Methods:**

##### **Research design:**

A descriptive research design was used to conduct the study.

##### **Study Setting:**

The study was conducted at the orthopedic outpatient clinics in two hospitals named Nasr City Hospital, and El Nile Hospital, which affiliated to the National Health Insurance Organization. Those outpatient orthopedic clinics provide services for pre/post orthopedic surgeries,

physiotherapy and other orthopedic services. The buildings of the outpatients clinics at these two hospital are separate buildings.

Nasr City Hospital is affiliated to the National Health Insurance Organization, Cairo, Egypt; in which the outpatient orthopedic clinic consists of 4 rooms. Every room has a doctor and a nurse.

The other sitting was the orthopedic outpatient clinic at El Nile Hospital, which affiliated to the National Health Insurance Organization, Qaliopelia, Egypt; which consists of two rooms with a doctor and a nurse in every room.

##### **Study Subjects:**

A purposive sample of 135 elderly patients was recruited to participate in this study. Those subjects were chosen according to the following criteria:

Inclusion criteria:

1. Aged 60 years or more.
2. Free from any mental disorders.
3. Diagnosed with hip joint replacement.
4. Accept to participate in the study.

##### **Tool for data collection:**

In order to fulfill the objectives of the study two tools were used to collect necessary data:

**Tool I:** Structure interview questionnaire (Assessment Sheet):

A structured interview questionnaire format was developed in Arabic by the investigator after reviewing the lasted related literatures to collect the necessary data for achieving the study objectives, it included the two following parts:

**Part I:** Demographic characteristics Assessment sheet: that included different items such as gender, level of education and occupation.

**Part II:** Elderly Patients' knowledge with total hip replacement: It was developed by the researcher in Arabic based on literature review and expert opinions to assess the following:

A- Knowledge of the elderly patients regarding the total hip replacement surgery such as, meaning of the total hip replacement, reasons for surgery benefits from surgery, post-operative complications, medications after surgery.

B- Knowledge of the elderly patients regarding the precautions after surgery such as sitting after surgery, walking after surgery and sleeping.

Scoring : The maximum score for each question is 2 and the minimum score is zero, arranged as the following: Complete correct answer = 2, Incomplete correct answer = 1, Don't know or wrong answer = 0

**Scoring system for knowledge:**

Total score was calculated according to the following: Good is ≥ 75% of total knowledge score, Fair is from 60-75% of total knowledge score, Poor < 60% of total score.

**Tool II:** Observation checklist to assess self-care practices regarding activities of daily living of the elderly patients with total hip replacement: It was adopted from the Cleveland Clinic<sup>(7)</sup>; It included five subscales which are Movement, Personal care, Elimination, Instrumental activities and communication.

It consists of 22 items, with a 3-point Likert scale responses: "Independent self-care", "Partially dependent", and "Dependent". Data in this checklist can be completed in 10 minutes also it can be quickly applied revised and explained.

**Scoring system:** The items of each subscale were score from 1 to 3 for the responses from "dependent" to "independent self-care." The highest score indicates the highest level of independence in carrying out activities of daily livings self-care practices.

Answers are totally scored by Likart scale as the following: Completely dependent is from 0 – 23, Partially dependent is from > 23 to 46 , Independent is >46 to 66 .

**Content Validity and Reliability:**

Once prepared in its preliminary form, the data collection tool was presented to a jury of three experts from the Faculty of Nursing (community Health nursing Helwan and Zagazig University) to test its face and content validity. They examined the tool for clarity, relevance, comprehensiveness, and applicability. All their recommendations were done.

The reliability of the tools used through testing their internal consistency. Their reliability proved to be high as shown by the values of cronbach's alpha coefficient in the following: knowledge (.803), self-care practices (.915).

**Field work:**

This lasted for 6 months from the first of March 2020 to the end of August 2020. The data were collected two days a week (Saturday & Thursday) from 9:30 am to 1:00 pm. The time used for finishing the questionnaire ranged between 30 – 45 minutes for each elderly patient. The questionnaire was filled by the researcher after asking the elderly patients the questions in simple, Arabic language.

**Pilot study:**

A pilot study was carried out on 10 % (13 patient) to ensure the clarity, applicability and feasibility of the study tools, and necessary modifications were done and who shared in the pilot study weren't included in study sample .

**Administration and Ethical consideration:**

An official permission was obtained using proper channels of communication. This was done through letters addressed from the Dean of the Faculty of Nursing, Helwan University; explaining the aim and procedures of the study and asking for cooperation to the Directors of orthopedic Outpatient Clinics in the two hospitals Nasr City Hospital, and El Nile Hospital. Anonymity, confidentiality and privacy of the elderly patients were assured.

Voluntary participation and right to refuse to participate in the study was emphasized to the subjects.

#### Statistical Analysis:

Analysis of quantitative data: The collected data were coded and analyzed by using the Statistical Package for Social Sciences (SPSS) software version 20.0. Data was tabulated and presented using various of tests: frequency, calculation of the mean, standard deviation, Pearson chi square, t tests were used in the analysis, chi-square and Mont Carlo exact probability test was used to study the significance of the difference between proportions. The cutoff point for statistical significance was  $P \leq 0.05$ .

#### Results:

**Table (1):** shows that, about 65.2% of elderly patients were in age group less than 65 years, as well as 74.8% were males. Regarding elderly patients educational level 30.4% had secondary education. While, 7.4% of them were illiterate and 8.9% were highly educated .

**Table (2):** reveals the frequency distribution of the elderly patients knowledge regarding Hip Joint Replacement; the table showed that 92.6% of the elderly answered incorrectly regarding benefits of Hip Joint and 77.03% of them incorrectly answered the sign of clot in the leg after the operation. On other hand, 40% of the elderly didn't know the answer about the benefits of medication post-operative.

**Table (3):** shows the frequency distribution of the elderly patients knowledge regarding precautions after Hip Joint Replacement surgery; according to the table; 82.9% of the elderly had incorrect knowledge regarding Precautions for sleeping , and 74.8% of them had incorrect answered about Precautions when climbing and descending the stairs.

**Table (4):** shows the total scores of elderly patients self-care practices regarding daily livings activities after Hip Joint Replacement , the table

revealed that about 65.2% of the elderly patients were partially dependent regarding their mobility , also 45.2% of them were completely dependent regarding their instrumental activities .On other hand, about 73.3% were independent regarding their communication.

**Table (5):** shows the correlation between total knowledge score and total practice score related to daily living activities; the table showed positive correlation among total knowledge score and total practice score related to daily living activities.

**Figure 1:** shows that about 72 % of the studied elderly lived in urban, while 28 % of them were from rural areas.

**Figure 2:** reveals total level of knowledge for elderly patients; it showed that about 72% of the studied elderly patients had poor level of knowledge and only 17.90% of them had good level.

**Figure 3:** shows total score of elderly patients practices, the figure showed that 68.7% of elderly patients were partially dependent regarding their daily activities, and 25% of them were completely dependent while only 6.30% of the elderly patients were totally independent regarding their daily activities.

#### Discussion:

The elderly population candidate for total hip joint replacement is increasing exponentially in developed countries, due to the high prevalence of osteoarthritis ,which is often necessary in patients who are or become unresponsive to medical treatment<sup>(8)</sup>.

Total hip joint replacement is a surgical procedure that relieves pain from most kinds of hip arthritis improving the quality of life for the large majority of elderly patients who undergo the operation, this surgery is indicated for patients who have failed conservative or previous surgical treatment options for a deteriorated hip joint due to osteoarthritis, rheumatoid arthritis and avascular necrosis and

who continue to have persistent, debilitating pain and significant decrease in the activities of daily living. The decision to proceed with total hip joint replacement is made with an understanding of the potential benefits and risks<sup>(9)</sup>.

Regarding to demographic status; the present study revealed that the mean age of elderly patients was  $62.54 \pm 6.32$  years. This result is similar to a study conducted by Sathiyakumar, et al,<sup>(10)</sup> in Japan about: " Hip fractures are risky business: an analysis of the NSQIP data " and found that, age of elderly patients was mean  $62.18 \pm 4.95$  for the study sample. As well it is nearly consistent with Foster et al,<sup>(11)</sup> "a study conducted in Milano about: Hip fractures in adults", represented that mean age of elderly patients was  $62.17 \pm 10.8$  years .

Regarding the elderly patients gender, the study finding revealed that most of them (74.8%) were male. This study finding is in agreement with Wainwright et al,<sup>(4)</sup> in their study that conducted in Chicago about the Dartmouth Atlas of Musculoskeletal Health Care; as they found that , 74% of study sample were male. On other hand, Alcaraz et al.,<sup>(8)</sup> found in their study in Madrid about Primary total hip arthroplasty in elderly patients over 85 years old: risks, complications and medium-long term results, that most of their subjects were women.

Regarding the residence, most of the studied sample (72%) lived in urban area. This result disagreed with Bakr,<sup>(12)</sup> in an Egyptian study about Effect of Educational Program on Quality of Life for Patients Post Hip Joint Replacement, in which he said that 73.3% of their participant were from rural areas. This finding might attributed to the setting of data collection in Nasr City Hospital, and El Nile Hospital, which affiliated to the National Health Insurance Organization, at Cairo governorate which characterized by its modernistic

nature and most of its cities are urban areas.

Concerning the level of education of elderly patients, the current study revealed that more than one third (30.4%) of the elderly patients had secondary education. In the same line of this result Su et al.,<sup>(13)</sup> reported in a study conducted in Omen about "The relation between discharge hemoglobin and outcome after hip fracture" that about (30%) of their studied elderly patients had secondary or diploma level of education.

Concerning the total score of elderly patients' knowledge with hip Joint Replacement, the present results displayed that showed that most (72%) of the studied elderly patients had poor level of knowledge and only 17.90% of them had good level. This might be due to the lack of right and specific information about the disease on media such as television, newspapers, magazines, and etc. Furthermore, there is shortage in the health services that introduce health education for people; the health services predominantly interested in giving medical care.

Those results agreed with Abd-Allah et al.,<sup>(5)</sup> who illustrated most of the elderly patients were having unsatisfactory knowledge about total joint replacement, while only 1.9% were having satisfactory knowledge about it, in their Egyptian assessment about Knowledge and concerns of elderly patients regarding the total joint replacement surgery. Also, agreed with Wenjun et al.,<sup>(14)</sup>; in their study in Jeddah as they found that an inadequate knowledge among most of Saudi participants about the causes and effects of the joint replacement surgery and the effect of osteoarthritis. Additionally, results agreed with Billon, et al.,<sup>(15)</sup>, who added in their study about "Prospective assessment of patients' knowledge and informational needs and of surgeon-to-patient information transfer before and after knee or hip arthroplasty" and pointed

out that, the level of patients' knowledge was fairly low.

Regarding to elderly patients regarding daily livings activities after Hip Joint Replacement, revealed that about more than two thirds (65.2%) of the elderly patients were partially dependent regarding their mobility , also less than half (45.2%) of them were completely dependent regarding their instrumental activities .On other hand, most of them (73.3%) were independent regarding their communication . In the same line with Friedman, et al,<sup>(16)</sup> the study conducted in Pakistan about “ Impact of a comanaged Geriatric Fracture Center on short-term hip fracture outcomes” The study revealed that, two thirds of the studied subjects were partially dependent regarding their mobility.

In the same line with Friedman, et al,<sup>(16)</sup> a study conducted in brazil about “ Geriatric co-management of proximal femur fractures: total quality management and protocol-driven care result in better outcomes for a frail patient population ”as they found that, the half of patient completely dependent regarding their instrumental activities.

Concerning the correlation between total knowledge score and total practice score related to daily living activities; the foregoing study concluded that there was statistically significant positive correlation between elderly patients total knowledge and

practice score after surgery related to their of daily living activities at  $r=0.171^*$ ,  $P=<0.005^*$  respectively. This mean when knowledge and practice improved, the daily living activities will be improved also. This was in agreement with Ali and Abo El-Fadl,<sup>(9)</sup> in their study in which they showed that there was a significant positive correlation with each of hip range of motion and Hip disability and Osteoarthritis Outcome Score.

#### **Conclusion:**

Based on the results of the present study; the study can be concluded that, unfortunately, most of the studied elderly patients had poor level of knowledge regarding hip joint replacement and also more than two thirds of them were partially dependent on their care givers at their daily living activities. Additionally, there was statistically significant positive correlation between elderly patients total knowledge and practice score after surgery related to their of daily living activities.

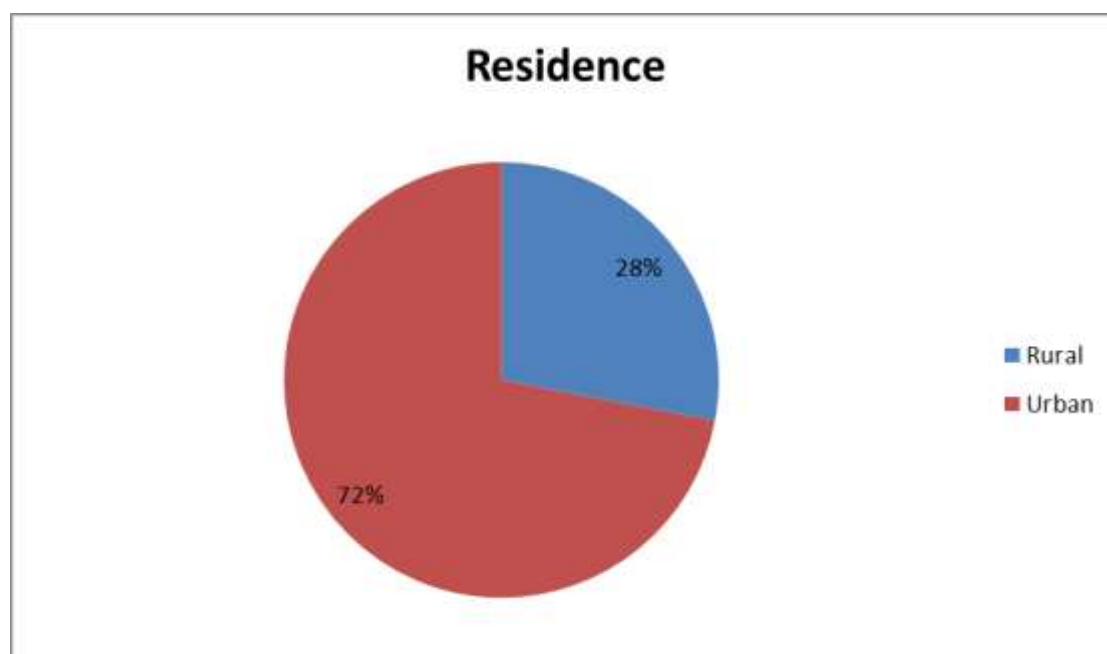
#### **Recommendation:**

Based on findings, the study recommended:

1. Training programs for elderly patients to increase their knowledge and practices regarding total hip joint replacement.
2. Patients with hip joint problems should be encouraged to seek treatment early as the problem can be treated and they will have a better quality of life.

**Table (1):** Frequency distribution of elderly patients' regarding demographic characteristics (n=135).

Demographic characteristics	No.	%
<b>Age (in years):</b>	<b>88</b>	<b>65.2</b>
60 - < 65.	14	10.4
65- < 70.	25	18.5
70 - < 75.	8	5.9
≥ 75.		
<b>Mean±SD (years).</b>	<b>62.54 ± 6.32</b>	
<b>Gender:</b>	<b>101</b>	<b>74.8</b>
Male.	34	25.2
Female.		
<b>Educational level:</b>		<b>7.4</b>
Illiterate.	10	18.5
Read and write.	25	25.9
Primary or preparatory education	35	8.9
Secondary.	12	30.4
University or more.	41	8.9
	12	
<b>Family Caregiver:</b>		
Son.	30	22.2
Daughter.	14	10.4
Husband / Wife.	66	48.9
Relatives.	25	18.5
<b>Occupation:</b>		<b>82.9</b>
Not working.	112	17.1
Working.	23	



**Figure (1):** Distribution of elderly patients' regarding to residence (N=135).

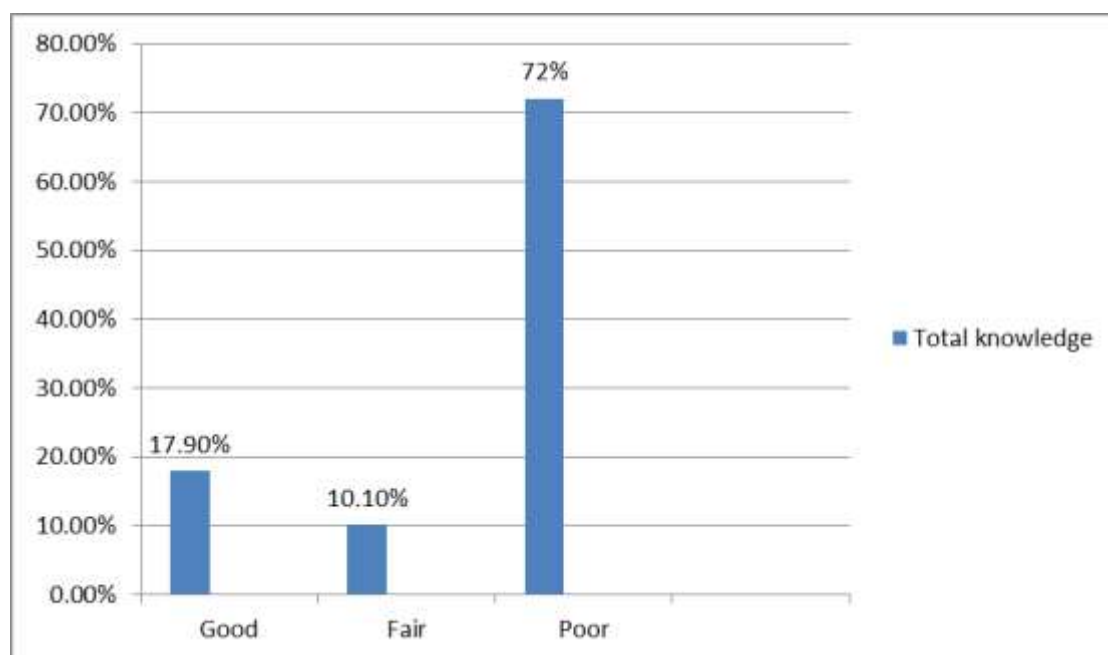
**Table (2):** Frequency distribution of the elderly patients knowledge regarding Hip Joint Replacement (n=135).

Knowledge regarding hip joint replacement:	Correct		Incorrect		Don't Know	
	Frequency	%	Frequency	%	Frequency	%
Meaning	20	14.8	90	66.7	25	18.5
Causes	15	11.1	87	64.4	33	24.4
Benefits of Hip Joint	7	5.1	125	92.6	3	2.2
Complication	16	11.9	99	73.3	20	14.8
Sign of wound contamination	21	15.6	79	58.5	35	25.9
Sign of clot in the leg after the operation	2	1.5	104	77.03	29	21.5
<b>Knowledge related to post-operative medication:</b>						
Medication taken	21	15.6	112	82.9	2	1.5
Benefits of medication	24	17.8	57	42.2	54	40

**Table (3):** Frequency distribution of the elderly patients knowledge regarding precautions after Hip Joint Replacement surgery (n=135).

Knowledge related to post-operative precautions:	Correct		Incorrect		Don't Know	
	Frequency	%	Frequency	%	Frequency	%
Precautions should be followed when sitting down	22	16.3	105	77.8	8	5.9
Precautions for walking	52	38.5	60	44.4	23	17.03
Precautions for sleeping	11	8.1	112	82.9	12	8.9
Precautions when climbing and descending the stairs	14	10.4	101	74.8	20	14.8
Precautions for Swimming	31	22.9	100	74.07	4	2.9
Precautions during exercises	10	7.4	98	72.6	27	20





**Figure (2):** Percentage distribution of the elderly patients 'total knowledge (n=135).

**Table (4):** Distribution of elderly patients self-care practices regarding daily livings activities after Hip Joint Replacement (n=135).

Self-care practice of daily living activities:	Completely Dependent		Partially Dependent		Independent	
	Frequency	%	Frequency	%	Frequency	%
Mobility	29	21.5	88	65.2	18	13.3
Personal Hygiene	52	38.5	72	53.3	11	8.1
Output: (Elimination)	44	32.6	62	45.9	29	21.5
Instrumental Activities	61	45.2	68	50.3	6	4.4
Communication	11	8.1	25	18.5	99	73.3

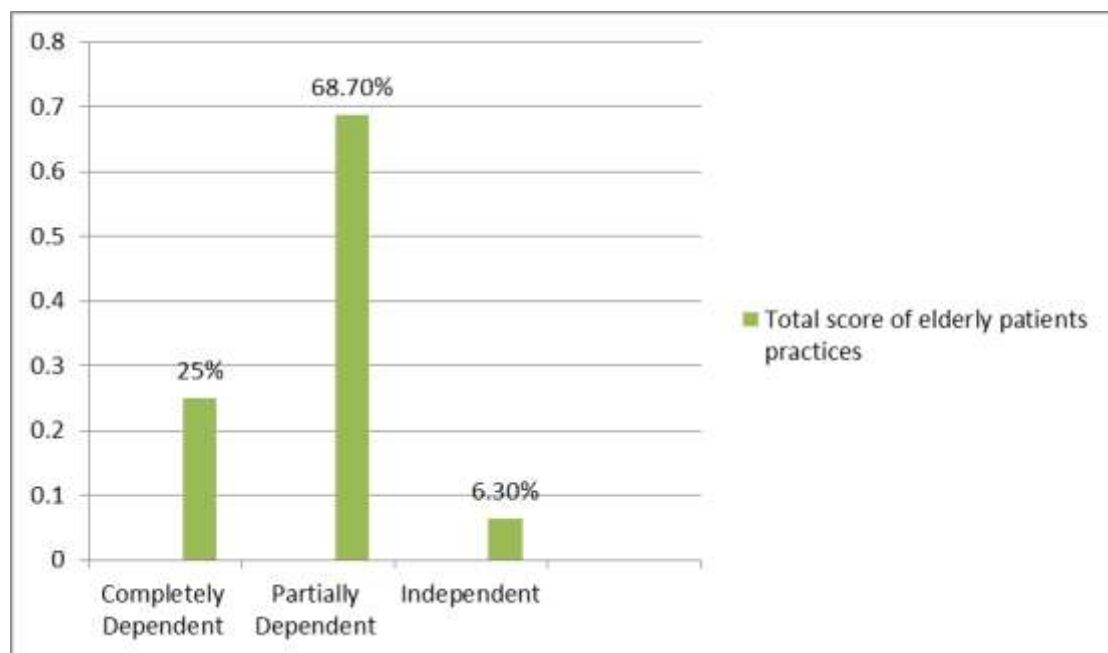


Figure 3: Total score of elderly patients practices (n=135).

Table (5): Correlation between total knowledge score and total practice score related to daily living activities (n=135)

Items	Daily Living activities	
	R	P Value
Total Knowledge	0.013	0.877
Total Practice	0.171*	<0.005*

\*\* P value is significant at level of < .01

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