Depression Level Among Elderly Patients With Stroke At Zagazig University Hospitals

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Abstract

Background: Post stroke depression (PSD) is one of the unresolved issues in recovery and rehabilitation of the stroke patients. It has been considered the most common neuropsychiatric consequence of stroke. Depression may either directly or indirectly lead to more significant impairments in daily activities. **Aim of the study:** This study aimed to assess depression level among elderly patients with stroke at Zagazig University hospitals. **Subjects and Methods; Research design:** Descriptive design. **Setting:** The study was conducted Zagazig university hospitals at three settings; stroke unit, physical medicine and rehabilitation department, and outpatient neurology clinic **Subjects:** A Purposive sampling technique was included 100 elderly patients with stroke. **Tools of data collection:** Two tools were used interview with elderly and questionnaire to collect demographic characteristics of the studied elderly and the geriatric depression scale. **Results:** 47% of studied elderly had severe depression while, 43% of them had mild depression and only 19% of them didn`t have depression. Also, there is only a statistically significant association between the studied elderly`s depression level and their education (P = .046). **Conclusion:** It was concluded that half of the participants exhibited severe depressive symptoms, while more than one third displayed mild depressive symptoms. These statistics underscore the significance of addressing mental health issues among the elderly population, particularly the high occurrence of severe depression. **Recommendation:** Educational program about improving psychological status of elderly patient with stroke

Key words: Depression, Elderly Patients, Stroke.

Introduction:

Aging is a critical period of human life and paying attention to the issues, needs, and diseases of this stage is a social necessity, the elderly population growth is associated with increased prevalence of diseases and dependence in activities of daily living. One of the diseases that are considered as the main health problem in the global elderly population is stroke. Stroke is a common brain vascular disease that has high mortality rates, high rates of disability, and high recurrence rates [(1)].

Stroke can result in multiple impairments of varied severity as any of the body functions controlled by the central nervous system can be affected. Paralysis, sensory, perceptual and cognitive deficits can lead to a variety of activity limitations, these impairments commonly affects activities like self-care, walking, stair climbing and speech [(2)].

Once a stroke occurs, most patients have various types of disabilities such as loss of motor, paresthesia, cognition, and language, depending on the brain lesion. These dysfunctions interfere with the patient's independent performance of daily activities. As a result, patients experience deterioration of activity, damage of autonomy, interpersonal relationship problem, leading to long-term depression, and psychosocial maladjustment [(3)].

Depression is a common experience for stroke survivors. It's often caused by biochemical changes in the brain. When the brain is injured, the survivor may not be able to feel positive emotions. Depression can also be a normal psychological reaction to the losses from stroke [(4)].

Post-stroke depression (PSD), one of the most common complications following stroke, affects approximately one-third of stroke patients and is significantly associated with increased disability and mortality as well as decreased quality of life, which makes it an important public health concern. Treatment of PSD significantly ameliorates depressive symptoms and improves the prognosis of stroke [(5)].

Nursing professionals can build a trusting relationship Action by Interacting with the patient as much as possible with the four attitudes, Listen to patient statements, patient manner, and empathy and use more non-verbal language. For example: a touch, a nod of the head, Note the patient talks and give responses according to her wishes, Speak with a low tone of voice, clear, concise, simple and easy to understand and Accept the patient is without comparing with others. [(6)].

Significance of the study:

Stroke is the second leading cause of death worldwide and the third most common cause of disability, Stroke is a leading cause of death and disability internationally [(7)].

Among survivors of stroke, over half have significant physical disabilities and/or psychiatric complications, the most common of which is post-stroke depression (PSD) stroke made up the third-leading cause of disability-adjusted life-years (DALYs) worldwide within the first 5 years after the event [(8)]. The absolute number of people with post-stroke depression (PSD) is expected to rise proportionally [(4)]. Therefore, this study will conduct to evaluate cognitive impairment and depression among elderly patients with stroke at Zagazig University Hospitals.

Aim of the study:

The aim of the current study is to assess depression level among elderly patients with stroke at Zagazig University hospitals.

Research Questions:

- Is there a depression among elderly patients with stroke?

Subjects and Method:

Study design:

The descriptive design was used to conduct this study.

Study setting:

The study was conducted at Zagazig university hospitals at three settings; stroke unit, physical medicine and rehabilitation department, and outpatient neurology clinic in Zagazig City, Sharkia governorate.

Study subjects:

A Purposive sampling technique was used in the recruitment of this study subjects from the above-mentioned setting and who fulfilled the study inclusion criteria. The subjects eligible for the present study included 100 elderly patients with stroke **undergoing the following inclusion criteria:**

1. Elderly patients aged 60 years.
2. Elderly diagnosed of stroke at least (three months duration) documented by CT or MRI brain.

- **Exclusion criteria:**
  1. Presence of additional severe medical conditions preventing active rehabilitation (e.g., cardiac failure, severe chronic lung disease necessitating a constant use of oxygen).
  2. Patient with disturbed conscious level.
  3. Patients receiving anti-psychotic drugs, antiepileptic. Other causes of dementia rather than stroke.

Tools for data collection:

Tool I: Interview questionnaire of the studied elderly: It covered questions such as, sex, marital status, and level of education, current occupation, residence and source of income. Besides questions such as, age and number of family members. It included eight questions.

Tool II: The Geriatric Depression Scale (GDS-30) [Benedetti et al. [9]]: It was first created by **Yesavage et al.** [10] has been tested and used extensively with the older population. It is a brief questionnaire in which participants are asked to respond to the 30 questions by answering yes or no in reference to how they felt on the day of administration.

Scoring system:

Scores of 0-9 are considered normal, 10-19 indicate mild depression and 20-30 indicate severe depression.

- Normal patient=19%,
- Mildly depressive =34%
- Severely depressive=47%

Content validity and reliability:

It was established by panel of three expertise from department of community health nursing, one professor of community health nursing, and two professor of medical surgical nursing department who reviewed the instruments for clarity, relevance, comprehensiveness, understanding, applicability and easiness for administrative minor modifications were required and correction was carried out accordingly.

Reliability of the items of the tools was assessed using Cronbach's alpha test, it' s results was .818 for 3Ms scale, 653 for Depression scale and .929 for Daily performance.

Pilot study:

A pilot study was conducted before starting data collection to evaluate sensitivity, specificity, clarity and applicability of the questionnaire and to do the necessary modification. Also, to determine the time needed. It was carried out on 10 elderly persons from the previous settings. Analyses of the pilot study revealed that minimal modifications are required. These modifications were done and the subjects were excluded from the actual study.

Field work:

Once the permission was granted to proceed with the study, the researcher started to prepare a schedule for collecting the data. Each elderly was interviewed individually by the researcher who introduced herself, explained the aim of the study briefly, reassured them that information obtained is strictly confidential, and would not be used for any purposes other than research. After that, the verbal agreement was obtained to collect the necessary data. The researcher used to go to Zagazig University hospitals for interviewing the woman who fulfills the criteria.

The study tools were answered by each elderly during the interview, and the time needed ranged from 15 to 20 minutes, according to understanding and cooperation of the woman. The fieldwork was executed over eight months from the beginning of August 2022 up to the end of March 2022; three days per week (Monday, Tuesday, and Wednesday) from 9.00 am to 1.00 pm.

Administrative and Ethical considerations:

The ethical issues were taken into consideration during all phases of the study. Firstly, the study was approved by the pertinent authority of research ethics committee (REC) of faculty of nursing at Zagazig University. Then, approved was taken by director general of Zagazig university hospitals. On the other hand, a verbal agreement for participation of the informants was taken after fully explanation of the aim of the study.

Participants was given the opportunity to refuse the participation, and they were notified that they could

withdraw at any stage of the data collection interviews; also they was assured that the information would be confidential and used for the research purpose only. The researcher assured maintaining anonymity and confidentiality of subjects' data. The researcher phone number and all possible communicating methods were identified to the participants to return at any time for any explanation. An ethical approval from Zagazig university committee was obtained to conduct the study.

The administrative design implemented through submission of a formal letter containing aim of the study from post-graduate department then referred to dean of faculty of nursing, Zagazig University, followed to general director of Zagazig university hospitals to dean of faculty of medicine which in turn referred to general director of Zagazig university hospitals for final approval.

Statistical analysis:

All data were collected, tabulated, and statistically analyzed using the IBM SPSS (Statistical Package for the social sciences) statistics for windows, version 23.0 IBM Corp., Armonk, NY: USA. Quantitative data were expressed as the mean ± SD & (range), and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage).

Percent of categorical variables were compared using Chi-square test, Pearson correlation coefficient was calculated to assess relationship between various study variables, (+) sign indicate direct correlation & (-) sign indicate inverse correlation, also values near to 1 indicate strong correlation & values near 0 indicate weak correlation. All tests were two sided. P-value < 0.05 was considered statistically significant, p and p-value ≥ 0.05 was considered statistically insignificant (NS).

Significance of the results:

- Highly significant at p-value < 0.01.
- Statistically significant was considered at p-value < 0.05.
- Non-significant at p-value ≥ 0.05

Results:

Table (1): Reveals that the studied elderly`s mean age was 67.66 ±5.61 years, with more age group (60-69 years)52 % of them were female and 69% were married. As regard residence, 72 % of the studied elderly lived in rural residence. Concerning the studied elderly`s occupation, 95% of them weren`t working and living with their families respectively. Regarding income, 57% of the elderly patients having insufficient income and 43% of them had sufficient income respectively.

Table (2): Shows that the studied elderly patients reported being bothered by thoughts that can't get out of head (87%), afraid that something bad is going to happen to them (73%), prefer to stay at home, rather than going out and doing new things (69%) and feel having more problems with memory than most (67%). On the other hand, they didn`t report being hopeful about the future (79%), having good spirits most of the time (68%), feeling happy most of the time (82%) and think it is wonderful to be alive now (78%) respectively.

Figure (1): Portrays that 47% of studied elderly had sever depressives while, 43% of them had mild depressives and 19% of them didn`t have depression.

Table (3): Presents the best fitting multiple linear regression model for depression score. It indicates that elderly`s educational level is statistically significant in dependent positive predictors for depression score. While, total 3MS score is statistically independent negative predictor for depression score. However, it explains 35% of the

variation in the score as evident from the r-square value.

Table (4): Shows statistically significant positive correlation between the studied elderly`s depression level with their age (p= .220) while there is a statistically significant negative correlation between the studied elderly`s depression level with their marital status (p=-.217) and education with (p=-206).

Discussion:

As people age, their risk of stroke complications and mortality rises, impairing patients' quality of life. Patients and their caregivers are significantly impacted by nursing care [(11)]. As cognitive impairment and dementia have been identified as the strongest expenditure among older and oldest individuals. Depressive symptom and cognitive impairment often co-occur in advanced age, leading to a variety of emotional and physical problems that affect the ability of individuals in work and life and further reduce the quality of life [(12)].

Gerontological nurses are indispensable in caring for patients with acute and convalescent stroke. In care of stroke patients with cognitive impairment and depression, it requires much of gerontological nurses to provide required care. It was essential not only to provide care for the patients, but also to educate them about self-care; not only to manage the patients' physical condition (blood pressure, blood sugar level, etc.), but also to provide psychological support and be a friend at times. Cognitive impairment and depression require much of gerontological nurses to provide required care [(13)].

Therefore, the aim of the current study was to assess cognitive impairment and depression among elderly patients with stroke at Zagazig University hospitals.

In term of Age of the studied elderly patients; the findings of this study indicated that less than three quarters of the studied elderly patients aged from **60 to 69 years** and mean age was 67.66 ±5.61 years**.** This may be because the risk of stroke rises with age, which can signal the start of a sedentary lifestyle and several physiological changes, such as brain blood vessel narrowing. The previous findings were in the same line with those of other previous study in Jordan carried out by **Alawneh et al. [(14)]** who revealed that about three quarters of the studied elderly patients aged from 60 to 69 years old and mean age 67.8 ± 12.2 years old.

In term of sex of the studied elderly patients in the current study, females were more prevalent than males. This finding might be due to the increasing number of women age estrogen is not able to produce more of High-Density Lipoprotein, so most likely the occurrence of thickening of the arteries (atherosclerosis) due to increased Low-Density Lipoprotein.

Likewise, the finding of study conducted in Iran by **Hekmatpou et al. [(15)]** who found that most of the studied patients were females. On other hand, this result disagreed with study done in Kashan by **Dianati et al. [(16)]** who reported that less than two thirds of the studied patients were males.

Concerning to **Residence of** the studied elderly patients, the present study showed that less than three quarters of them lived in rural residence. The finding disagreed with study done in Cairo by **El Sayed and Ewees [(17)]** who revealed that less than two thirds of the studied patients lived in urban residence.

Pertaining to marital status of the studied elderly patients, the present study showed that more than two thirds of the studied patients were married. This might be due to the high daily problems and stress on married patients compared to single patients, which was a risk factor for hypertension. In the same stream, a study conducted in Tabriz by **Salarimehr et al. [(18)]** who found that

most of the studied patients were married.

With regards to the level of education of studied elderly patients, the present study findings explained that less than two thirds of them didn`t neither read nor write. In comparison, secondary education was less than one quarter. This result might be due to around three quarters of the study participants living in rural area, where there is no interest in education. Similarly, the pervious study results agreed with a study conducted in Chine by **He et al. (19)** to investigate the incidence of PSCI in first-ever ischemic stroke Chinese, summarized Previous that, lower education level was linked to an increased risk of stroke.

On other hand, this finding disagreed with study carried out by **Zamzam et al. (20)** at Surakarta City Hospital in Sebelas Maret who conducted their study to analyze the determinants of the quality of life of patients post stroke and found that that less than two thirds of the studied patients had secondary education, in comparison, didn`t read nor write just 2.0%.

Regarding to current occupation of the studied elderly patients, the current study showed that the majority of them are not working currently. This might be due the values of the elderly patient, as old age was a time to relax rest and come closer to God and worship, and that they achieved their duty in their lives. This result was consistent with those studies conducted by **Abd-El Mohsen et al. (21)** in Saudi Arabia and showed that about three quarters of the studied elderly patients are not working currently.

Regarding **Month Income** of the studied elderly patients, more than half of them have insufficient month income. The previous finding agreed with a study conducted in Port Said by **Mohammed and Bakr (22)** who revealed that most of the studied patients have not enough monthly income.

Regarding to total elderly's depression level among the studied elderly, the current study portrayed that less than half of studied elderly had sever depressives while, about one third of them had mild depressives and about one fifth of them didn`t have depression. Conversely, this finding was inconsistent with a study conducted in Ethiopia by **Fantu et al. (23)** who demonstrated that two thirds of the studied patients didn`t have depression, while 1.9% of them had sever depressives.

The current study elicited that, there is a statistically significant association between the studied elderly`s depression level and their education. While it shows that there is a no statistically significant between the studied elderly`s depression level and other demographic data. This outcome in same line with **Yao et al. (24)** in China and showed that there is a statistically significant association between the studied patient's depression level and their education.

The present study showed that, there is a statistically significant association between the studied elderly`s depression level and their history of admission in the last year and the first time of stroke. While it shows that there is a no statistically significant between the studied elderly`s depression levels and their periodic medical checkup and suffering of stroke timeframe. This finding was consistent with a study conducted in Ethiopia by **Fantu et al. (23)** who demonstrated that there is a statistically significant association between the studied patient's depression level and their history of admission in the last year.

Conclusion:

In conclusion, based on the results of the present study it could be concluded that, it is about half of the participants exhibited severe depressive symptoms, while more

than one third displayed mild depressive symptoms. These statistics underscore the significance of addressing mental health issues among the elderly population, particularly the high occurrence of severe depression.

Recommendations:

- Educational program about improving psychological status of elderly patient with stroke.
- Further studies to define correlation between depression and quality of life in elderly patients with stroke.

Table 1: Demographic characteristics of the studied elderly patients (N=100)

Demographic characteristics	(n=100)	
	Frequency	Percent
Age group: /year		
60-69	69	69.0
70-79	26	26.0
≥ 80	5	5.0
Mean ± SD	**67.66 ± 5.61**	
(range)	**(60- 83)**	
Gender:		
Male	48	48.0
Female	52	52.0
Residence:		
Rural	72	72.0
Urban	28	28.0
Marital status:		
Married	69	69.0
Unmarried [divorced-widow]	31	31.0
Current occupation:		
Work	5	5.0
Not work	95	95.0
Living with whom:		
Alone	5	5.0
With family	95	95.0
Income:		
Sufficient	43	43.0
Insufficient	57	57.0

Table (2): Depression scale items among the studied elderly patients (N=100)

Items	Yes		No	
	No.	%	No.	%
1. Are you basically satisfied with your life?	66	66.0	34	34.0
2. Have you dropped many of your activities and interests?	62	62.0	38	38.0
3. Do you feel that your life is empty?	45	45.0	55	55.0
4. Do you often get bored?	54	54.0	46	46.0
5. Are you hopeful about the future?	21	21.0	79	79.0
6. Are you bothered by thoughts you can't get out of your head?	87	87.0	13	13.0
7. Are you in good spirits most of the time?	32	32.0	68	68.0
8. Are you afraid that something bad is going to happen to you?	73	73.0	27	27.0
9. Do you feel happy most of the time?	18	18.0	82	82.0
10. Do you often feel helpless?	62	62.0	38	38.0
11. Do you often get restless and fidgety?	59	59.0	41	41.0
12. Do you prefer to stay at home, rather than going out and doing new things?	69	69.0	31	31.0
13. Do you frequently worry about the future?	48	48.0	52	52.0
14. Do you feel you have more problems with memory than most?	67	67.0	33	33.0
15. Do you think it is wonderful to be alive now?	22	22.0	78	78.0

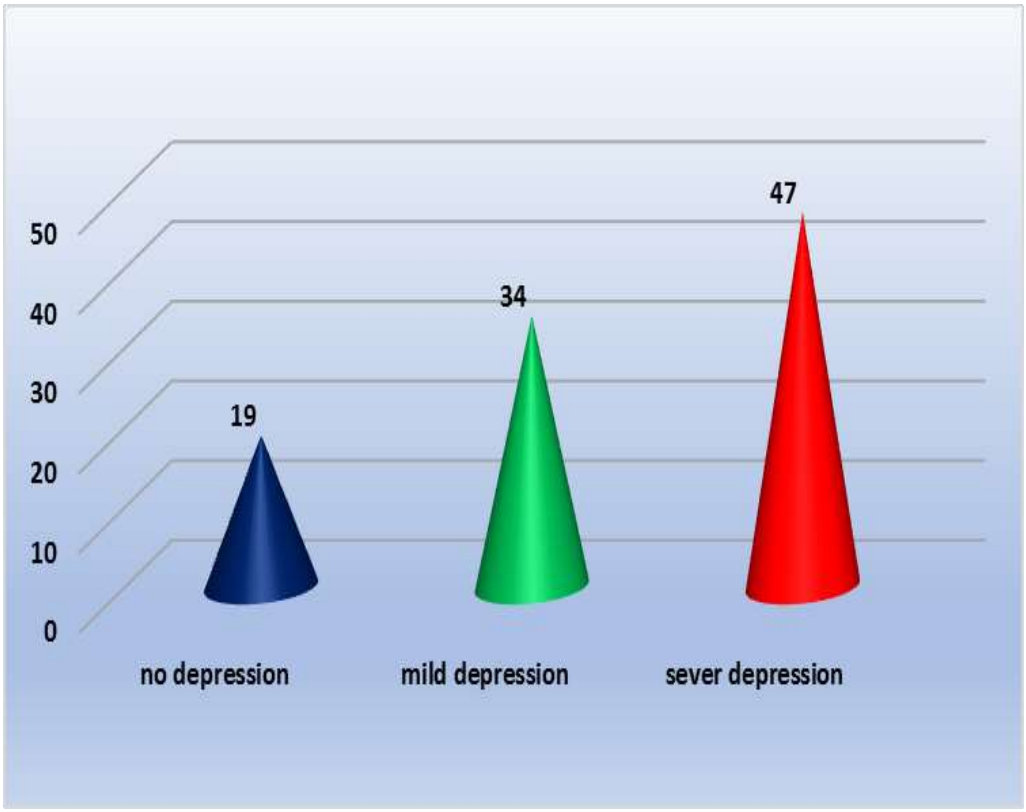

Figure (1): Depression level among the studied elderly patients (n=100)

Table (3): Best fitting multiple linear regression model for depression score

Items	Unstandardized Coefficients Standardized Coefficients			t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	50.924	6.932		7.347	.000	37.161	64.687
Educational Level	1.564	.552	.317	2.833	.006	.468	2.660
Marital status	-2.073	1.520	-.117	-1.364	.176	-5.090	.945
Last year hospital admission	.216	1.816	.011	.119	.906	-3.391	3.822
First time of stroke	-2.866	1.573	-.169	-1.822	.072	-5.990	.258
Total3Ms	-.404	.069	-.670	-5.814	.000	-.542	-.266

R-square=0.35 Model ANOVA F=10.03, p<0.05

Table (4): Correlation between depression level scores and elderly characteristics

Scores	Spearman's rank correlation coefficient
	Depression level
Age	.220*
Gender	.196
Marital status	-.217*
Education	-.206*
Residence	.120
Have chronic diseases	-.145
Last year hospital admission	.195
Stroke time	-.117

(*) Statistically significant at p<0.05 (**) statistically significant at p<0.01

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