

## The Self- Efficacy of Patients with Cerebrovascular Stroke During Recovery Period

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### Abstract

**Introduction:** Stroke is the second cause of mortality in the world; it is a frequent chronic disease with a high rate of morbidity **Aim:** This study aimed to evaluate the self- efficacy of patients with cerebrovascular stroke during the recovery period and identify the differences in stroke self-efficacy level among some relevant variables. **Research design:** A descriptive design was employed to achieve the aforementioned objectives. **Setting:** The study was conducted at the Neurological department and stroke center at El Hadara University Hospital. **Subjects:** The study included a purposive sample of 100 adult patients diagnosed with cerebral stroke and admitted to the above mentioned - settings were included in the study. **Tools:** two tools were used; Patient Socio-demographic data tool and The Stroke Self-Efficacy Questionnaire. **Results:** this study showed that more than half of the studied patients had moderate self-efficacy and stroke female patients who are within 40 > 50 years' age group and live with spouses no other family members and who have weakness, have a better stroke self-efficacy than that of other groups. **Conclusion:** This study concluded that more than half of the studied Patients had a moderate level of stroke self-efficacy and there was a significant difference between patients' stroke self-efficacy level and gender and type of stroke. Also female patients who are within 40 > 50 years' age have better self- efficacy than other groups. **Recommendations:** Nurses need to value the self-efficacy-based intervention and its positive impact on improving stroke patients' functional capacity in terms of activity of daily living and health-related quality of life.

**Keywords:** self-efficacy - cerebrovascular stroke - recovery period

### Introduction:

Cerebrovascular stroke is the second cause of mortality in the world, accounting for 11.13 percent of all fatalities. It is a frequent chronic disease with a high rate of morbidity, and disability, and it poses a severe health risk to humans. Ischemic stroke is the most common kind of stroke, accounting for roughly 87 percent of all instances. Although medical advancements have resulted in an increase in the number of stroke survivors, many will suffer from varying degrees of disability. When patients are discharged, they are frequently accompanied by language impairment, limb hemiplegia, and other dysfunctions, and the rehabilitation of these abilities can take up to 6 months (Hu, Yang, Kong, Hu, & Zeng, ,2018; koolae, Shahmoradi, Kalhori, Ghannadan & Younesi, 2018).

In the United States, 795 000 people have a stroke each year, with 87 percent (690 000) being ischemic and 185 000 being recurrent. Each year, over 240 000 people suffer from a

transient ischemic attack. Kleindorfer, et al., 2019). In 2019, there were 122 million incident stroke cases, 101 million prevalent stroke cases, 143 million disability-adjusted life-years (DALYs) owing to stroke, and 655 million stroke fatalities. Stroke was the second-leading cause of death globally in 2019, and the third-leading cause of death and disability combined. From 1990 to 2019, the total number of incident strokes climbed by 70%, prevalent strokes by 85%, stroke deaths by 43%, and DALYs attributable to stroke increased by 32% (GBD 2019 Stroke Collaborators,2019).

Patients who have had a stroke have varying degrees of functional impairment as walking problems, which leads to long-term disability in roughly 50%–70% of victims, affecting the patients' quality of life significantly. On the other hand, sudden change in the life of people after stroke can lead to a wide range of negative psychological and behavioral symptoms, including post-stroke depression (PSD) and anxiety, vascular cognitive impairment (VCI), and post-stroke fatigue (PSF) that can stymie

recovery and result in poor functional results and a lower quality of life. At least one of these diseases may impact 20 percent to 50 percent of all people who have had a stroke. There may be overlap in the occurrence of various disorders, making diagnosis and adequate care more difficult. Fatigue and depressive symptoms have been found to coexist in up to 30% of stroke survivors, which could be linked to cognitive and mobility issues (Lancto<sup>t</sup>, et al. 2019; Tu, Wang, Wen, Xu & Wang, ,2018; Wang, Shi, Y. Liu, Jia, Gao, Pang, & Deng, 2019).

Self-efficacy is a person's confidence to carry out behavior necessary to reach the desired goal which is an important precondition for successful self-management (Goossensen, Genugten, Lingsma, Dippel, Koudstaal & Hertog 2018). self-efficacy (SE) is an important psychological construct known to influence engagement with physical activity among patients. General SE is defined by Bandura as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments". Evidence indicates that SE is associated with increased physical activity levels and improved self-management, leading to positive health outcomes (Shajrawi, Granat, Jones, & Astin, 2019).

Belief in one's own abilities helps one achieve success and gives them the energy to take action. The greater one's self-efficacy conviction, the higher one's self-goals, and the greater one's commitment to attaining them, even in the face of adversity. A poor feeling of self-efficacy, on the other hand, is linked to despair, anxiety, and helplessness, and a lack of self-efficacy can entirely deplete one's motivating capacity. Self-efficacy distinguishes persons in terms of how they think, feel, and behave. Assessing self-efficacy and striving to increase it can assist stroke survivors to acquire more control over many essential aspects of their disease, as well as boost their prospects of better and longer-lasting rehabilitation benefits. There is mounting evidence that therapies focused on improving self-efficacy have a major impact on the efficacy of chronic illness therapy, including stroke therapy, and that physiotherapists may play a key part in this process (Gieracha & Mazurek, 2019).

Nurses can be the best candidates for rehabilitation delivery as they play a vital role and are responsible for patients 24 hours a day. Nursing can improve the neurological function and activities of daily living (ADLs) of patients with stroke. As fundamental parts of rehabilitation nursing, nurses offer care, provide advice and information, facilitate personal recovery, create a rehabilitation environment, and coordinate interdisciplinary provision. Moreover, nurses in rehabilitation help patients learn and recover control over their impairments and health, as well as improve their prospects. The function of self-efficacy in stroke patients' confidence in their abilities and competencies has an impact on the patients' ability to learn. Nurses generally do not use self-efficacy therapies or give psychological care to stroke patients, focusing instead on physical (functional) and practical care (Wang, Chen, Zhang, Li, & Jin, 2019). There are many studies done to identify the relationship between self-efficacy and mobility and ADL, depression, and health-related quality of life in stroke patients, and what the impact of various self-efficacy interventions are on these patient outcomes to deliver high-quality care to these patients. A tailored nursing therapeutic plan focusing on clients' readiness, resources availability, enhancing adaptation capacities by working on resilience and self-efficacy of the patients can be used to create an enabling environment that can promote healthy transition.

Finally; based on the aforementioned description of self-efficacy, it is critical to assess stroke self-efficacy in post-stroke patients to anticipate their level of independence in terms of functional capacities and self-management characteristics. This would be helpful to them in terms of moving forward in the rehabilitation program. Assessing stroke patients' self-efficacy level is the starting point of applying nursing therapeutics. As a result, it is mandatory to assess stroke patients' self-efficacy level as an infrastructure of the rehabilitation journey. The outcome of the planned assessment would be essential in designing and implanting tailored nursing therapeutics (AL-Fayyadh, 2019). So Nurses need to assess first the self-efficacy itself of these patients during the recovery period.

**The aim of study:**

Evaluate the self- efficacy of patients with cerebrovascular stroke during the recovery period and identify the differences in stroke self-efficacy level among some relevant variables.

**Research question:**

- What is the self- efficacy of patients with cerebrovascular stroke during recovery period?
- What are the differences in stroke self-efficacy level among some relevant variables?

**Material and Methods****I- Material****Research design:**

A descriptive design was employed to achieve the aforementioned objectives.

**Settings:**

The present study was conducted at the neurological department and stroke center at El Hadara University Hospital. The neurological department of El Hadara University Hospital is composed of two units, one for male patients and the another for females, there are three room in each unit, the capacity of each room is 8 beds, the total number is 48 beds, the stroke center consists of 2 rooms each includes 5 beds and waiting room. the interview and data collection from patients were done in waiting room and examination room of stroke center.

**Subjects:**

Purposive sample of 100 adults diagnosed with cerebral stroke and admitted to the above mentioned settings was included in the study.

- Subjects were included in this study according to the following inclusion criteria:
  1. Adult patients, aged from 18 to 60 years.
  2. Patient who is conscious and able to communicate verbally.
  3. Patients who discharged from the hospital within 2 weeks and living at home and

attended the stroke center for disease management.

4- Clinically diagnosed with hemorrhagic or ischemic stroke

5- Patients willing to participate in the study.

- The subjects of the study are selected according to power analysis using the program Epi-info7 to estimate the sample size using the following parameters:

1. Population size is (144) patients in (2018-2019)
2. Expected frequency 50%
3. Margin of errors 5%
4. Confidence coefficient 95%
5. Minimum sample size 100

**Tools of this study:**

Two tools were used to collect necessary data.

**Tool 1: patient s Socio-demographic and clinical data**

**Part I:** Socio-demographic data which includes data as age, gender, marital status, level of education, living conditions

**Part II:** clinical data as chronic disease, caregiving, and type of stroke. (Tocu.2018)

**Tool II: The Stroke Self-Efficacy Questionnaire (SSEQ)**

The SSEQ measures stroke survivors' daily functional activities and self-management. The original SSEQ scale's reliability and validity were completed by Jones. (2008). A 10-point scale (0 “not at all confident” to 10 “very confident”) is calculated, providing a score range between 0 and 130 points. Tocu, et al.2018 used Rasch analysis for the SSEQ and scored each item on a 3-point scale (0 “not at all confident” to 3 “very confident”) The 3-point scale should be used in exactly the same way as the 10-point scale (providing a score range 0–39) A higher score indicates a higher self-efficacy. **In this study**, the 3-point scale was used for collecting data.

It contains (13) items related to the following questions:

Get comfortable in bed every night, get out of bed on even when feel tired, walk a few steps on any surface inside house, walk about house to do most things wanted, walk safely outside any surface, use both hands for eating food, dress and undress even when feel tired, prepare a meal like for yourself, persevere to make progress from stroke after discharge from therapy, do own exercise program every day, cope with the frustration of not being able to do some things because of stroke, continue to do most of the things like to do pre stroke, keep getting faster at the tasks that have been slow since stroke.

### Scoring system:

Maximum total score of the studied patient's self-efficacy was calculated to be 39 (13 statements x 3 points=39) and minimum total score equal to 13 (13 statements X 1 points=13) the raw score transformed to percentage.

A total scores percentage were classified as the following:

- 0-13 was considered as **low self-efficacy**.
- 13 > 26 was considered as **moderate self-efficacy**.
- 26-36 was considered as **high self-efficacy**.

Each participant was asked to express his self-confidence for each item on a three point Likert type scale ranging from 0 to 3. a score of (0) will be given to not at all confident, the score of (1) will be given to slightly confident, and scores of (2) will be given to confident. and scores of (3) will be given to very confident the higher score indicates higher confidence.

## II. Methods

### The study will be accomplished as follows:

1. Approval from Ethical committee, Faculty of Nursing, Alexandria University was obtained.
2. An official letter was sent from the Faculty of Nursing, Alexandria University to the responsible authorities of the selected setting to obtain their approval to collect the data after explanation of the aim of the study.

3. Tool I was developed by the researchers based on review of the recent literature (Tocu.2018).
4. Tool II will be developed by the researcher based on review of the recent literature (Tocu.2018).
5. The reliability of the study tools was ascertained by measuring the internal consistency of their items using the Cronbach alpha coefficient test. The reliability of tool II was 0.944.
6. A pilot study will be conducted on (10) patients (10%) of the subjects who fulfilling the inclusion criteria for testing clarity, feasibility and applicability of the developed tools, and necessary modifications was done. Those patients were excluded from the actual study sample.
7. Every patient diagnosed with stroke was interviewed on individual base using the developed tool to assess his/her self-efficacy during recovery period. The tool was filled by the researcher.
8. Patients were interviewed in the waiting room of the stroke center from 10 to 15 minutes, either before or after medical examination and after explaining of the aim of the study to collect the needed data related to patients' self-efficacy during recovery period.
9. Data collection started at the beginning of May 2018 and ended of January 2019.

### Ethical considerations

For each recruited subject, the following issues were considered:

- Securing the subject's written informed consent after explanation of research purpose.
- Assuring confidentiality of the subject's data.
- Anonymity of the study participants was assured.
- Right of the subjects to voluntary participation of the study were assured
- Right to withdraw at any time.

### Statistical analysis of the data

- After data were collected, they were coded and transferred into specially designed formats, so be suitable for computer feeding. Verification processes were carried out to avoid any errors during data entry.
- Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp)
- Qualitative data were described using number and percent.
- The Kolmogorov-Smirnov test was used to verify the normality of distribution Quantitative data were described using range (minimum and maximum), mean, standard deviation.
- Significance of the obtained results was judged at the 5% level.
- The used tests were:

**Chi-square test:** For categorical variables, to compare between different groups

### **Results:**

Table (1) shows that 46%, 58%,58% of the studied patients were in age group (40 > 50), the person who care with them were their spouses and suffering from hemiplegia spontaneously. Additionally, 80% of patients had not chronic disease. Also 60% of the studied patients were females.

Table (2) illustrates that 64% of the studied patients were confident regarding walk inside house to do most things want, walk safely outside on any surface, cope with the frustration of not being able to do because of stroke and continue to do most of the things patients liked to do pre stroke. While 58% of them were slightly confident in relation to getting comfortable in bed every night, getting out of bed on own even when patients feel tired, using both hands for eating food, and dressing and undressing even when feel tired. Moreover, 100% were slightly confident considering keep getting faster at the tasks that have been slow since stroke.

Table (3) reveals that there are a statistical significant differences (0.005, 0.001, 0.001, 0.001) between the patients' self-efficacy and their gender, living condition, caregivers, and the type of stroke respectively.

Table (4) reveals that Kruskal–Wallis Test reveals that stroke patients who are within 40 > 50 years' age group, with secondary degree of education, and have been affected by other chronic diseases, have a better stroke self-efficacy than that of other groups. Table 5 also shows that there is a statistically significant difference in patients' stroke self-efficacy who have been affected by chronic diseases than other group (U=572.0, p-value = 0.027). However, there is no a statistically significant difference in patients' stroke self-efficacy among the educational level groups (U = 0.500, p-value = 0.225).

This table shows that Mann–Whitney test indicates that female patients have a better stroke self-efficacy than that of male patients. However, there is no a statistically significant difference in patients' stroke self-efficacy between the gender groups (U = 990.0, p-value = 0.097). On the other hand, stroke patients who live with spouses have a better stroke self-efficacy than that of patients who live with family. A statistically significant difference in patients' stroke self-efficacy between the living condition groups (U = 740.0, p-value = <0.001) was verified. Moreover, patients who were suffered from weakness have a better stroke self-efficacy than that of patients who were suffered from hemiplegia. However, there is no a statistically significant difference in patients' stroke self-efficacy between the stroke type groups (U = 0.0, p-value = <0.001).

**Table (1):** distribution of the studied patients according to Socio-demographic data & clinical data

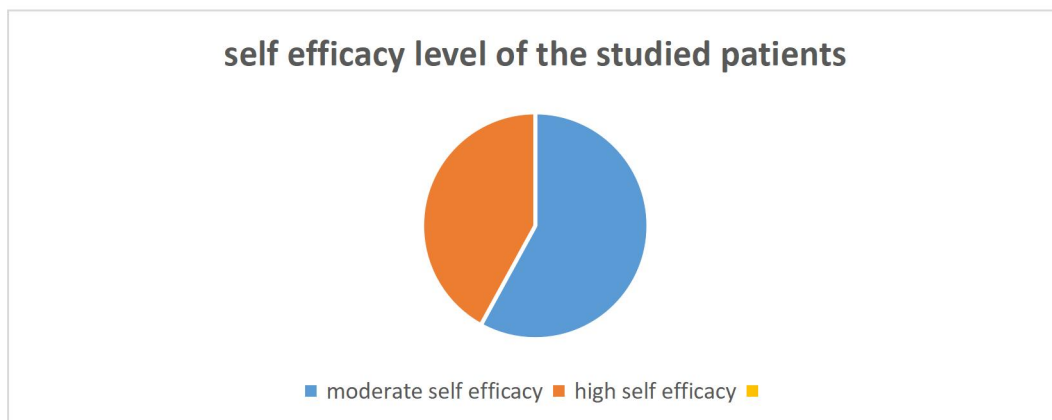
| Q | Patients Socio-demographic data | No. | %     |
|---|---------------------------------|-----|-------|
| 1 | <b>Age (years)</b>              |     |       |
|   | 30 > 40                         | 30  | 30.0  |
|   | 40 > 50                         | 46  | 46.0  |
|   | 50 ≥ 60                         | 24  | 24.0  |
| 2 | <b>Gender</b>                   |     |       |
|   | Male                            | 40  | 40.0  |
|   | Female                          | 60  | 60.0  |
| 3 | <b>Marital Status</b>           |     |       |
|   | Married                         | 100 | 100.0 |
| 4 | <b>Chronic disease</b>          |     |       |
|   | Yes                             | 20  | 20.0  |
|   | No                              | 80  | 80.0  |
| 5 | <b>Educational level</b>        |     |       |
|   | Primary                         | 14  | 14.0  |
|   | Secondary                       | 86  | 86.0  |
| 6 | <b>Living conditions</b>        |     |       |
|   | Living with spouses             | 50  | 50.0  |
|   | Living with family              | 50  | 50.0  |
| 7 | <b>Caregiving</b>               |     |       |
|   | Spouses                         | 58  | 58.0  |
|   | Spouses and children            | 42  | 42.0  |
| 8 | <b>Type of stroke</b>           |     |       |
|   | Hemiplegia                      | 58  | 58.0  |
|   | Weakness                        | 42  | 42.0  |

**Table (2):** Distribution of the studied cases according to The Stroke Self-Efficacy Questionnaire (SSEQ)

| Stroke Self-Efficacy  | Not at all confident |      | Slightly Confident |       | Confident |      | Very confident |       |
|---|----------------------|------|--------------------|-------|-----------|------|----------------|-------|
|   | No.                  | %    | No.                | %     | No.       | %    | No.            | %     |
| 1.Get comfortable in bed every night                                  | 0                    | 0.0  | 58                 | 58.0  | 42        | 42.0 | 0              | 0.0   |
| 2.Get out of bed when feel tired                                      | 0                    | 0.0  | 58                 | 58.0  | 0         | 0.0  | 42             | 42.0  |
| 3.Walk a few steps on any surface inside house.                       | 58                   | 58.0 | 0                  | 0.0   | 6         | 6.0  | 36             | 36.0  |
| 4.Walk in house to do most things want.                               | 0                    | 0.0  | 0                  | 0.0   | 64        | 64.0 | 36             | 36.0  |
| 5.Walk safely outside alone   | 0                    | 0.0  | 0                  | 0.0   | 64        | 64.0 | 36             | 36.0  |
| 6.Use both hands for eating food.                                     | 0                    | 0.0  | 58                 | 58.0  | 36        | 36.0 | 6              | 6.0   |
| 7.Dress and undress even when feel tired.                             | 0                    | 0.0  | 58                 | 58.0  | 20        | 20.0 | 22             | 22.0  |
| 8.Prepare a meal.   | 0                    | 0.0  | 20                 | 20.0  | 58        | 58.0 | 22             | 22.0  |
| 9.Persevere to make progress after discharge from therapy.            | 0                    | 0.0  | 0                  | 0.0   | 0         | 0.0  | 100            | 100.0 |
| 10.Do own exercise program every day.                                 | 0                    | 0.0  | 0                  | 0.0   | 0         | 0.0  | 100            | 100.0 |
| 11.Cope with the frustration because of stroke.                       | 0                    | 0.0  | 0                  | 0.0   | 64        | 64.0 | 36             | 36.0  |
| 12.Continue to do most of the things as pre stroke.                   | 0                    | 0.0  | 36                 | 36.0  | 64        | 64.0 | 0              | 0.0   |
| 13.Keep getting faster at the tasks that have been slow since stroke. | 0                    | 0.0  | 100                | 100.0 | 0         | 0.0  | 0              | 0.0   |

**Figure 1:** Distribution of the studied patients according to level of The Stroke Self-Efficacy Questionnaire (SSEQ) (n = 100)

The figure reveals that 58% of the studied patients had moderate self-efficacy.

**Table (3):** Relation between the studied patients' stroke self-efficacy level and their Socio-demographic data (n = 100)

| Patients Socio-demographic data | The Stroke Self-Efficacy Questionnaire (SSEQ) |       |                             |       | $\chi^2$ | P $\chi$          |
|---------------------------------|---|-------|-----------------------------|-------|----------|-------------------|
|                                 | Moderate self-efficacy (n = 58)               |       | High self-efficacy (n = 42) |       |          |                   |
|                                 | No.   | %     | No.                         | %     |          |                   |
| <b>Age (years)</b>              |   |       |                             |       |          |                   |
| 30 -40                          | 16  | 27.6  | 14                          | 33.3  | 1.049    | 0.592             |
| 40 - 50                         | 26  | 44.8  | 20                          | 47.6  |          |                   |
| 50 $\geq$ 60                    | 16  | 27.6  | 8                           | 19.0  |          |                   |
| <b>Gender</b>                   |   |       |                             |       | 7.909*   | <b>0.005*</b>     |
| Male                            | 30  | 51.7  | 10                          | 23.8  |          |                   |
| Female                          | 28  | 48.3  | 32                          | 76.2  |          |                   |
| <b>Marital Status</b>           |   |       |                             |       | –        | –                 |
| Married                         | 58  | 100.0 | 42                          | 100.0 |          |                   |
| <b>Chronic disease</b>          |   |       |                             |       | 1.478    | 0.224             |
| Yes                             | 44  | 75.9  | 36                          | 85.7  |          |                   |
| No                              | 14  | 24.1  | 6                           | 14.3  |          |                   |
| <b>Educational level</b>        |   |       |                             |       | 0.005    | 0.944             |
| Primary                         | 8   | 13.8  | 6                           | 14.3  |          |                   |
| Secondary                       | 50  | 86.2  | 36                          | 85.7  |          |                   |
| <b>Living conditions</b>        |   |       |                             |       | 13.300*  | <b>&lt;0.001*</b> |
| Living with spouses             | 20  | 34.5  | 30                          | 71.4  |          |                   |
| Living with family              | 38  | 65.5  | 12                          | 28.6  |          |                   |
| <b>Caregivers</b>               |   |       |                             |       | 100.00*  | <b>&lt;0.001*</b> |
| Spouses                         | 58  | 100.0 | 0                           | 0.0   |          |                   |
| Spouses and children            | 0   | 0.0   | 42                          | 100.0 |          |                   |
| <b>Type of stroke</b>           |   |       |                             |       | 100.00*  | <b>&lt;0.001*</b> |
| Hemiplegia                      | 58  | 100.0 | 0                           | 0.0   |          |                   |
| Weakness                        | 0   | 0.0   | 42                          | 100.0 |          |                   |

$\chi^2$ : Chi square test

\*: Statistically significant at  $p \leq 0.05$

**Table (4):** Differences in Stroke Self-Efficacy among two or three level variables of sociodemographic data (n = 100)

| Patients Socio-demographic data | N  | The Stroke Self-Efficacy Questionnaire (SSEQ)<br>Mean rank | Test of sig. | p       |
|---------------------------------|----|--|--------------|---------|
| <b>Age (years)</b>              |    |  | df=2         |         |
| 30 > 40                         | 30 | 50.50  |              |         |
| 40 > 50                         | 46 | 54.54  | H= 3.288     | 0.193   |
| 50 ≥ 60                         | 24 | 42.75  |              |         |
| <b>Gender</b>                   |    |  |              |         |
| Male                            | 40 | 1810.0   |              |         |
| Female                          | 60 | 3240.0   | U= 990.0     | 0.097   |
| <b>Chronic disease</b>          |    |  |              |         |
| Yes                             | 20 | 782.0  |              |         |
| No                              | 80 | 4268.0   | U= 572.0*    | 0.027*  |
| <b>Educational level</b>        |    |  |              |         |
| Primary                         | 14 | 43.21  |              |         |
| Secondary                       | 86 | 51.69  | U= 500.0     | 0.255   |
| <b>Living conditions</b>        |    |  |              |         |
| Living with spouses             | 50 | 60.70  |              |         |
| Living with family              | 50 | 40.30  | U=740.0*     | <0.001* |
| <b>Caregiving</b>               |    |  |              |         |
| Spouses                         | 58 | 29.50  |              |         |
| Spouses and children            | 42 | 79.50  | U=0.0*       | <0.001* |
| <b>Type of stroke</b>           |    |  |              |         |
| Hemiplegia                      | 58 | 29.50  |              |         |
| Weakness                        | 42 | 79.50  | U=0.0*       | <0.001* |

U: Mann Whitney test

H: H for Kruskal Wallis test

\*: Statistically significant at  $p \leq 0.05$

## Discussion:

Stroke is a global public health issue. In addition to its high mortality rate, it has a high morbidity rate and is the most debilitating of neurological illnesses. Most stroke survivors have physical, perceptual, cognitive, and psychosocial problems that influence not only the individual, but also one's ability to participate in ADL and social activities (Makhoul, Pinto, Mazzini, Winstein, & Torriani-Pasin, 2019). The evidence suggests that examining a patient's self-efficacy can predict functional independence in patients with chronic illnesses like stroke. Unfortunately, few scientific studies have looked into self-efficacy in a Middle Eastern stroke population, which justifies this study, which aims to gain a more comprehensive, clinically relevant understanding of self-efficacy during the recovery phase among stroke patients.

Regarding sociodemographic data, the current results showed that nearly half of stroke

patients were in the age group (40 > 50). From the point of view of researchers, this may be related to the effect of the early appearance of the aging process, increased stressors of life, poverty, low income, and increased consumption of fast food. On the other hand, increased electronic media and sedentary lifestyle have also role in it. All of these factors play a critical role in the appearance of stroke in young adults than in the elderly. This finding was in line with Makhoul, Pinto, Mazzini, Winstein, & Torriani-Pasin, (2019) who reported that the mean age of the research sample was 52.2 ( $\pm 13.5$ ) years. While it was contradicted with Roy- Reilly & McCullough, (2018; Lo, Chang, & Chau, (2018) ) who mentioned that stroke is a disease of aging – most strokes occur in people  $\geq 65$  years, also, aging is the strongest non-modifiable risk factor of stroke and aged stroke patients have higher mortality and morbidity and poorer functional recovery than their young counterparts.

Furthermore, the current study showed that nearly two-thirds of the studied patients were



females which are another risk factor due to menopause. This finding was matched with Madsen & et al. (2019) who found that more than half of his sample were women also stated that " In some studies, stroke incidence among women surpasses that of men, in addition to the incidence of stroke was significantly decreased among men not women. Moreover, Ekker, & et al (2019) mentioned that incidence of any stroke in the young increases with age in patients over 35, and is higher in women than men. These may be referred to as women who have several unique stroke risks, including oral contraceptive pill use, pregnancy, menopause, and hormonal replacement therapy. Moreover; Rahbar, et al. (2019) stated that although aging is postulated as an explanation for the increased rates of stroke over time, about one-fourth of ischemic strokes occur in working-age individuals with high incomes, and new strokes strike an estimated 3.6 million young people each year. There is also evidence suggesting that stroke may occur at a younger age in Low incomes as compared to high incomes.

**In relation to the stroke self-efficacy of the studied patients;** the present study illustrated that nearly than two-thirds of the studied patients were **confident** regarding walking inside house to do most things, walk safely outside on any surface, cope with the frustration of not being able to do some things because of stroke and continue to do most of the things patients liked to do pre stroke. These results were in line with Topçu, & Oğuz, (2018) who report in their study that " Jones and Riazi analyzed 22 studies in which they found a person's self-efficacy has positive in relation to daily activities, and physical functions post a stroke".

This result may be referred to as stroke patients' willingness and readiness to be better and their need to return to normal physical condition as much as possible. Also, it may be related to the increased hope and optimism of those patients. This result can help the nurse to develop a rehabilitation plans for those patients to improve their functional abilities at the same time they are sure that patients can apply and achieve short and long- term goals of this plan. The greater one's self-efficacy conviction, the higher one's self-goals, and the greater one's commitment to attaining them, even in the face

of adversity. A poor feeling of self-efficacy, on the other hand, is linked to despair, anxiety, and helplessness, and a lack of self-efficacy can entirely deplete one's motivating capacity.

Additionally, the present study clarified that more than half of stroke patients were slightly confident in relation to getting themselves comfortable in bed every night, getting out of bed on his own even when feel tired, using both hands for eating food and dressing and undressing even when feel tired. These results showed that patients were not ready to cope with activities need more effort or use of affected parts. it may be important points for nurses which should be considered in their rehabilitation plan to overcome it and to develop interventions to increase those patients' self-efficacy related to these activities. From point of view of the researchers, it may be related to fatigue level, type of stroke and affected parts.

Moreover, Korpershoek, van der Bijl, & Hafsteinsdóttir, (2011) mentioned that fall self-efficacy was described to ADL tasks which included dressing, taking a shower, toileting, walking in the neighborhood and household, and walking upstairs, without falling. Physical functioning, exercise behavior, and motivation were influenced by fatigue which was mated with current results. Also mentioned that fatigue severity was correlated with fall. Patients with elevated fatigue severity had a poor fall.

Concerning, **the level of The stroke self-efficacy of the studied patients**, it is well documented in the relevant rehabilitation nursing literature that high-level self-efficacy of patients with stroke is connected with high-quality ADL functioning. Conversely, low self-efficacy in stroke patients may decrease quality of life (Korpershoe et al., 2011). An unfortunate finding presented in Figure 1 shows that more than half of this research subjects were classified as having moderate stroke self-efficacy, reflecting moderate functional independence. One way to explain this finding is the lack of holistic nursing care intervention, where nurses overlook the psycho-social aspects of a care plan. To improve this level to be high, nurses need to value the self-efficacy-based intervention and

its positive impact on improving stroke patient's functional capacity in terms of ADL and health-related quality of life. This finding may be related to the impaired physical condition and low functional abilities of those patients which absolutely affect their confidence of them.

These results were contradicted with the findings of AL-Fayyadh, (2019) who found that a low percentage of the research subjects were classified as moderate self-efficacy while the highest percentage was low self-efficacy. Also, he reported that All the previously mentioned over-whelming stroke-related consequences can cause a substantial deterioration in the perceived client's life quality, to the extent that patients could lose confidence in their potential and believe that they would not sustain a productive and meaningful life

**Regarding relation between the stroke self-efficacy of the studied patients and their Socio-demographic data**, the result revealed that there are a statistical significant differences between the patients' self-efficacy and their gender and type of stroke, it may be referred to gender - associated factors that can affect the self-efficacy as lose of work that is a basic factor for men confidence because of financial responsibility of home. On the other hand, women lose their ability to be housewives and to perform home activities like cleaning, cooking, and lifting. In relation to the type of stroke, it may be referred to a level of disability, level of fatigue stroke type -related consequences which can affect their self-efficacy level differently. These results were in contrast with (AL-Fayyadh, 2019) who found that there is no statistically significant difference in patients' stroke self-efficacy between the gender groups. Also, he mentioned that there is no statistically significant difference in patients' stroke self-efficacy related to the type of stroke.

Finding the differences in stroke self-efficacy among some important variables was one of the study's main goals. When developing stroke-related self-efficacy therapies, highlighting these statistical disparities would be very helpful from a therapeutic standpoint. Between individuals'

age, level of education, living condition, and presence of any chronic diseases, a statistically significant difference in stroke self-efficacy was found. current results showed that stroke patients who are within 40 > 50 years' age group have a better stroke self-efficacy than that of other groups. It may be related to the effect of young age on physical conditions which motivate those patients to be better and increase their readiness to be healthier to can return to usual life.

These results come in line with (AL-Fayyadh, 2019) who found that stroke patients who are within 40–49 years' age group have a better stroke self-efficacy than that of other groups. AL-Fayyadh mentioned that such findings can be best explained by the clinical fact that even minor strokes in senior person may lead to significant multisystem deficits, including cognitive, locomotive and sensory deficits. Which may influence stroke patients goal attainment, outcome expectations and most importantly their self-efficacy.

As well; present findings show that female patients have a better stroke self-efficacy than that of male patients which come in line with results of (AL-Fayyadh, 2019), such results may be explained by multirole of women; women play role of mother, worker, cooker, and teacher which is strong motivator to have better self-efficacy. Furthermore; those patients who live with spouses have a better stroke self-efficacy than that of patients who live with family that is may be justified as wives became emptied for caring husbands only. Additionally; current result highlighted that patients who were suffered from weakness have a better stroke self-efficacy than that of patients who were suffered from hemiplegia which explain the effect of physical condition on self-efficacy and patients who have minor physical impairment have better self-efficacy than others who have major impairment.

It is crucial to remember that stroke patients are highly vulnerable since they must deal with their health issues alone, unless a specially trained caring hand assists them in adopting a more optimistic outlook toward their illness and a smooth transition to a quick and complete recovery. Since nurses are important players in the public health, they play a crucial

role in easing transitions. Through their advanced communication skills, nurses,"(empower) the process of recovery through collaborative and meaningful integration of psychosocial needs, as well as physical functioning during the course of rehabilitation goal setting," and they "represent the core of the stroke interdisciplinary rehabilitation team."

### Conclusion:

Based on the finding of the current study; it can be concluded that more than half of the studied patients had a moderate level of stroke self-efficacy and there was a significant difference between patients' stroke self-efficacy level and gender and type of stroke. Also results revealed that stroke female patients who are within 40 > 50 years' age group and live with spouses no other family members and who had weakness, have a better stroke self-efficacy than that of other groups. This result can help the nurse to develop a rehabilitation plans for those patients to improve their functional abilities at the same time they sure that patients can apply and achieve short and long- term goals of this plan. Because of The greater one's self-efficacy conviction, the higher one's self-goals and the greater one's commitment to attaining them, even in the face of adversity. A poor feeling of self-efficacy, on the other hand, is linked to despair, anxiety, and helplessness, and a lack of self-efficacy can entirely deplete one's motivating capacity.

### Recommendations:

Upon the completion of this study, the following recommendations are suggested:

- Nurses should pay more attention to the psychosocial aspects of health of stroke patients especially self-efficacy evaluation.
- Nurses need to value the self-efficacy-based intervention and its positive impact on improving stroke patient's functional capacity in terms of ADL and health-related quality of life.
- Replication of the study on large non probability sampling.

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