

## Biopsychosocial Needs among Patients with Hemiplegia

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### Abstract

**Background:** Hemiplegia is defined as the paralysis of one side of the body. It is caused by disease or injury to the opposite hemisphere of the brain. People with hemiplegia often display difficulties in mobility, cardiopulmonary function, and sensory functioning. These difficulties affect their activities in daily living and thus have a negative impact on the quality of their life. **Aim of the study:** assess the biopsychosocial needs of patient with hemiplegia. **Research design:** exploratory descriptive design was utilized to meet the aim of this study. **Setting:** this study conducted at special medicine unit (neurology) and outpatient clinic at Fayoum university hospital. **Subjects:** A Purposive sample includes 100 patients. **Tools of data collection:** patient's assessment tool; **Part 1:** Socio-demographic data. **Part 2:** Past medical history of patients under study. **Part 3:** Biopsychosocial needs assessment. **A)** Physical needs assessment include **I.** systemic assessment; **II.** assessment of the daily living activities using barthel index scale. **B)** Psychological needs assessment. **C)** Social needs assessment. **Results:** the study showed that the common systemic need among studied patients were nervous system disorder with 61%, rest and sleep alteration with 56% followed by integumentary alteration with 38%, among the patients under study. Regarding performance of activity of daily living it was found that 30% of patient's under study had severe dependency. Regarding psychological needs it was found that 84% of patient's under study had severe anxiety. **Conclusion:** this study concluded that about third of patient's under study had moderate level of social needs. **Recommendation:** the study recommended that supportive care services in any hospital care setting should be directed towards meeting biopsychosocial needs of patients with hemiplegia.

**Keywords:** Biopsychosocial, Hemiplegia, Activity of daily living.

### Introduction

Hemiplegia is defined as the paralysis of one side of the body. It is caused by disease or injury to the opposite hemisphere of the brain. People with hemiplegia often display difficulties in mobility, cardiopulmonary function, and sensory functioning. These difficulties affect their activities in daily living and thus have a negative impact on the quality of their life (*Sharma and Wong, 2021*).

The main cause of hemiplegia is cerebrovascular attack (CVA) or stroke. Stroke is the third main cause of the death & disability in Egypt. According to world health organization; from the total world's

population, nearly 18.6 had severe disability and 79.7 million had moderate long term disability. From all the disabilities, hemiplegia is one of the crippling disorders in our society (*Yadav, et al., 2018*).

Other causes of hemiplegia include spinal cord injury, specifically traumatic brain injury, or disease affecting the brain. Features other than weakness include decreased movement control, clonus (a series of involuntary rapid muscle contractions), spasticity, exaggerated deep tendon reflexes and decreased endurance (*Handelzalts, et al., 2019*).

Problems and difficulties related to hemiplegia are sensorimotor deficit (numbness, tingling, anosognosia, apraxia, loss of proprioception and stereognosis, loss of strength and power), unilateral neglect, activities of daily living, mental barriers (dementia, depression, and anxiety), speech difficulties (aphasia, dysarthria), abnormal tone (spasticity/flaccidity), and inability of social participation, cognitive difficulties (attention, learning, planning), difficulties in mobility, cardiopulmonary dysfunction, loss of independency, visual neglect, loss of vision or diplopia, incoordination that results in ataxia, gait difficulties (*Yadav, et al., 2018*).

Other problem related to hemiplegia is balance difficulties, abnormal reflexes, postural difficulties, swallowing problems (dysphagia), emotional deficit (irritability, frustrateon), bladder and bowel difficulties. The frequency of aphasia resulting from CVA has been reported in the literature to vary between 21-38%. People with hemiplegia are limited physically in their daily activities. This limitation affects their social well-being & thus can lead to depression (*Simmons, 2021*).

It is important to handle the three biopsychosocial needs together as a whole. Empirical literature suggests that the patients' perceptions of health, threat of the disease and barriers in the patient's social or culture environment influence the likelihood of the patient's engaging in health-promoting or treatment behaviors, such as medication taking, engaging in physical activity and proper diet or nutrition (*Williams, et al., 2019*).

Physiological needs, the most basic in the hierarchy of needs, are the most essential to life and therefore have the highest priority. Physiological need such as oxygen, water, food, temperature, elimination, sexuality, physical activity and rest to meet at least minimally to maintain life physiological

needs are often a major part of nursing care plan for disabled and ill people who require assistance in meeting those (*Fallatah and Syed, 2018*).

Psychological and social problems for patient with hemiplegia including depression and other emotional problems; lack of information or skills needed to manage the illness; disruption in work and family life cause additional suffering, weakened adherence to prescribe treatment and threatened patients to return to health (*Perna and Harik, 2020*).

### **Significance of the Study**

According to the World Health Organization over a billion people live with some form of disability. Between 110 million and 190 million adults have significant difficulties in functioning; hemiplegia is one of the more common disabling conditions. In year 2006, Egyptian census determined that around 1.4 million Egyptians have disabilities (*World health organization, 2020*).

Biopsychosocial assessment is comprehensive evaluation of an individual patient's physical, psychological and social. So assessment of biopsychosocial need is an important step to identify anticipating problems that facing patients with hemiplegia, creating a health care plan and facilitate recovery that is crucial to assess biopsychosocial needs for this patient.

### **Aim of the Study**

**The study aims to assess the biopsychosocial needs of patient with hemiplegia through:**

- Assessing their physical needs among patient under study.
- Assessing their psychological needs among patient under study.
- Assessing their social needs among patient under study.

**Research question:**

The current study will answer the following questions:

- What are physical needs of patients with hemiplegia?
- What are psychological needs of patients with hemiplegia?
- What are social needs of patients with hemiplegia?

**1-Technical design:**

The technical design includes research design, setting, subjects and tools for data collection.

**Setting:**

This study conducted at the special medicine unit (neurology) and outpatient clinic at Fayoum university hospital with bed capacity 14 beds. These units receive patients with stroke, multiple sclerosis and systemic lupus. Patients with hemiplegia considered the majority rate inside the department.

**Research design:**

Exploratory descriptive design is a type of research design that aims to obtain information to systematically describe a phenomenon, situation, or population. It was utilized to meet the aim of this study.

**Subjects:**

Purposive sample include 100 patients at neurology unit and outpatient clinic in the previous mentioned settings within period of six months and met the inclusion criteria were recruited in the study sample.

**Inclusion criteria include the following;**

- Adult patients confirmed diagnosis with hemiplegia.
- Patients were from both genders (male & female).
- Patients were free from psychiatric disorders.
- Maximum one year duration were diagnosis with hemiplegia.

**Tool of data collection and techniques:**

Data will be collected using the following tools:

**Tool (I): Patient's assessment tool:** It was designed by the investigator to assess needs of patients with hemiplegia based on related and recent literature review.

**It includes the following parts:**

**Part (1):** concerned with socio-demographic data include (age, gender, marital status, level of education, occupation, family member, residency, home ventilation and monthly income).

**Part (2):** concerned with past medical history of patients under study (history chronic illness, pervious surgery, pervious hospitalization, smoking, family history of neurological disorders, present medical history, receiving pervious information about the disease problem, duration of hemiplegia, causes of hemiplegia and receiving physiotherapy sessions).

**Part (3):** Biopsychosocial needs assessment:

It includes three categories of patients' needs including:

**A) Physical needs assessment:**

**It includes systemic assessment of patient's through the following section;** general appearance, cardiovascular assessment, respiratory assessment, nervous system assessment, gastrointestinal system assessment, elimination, integumentary system in addition to sleep & rest assessment. Items of systemic assessment include 7 body systems, general appearance (4 items), respiratory system (3 items), cardiac system (4 items), nervous system (7 items), gastrointestinal system (7 items), elimination (5 items), integumentary system (4 items), rest and sleep (4 items). Total is 38 items.

### ❖ Scoring system:

Each system includes many symptoms or disorder, each positive symptom/ disorder scored was given one grade. The total score for each system alteration was scored 1 for (yes) or 2 for (no) if system alterations equal or more than 60% of total system alteration.

**II. Assessment of the daily living activities using barthel index scale.** It is a standardized tool to assess functional status as a measurement of the patient's ability to perform activities of daily living independently; it is adapted from **Liu and Unick, (2015)**

**Barthel Index Scale (BI)** include ten variables describing activities of daily living and mobility are scored, A higher number being a reflection of greater ability to function independently following hospital discharge. Time taken and physical assistance required to perform each item are used in determining the assigned value of each item. The Barthel Index measures the degree of assistance required by an individual on 10 items of mobility and self-care (ADL).

**Total scores of 10 items are classified as following;**

- 0-20 indicates "total" dependency.
- 21-60 indicate "severe" dependency.
- 61-90 indicate "moderate" dependency.
- 91-99 indicates "slight" dependency.

### B) Psychological needs assessment:

It includes assessment of anxiety, depression and stress levels using depression and anxiety stress scale scoring (DASS) among studied patients; it is standardized scale, was adopted from **Gomez, (2013)** and modified based on **(Coker, et al., 2018)**. Each individual is required to indicate the presence of a symptom. Each item is scored from 0 to 3.

### ❖ DASS scoring system:

The scale to which each item belongs is indicated by the letter D (Depression), A (Anxiety), S (Stress). For each scale (D & A and S) sum the scores for identified items.

### ❖ DASS 21 scoring system:

The total score of each item was categorized as following:

	Depression	Anxiety	stress
Normal	0-9	0-6	0-10
Mild	10-12	7-9	11-18
Moderate	13-20	10-14	19-26
Severe	21-42	15-42	26-42

### C) Social needs assessment according to social dysfunction rating scale

It was used to assess social needs among patients under study by using social dysfunction rating scale; it is a standardized scale adopted from **(Kaur, et al., 2019)**. It is a 6 point likert scale ranged from not present to severe, it consist of 21 statement classified under three main readings, self-confidence (4 statements), interpersonal relations system (6 statements), and performance system (11 statements). Translation and retranslation in to Arabic language was done.

### ❖ Scoring system:

Each item was responds from 0-3, classified as the following:

- 0: severe
- 1: moderate
- 2: mild
- 3: no/normal

**The total score (100) is categorized as following:**

- 0- <40: high level of social dysfunction.
- 40- <60: moderate level of social dysfunction.
- 60- <80: mild level of social dysfunction.
- 80- <100: no social dysfunction.

### **Ethical considerations:**

**The ethical research considerations include the following:**

The research approval was obtained from the faculty ethical committee from the faculty of nursing at Ain Shams University before starting the study. The research clarified the objectives and the aim of the study to patients included in the study before starting. Research assured

maintaining anonymity and confidentiality of patient's data to the patient included in the study. Patients were informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time.

### 3- Administrative design:

The necessary approvals were obtained from the hospital director & nursing director of neurology unit & outpatient clinic at Fayoum university hospital. Official letters issued to them from the faculty of nursing at Ain Shams University explaining the aim of the study to obtain the permission for data collection.

### Pilot study:

A pilot study was applied to a group of patients (10% of the sample) to test the applicability of the study tools, clarity of the designed questionnaire, as well as to estimate the time needed to answer it. The patients included in the study are excluded from study sample. Necessary modification was done for the study tools based on result of pilot study. The patients included in the study are excluded from study sample.

### A) Field Work:

- Data collection was done at neurology department & neurology outpatient clinic at Fayoum university hospital.
- Data collection phase carried out within the period from the beginning of September 2020 to the end of March 2021.
- The investigator introduced herself and explained the purpose of the study for the subjects included in the study to obtain their participation consent (oral consent).
- The investigator visited the selected setting three days per week, Sunday, Monday and Wednesday at morning and afternoon shifts in neurology unit & outpatient clinic.
- The investigator met 1-5 patients in every visit. Data collected from studied patients after ensuring that they met the criteria for selection. The time needed for completing patient's assessment tool was about 20-30 minutes.
- Safety measure against corona virus was followed during data collection including; wearing personal protective equipment for

each patient under study, use alcohol after each patients and keeping safety distance at least 1 meter when interviewing the patient.

### 4- Statistical Design:

Data were extracted from the interview questionnaire and computerized in IBM SPSS statistic for windows, version 20.0. Armonk, NY: IBM Corp. Data analyzed was done using a software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variable, and mean and standard deviations for quantitative variables. The statistical analysis was done using the mean, standard deviation, unpaired student t-test and ANOVA test. The **P-value** < **0.05** considered as statistical significant.

### Results:

**Table (1):** illustrates that, the mean age of the studied subject ( $42.51 \pm 6.3$ ). Regarding to Marital status, it was found that 81% of the subject were married; with 37% of study group have 3 family members. Regarding the educational level 35% of study group were can not read/ write, versus 18% of them had highly educated. For occupation, 53% were not working, and 31% had manual work. Regarding monthly income, 77% of patients under study reported that their monthly incomes were not sufficient for their treatment cost, Regarding home criteria, 85% of patients under study exhibited that they were living in a good ventilated home, finally for residence 64 % inhabitant rural areas.

**Table (2):** illustrates that, history of chronic illness, it was found that 61% of the studied patients had hypertension. Regarding pervious surgery, the result showed that 90% of the studied patients hadn't any pervious surgery. In addition, 64% of patients hadn't any pervious hospitalization related to neurology disorder. Regarding smoking, this study showed that 47% of the study subjects were smokers. While 10% of them had a family history of stroke and also 7% of them had a family history of brain inflammation. Regarding present history, it was found that 81% of studied patients had received pervious information related to hemiplegia,

81% of them received information from physician, the result showed that 52% of the study subjects had stroke and 14% of them had hypertension. The result showed that 73% of the studied patients receive physiotherapy.

**Figure 1:** illustrates that, the total scores for the systemic needs of patients under study, it was found that total of patient numbers under study had nervous problem was 61%, while total of patients number had a problem in rest and sleep was 56%, In addition, the total of patient numbers had integumentary problem was 38% of studied patients.

**Figure (2):** illustrates that, the total scores for the daily living activity of patients, it was found that 49% of patients of them had moderate dependency, 30% of them had severe dependency, while 20% of them had slight dependency and only 1% of them had total dependency.

**Figure (3):** illustrates that, the total score for the psychological needs of patients under study; this figure shows that, 47% of patients under study had moderate depression degree and 35% of them had severe depression. Regarding anxiety level, 84% of patients under study had severe anxiety degree, while 12% of them had moderate anxiety and only 2% of them had mild degree. Regarding stress level,

20% of patients under study had mild degree of stress, while 15% of them had severe degree of stress.

**Figure (4):** illustrates that, the total social dysfunction among patients under study the results revealed that 31% of patients under study had no social dysfunction, while 29% of them had moderate social dysfunction and 25% of them had mild social dysfunction, while only 15% had severe social dysfunction.

**Table (3):** This table demonstrated that illustrates that there was highly statistically significant relationship between patients social dysfunction with their gender and occupational status when p-value was  $<0.001$ , while there were no statistically significant relations between patient's age, residence, educational level, marital status, monthly income and their social needs at p-value =  $>0.05$ .

**Table (4):** This table demonstrated that illustrates that there was highly statistically positive significant correlations between psychological alteration and total systemic alteration and social dysfunction at  $p < 0.001$  among patients under study, while there were show highly statistically negative significant correlation between psychological needs and their total performance of daily living activities among patients under study.

**Table (1):** Number and percentage distribution of patients under study according to their socio-demographic characteristics (N=100).

Sociodemographic data	N	%
<b>Age (years)</b>		
• 20 - < 40 years	11	11
• 40 - < 60 years	31	31
• ≥ 60 years	58	58
• Mean±SD	42.51±6.3	
<b>Gender</b>		
• Male	60	60
• Female	40	40
<b>Residence</b>		
• Urban	36	36
• Rural	64	64
<b>Occupational status</b>		
• No work\ House wife	53	53
• Manual work	31	31
• Sedentary work	16	16
<b>Educational Level</b>		
• Cannot read and write	35	35
• Basic education	13	13
• Moderate education	36	36

**Table (1):** (cont.) Number and percentage distribution of patients under study according to their socio-demographic characteristics (N=100).

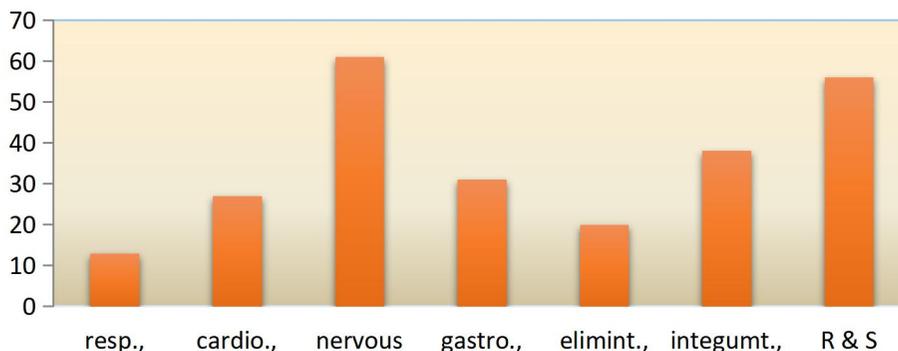
• High education	16	16
<b>Marital status</b>		
• Married	81	81
• Single	19	19
<b>Family members No</b>		
• 2 members	13	16.0
• 3 members	37	45.7
• More than 3 members	31	38.3
<b>Home ventilation according to patient perception</b>		
• Good	85	85
• Bad	15	15
<b>Monthly income according to patient perception</b>		
• Enough	23	23
• Not enough	77	77

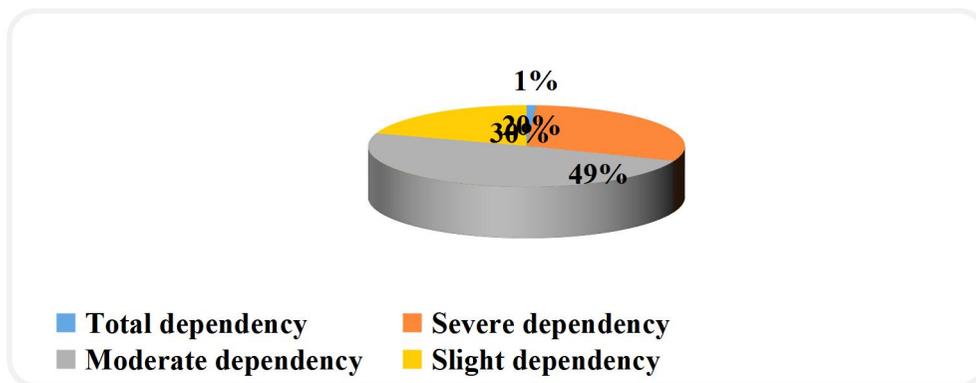
**Table (2):** Number and percentage distribution of patients under study according to their medical data (N= 100).

Item	N	%
<b>Past medical history</b>		
<b>History of chronic illness</b>		
• Hypertension	61	61
• Diabetes mellitus	39	39
• Heart diseases	10	10
• Respiratory diseases	9	9
• Stroke	22	22
• Brain injuries	7	7
• Brain inflammations	9	9
<b>Pervious surgery</b>		
• Yes	10	10
• No	90	90
<b>Pervious hospitalization related to neurological disorder\ stroke</b>		
• Yes	36	36
• No	64	64
<b>Smoking</b>		
• Yes	47	47
• No	53	53
<b>Family History</b>		
<b>Family history of neurological disease</b>		
• Stroke	10	10
• Brain injuries	2	2
• Brain inflammations	7	7
• Hemiplegia / quadriplegia	4	4

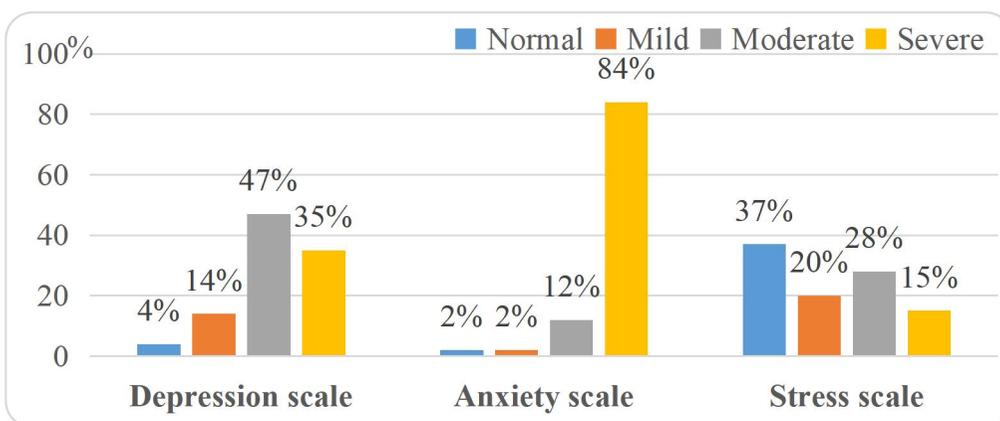
**Table (2):** (cont.) Number and percentage distribution of patients under study according to their medical data (N= 100)

Item	N	%
<b>Present medical history</b>		
<b>Receiving pervious information related to hemiplegia</b>		
• Yes	81	81
• No	19	19
<b>If (Yes): source of information</b>		
• Physician	81	81
• Nurse	22	22
• Internet / media	32	32
• T.V. Programs	17	17
<b>Duration of hemiplegia (months)</b>		
• Mean±SD	6.03±3.84	
<b>Causes of hemiplegia as patient's report</b>		
• Stroke	52	52
• Hypertension	14	14
• Brain inflammation	10	9
• Brain hemorrhage	9	4
• Heart disease	5	10
• Brain injury	4	5
• Unknown	1	1
<b>Receiving physiotherapy or exercise by therapist</b>		
• Yes	73	73
• No	27	27
<b>If (Yes) since when (months)</b>		
• Mean±SD	5.12±3.57	
<b>Type of exercise</b>		
• Strength exercise	21	21
• Balance exercise	4	4
• Both of them	48	48

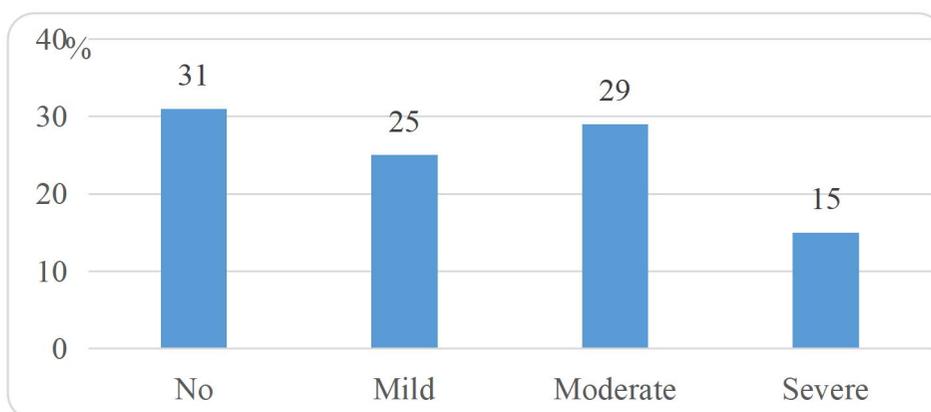
**Figure (1):** The total systemic alterations among patients under study (N=100).



**Figure (2):** Number and percentage distribution of patient under study according to their total performance of daily living activities using barthel index scale (N=100).



**Figure (3):** Total number and percentage distribution of psychological needs among patients under study according to the DASS scale (N=100).



**Figure (4):** Number and percentage distribution of patients under study according to their total social needs using social dysfunction scale (N=100).

**Table (3):** Relation between patients social dysfunction mean scores and their socio-demographic characteristics (N=100)

	Total social dysfunction rating scale			f/ t	Tests P-value
	N	Mean	SD		
<b>Age</b>					
20 < 40 years	11	52.82	9.73		
40 < 60 years	31	48.81	9.70	0.473	0.624 NS
≥ 60 years	58	50.60	13.90		
<b>Gender</b>					
Male	60	47.55	10.46		
Female	40	54.40	13.72	2.828	0.006* S
<b>Residence</b>					
Urban	36	48.31	9.88		
Rural	64	51.41	13.38	1.215	0.227 NS
<b>Occupational status</b>					
No work\ House wife	53	54.62	12.36		
Muscular work	31	44.74	8.33	8.193	<0.001* HS
Sedentary work	16	46.69	13.53		
<b>Education Level</b>					
Illiterate	35	54.26	13.19		
Basic education	13	48.23	11.84		
Moderate education	36	47.08	12.02	2.241	0.088 NS
High education	16	50.50	9.29		
<b>Marital status</b>					
Married	81	50.32	12.65		
Single	19	50.16	10.84	0.052	0.959 NS
<b>Monthly income</b>					
Enough	23	52.13	15.51		
Not enough	77	49.74	11.20	0.818	0.415 NS

**Table (4):** Correlation between total mean score among patients under study between physical alteration (systemic assessment and assessment of activities of daily living), psychological and social alterations

Items	Physical			
	Total systemic assessment		performance of daily living activities	
	r	P-value	r	P-value
Total psychological need by using DASS scale	0.407	<0.001*	-0.740	<0.001*
Total social dysfunction rating scale	0.512	<0.001*	0.560	<0.001*

## Discussion

Socio-demographic characteristics of the patients under the study showed that, more than half of patients under study their age group was equal or more than 60 years with mean age  $42.51 \pm 6.3$  years, more than half of them were male. From the researcher point of view, this result may be due to the age-specific hemiplegia rates are higher in men as some reports found that women are less likely to go for in-hospital interventions and most differences disappear after age although functional outcomes and quality of life after hemiplegia are consistently poorer in women. This result is in congruent with **Wang, et al., (2021)** in a study titled "Clinical efficacy of comprehensive nursing in patients with cerebral hemorrhagic hemiplegia" and reported that more than half of the study their sample aged  $\geq 60$  years old.

**In relation to residence**, the current study result indicated that more than half of patients under study were from rural area, this finding is inconsistent with **Khedr , et al., (2014)**, in a study titled "Prevalence of ischemic and hemorrhagic strokes in Qena Governorate", in which they reported that's more than half of their subjects were from urban area.

**Regarding marital status**, the current study result showed that most of patients under study were married. This might be due to age of the study subjects within marital range according to the Egyptian societal culture. This finding is consistent with the finding of **korkmaz, et al., (2020)** in their study entitled "Sonographic predictors in patients with hemiplegic shoulder pain" in which they revealed that the majority of the studied patients were married.

**Regarding to the educational level**, the result of this study revealed that more than one third of the patients under study had moderate educational level. From the researcher point of view, this result may be due to that the proportion with no qualifications or a school/intermediate certificate were higher among older age groups (and was greater in

women than men), whereas the proportion with a college/university degrees were higher among younger age groups (with far less disparity between women and men). Lower educational status was associated with poorer lifestyle behavior and clinical hemiplegia risk factors.

This finding was inconsistent with **Hu, et al., (2018)**, in their study titled "Relationship between the anxiety/depression and care burden of the major caregiver of stroke patients" and revealed that more than half of their subjects had a high degree of educational level. While, **Chen , et al., (2015)**, in a study entitled "Effect of visual training on cognitive function in stroke patients" as they revealed that less than half of their studied patient were illiterate.

**In relation to occupational status**, the current study showed that more than half of patients under study had no work or housewife. From the researcher point of view, this result may be due to that most of the patient suffer from motor impairments that obstructing the completion of tasks or their participating in some work.

In the same context **Tung, (2021)**, found that half of their subjects were not working. Also, this finding was in consistent with **Rapolienė, et al., (2018)**, in their study entitled "Stroke patients motivation influence on the effectiveness of occupational therapy" and revealed that less than half of his subjects were not working.

**Regarding monthly income and home ventilation of patients under study**, the results revealed that most of them hadn't enough income for treatment according to their own report, while minority of them had enough income for treatment according to their report; this might due to the fact that half of patients were from rural area the low socioeconomic level. This finding is inconsistent with **Naderipor, et al., (2020)**, in a study titled "The effects of family based care program on the health status of hemiplegic patients with stroke" as they mention that most of their patients had enough income for their treatment.

**As regards to the past medical history of patients under study**, it was found that in this study, about two thirds of patients under study had hypertension and nearly less than half of patients under study had previous hospitalization related to stroke or neurological disorder. From the researcher point of view, this result may be due to that the majority of patients under study were suffer from hypertension that lead to many complications which need for hospitalization.

In the same context, **Sujeethasai, et al., (2019)**, reported in a study titled “A Cross Sectional Clinical Analysis of Hemiplegia Related to Diabetes Mellitus and Hypertension” that the most patients under study suffered from hemiplegia had hypertension. Also, **Tung, (2021)** reported in a study titled “Resilience and Daily Activity among Patients after Stroke” that the most studied patients had hypertension.

**Regarding smoking**, the findings of the present study revealed that about less than half of patients under study were smokers. This result is consistent with **Tung, (2021)**; who reported that the majority of patients under study were non-smokers. From the researcher point of view, this result may be due to increase educational level and patient awareness of the risks of smoking and its dangerous impact on their health.

**Regarding family history of neurological disease**, the result revealed that only one tenth of patients under study had family history of stroke, this finding is consistent with **Shao, Zhang, et al., (2018)**, in a study titled “Familial hemiplegic migraine type 3 with an SCN1A gene mutation in a Chinese family” in which they revealed that the majority of the patients under study hadn't family history of neurological disease.

**In relation to receiving information about hemiplegia**, the finding of this study revealed that most of patients under study received instruction related to hemiplegia and most of them reported that the physician are the source of this data. From the researcher point of

view, this result may be due to increase in the level of education and the spread of medical centers and health teams in all parts of the governorate.

This finding was supported by **Saengsuwan, et al., (2017)**, in their study entitled “Knowledge of stroke risk factors and warning signs in patients with recurrent stroke or recurrent transient ischemic attack in Thailand” in which they reported that the majority of studied patients had information about their disease.

**Regarding the current cause of hemiplegia as patients report in the current study**, it was found that most common cause of hemiplegia were stroke. From the researcher point of view, this result may be due to stroke is one of the most common cause of hemiplegia because the stroke causes interrupt in blood supply to brain that preventing brain tissue from getting oxygen and nutrients. Brain cells begin to die in minutes and result hemiplegia.

In the same context, **Ravé, et al., (2019)**, reported in a study titled “Clinical and Etiological Characteristics of Hemiplegia at the University Regional Hospital Center Ouahigouya” that the main cause of hemiplegia is stroke. Also, **Ravichandran, et al., (2019)** reported in a study titled “Systematic review on effectiveness of shoulder taping in hemiplegia” that stroke become most frequent cause of hemiplegia.

**In relation to physiotherapy**, the present study revealed that about more than two thirds of patients under study had received physiotherapy/ exercise by therapist. From the researcher point of view, this result may be due to patients under study suffer from motor impairment and need to physiotherapy to help them to perform activities of daily living.

This result is consistent with **Bordoloi & Deka (2020)** who reported in a study titled “Modified Rood’s approach and ability of independent self-care in hemorrhagic stroke patients” and revealed that the majority of

studied patients had received physiotherapy and this help them to improve their ability to be independent regarding their self-care.

**Regarding total score of daily living activities according to Barthel scale**, the current study revealed that, approximately half of studied patients were able to perform daily living activity with moderate dependency, while less than one third of them had severe dependency of activities of daily living. In addition, twenty percent of the studied patients had slight dependency. From researcher point of view, this result may be due to that the majority of patients with hemiplegia were physically impaired which hinder their ability to perform ADL.

Additionally, **Hormozi, et al., (2019)**, in their study titled "Iranian version of barthel index: validity and reliability in outpatients' elderly" in which they found that the majority of patients under study are at greater risk for physical dependence, also patients with high level of dependency may result in undesirables outcome concerning their quality of life because they rely on help from other.

**Regarding to the social needs assessment according to social dysfunction scale**, the current study revealed that about one third of patients under study had no social dysfunction, while about one fourth of them had mild and moderate social dysfunction. From researcher point of view, this result may be due to the effect of their disease that limit their movement and hinder proper interaction with other community members.

In the same line, **Katzan, et al., (2018)**, in a study titled "The most affected health domains after ischemic stroke" found that the majority of patients under study had a high level of socialization with an effective social role are more socially interactive than patients with a lower level of socialization.

Regarding the relation between demographic characteristics of the studied patients and their social needs, this study

revealed that there were highly statistically significant relations between the social dysfunction and their gender and occupational status. On the other hand, there were no statistically significant relation between social needs and their age, residence, educational level, marital status and monthly income.

From the researcher points of view this result may be due to occupational level is very important for enhancing social needs through work and become more cooperative and communicate with friends. This result is inconsistent with **Erlor, et al., (2019)**, in a study titled "Social support as a predictor of community participation after stroke" as they reported that there was no statistically significant relation between social needs and all demographic characteristics.

Regarding correlation between psychological alteration and their total systemic alterations, performance of daily living activities and total social dysfunction rating scale, there were highly statistically significant negative correlations between psychological need of studied patients and their performance of activities of daily living. Also, there were highly statistically significant positive correlations between psychological need of studied patients and their systemic assessment score and social needs score.

From the researcher point of view this result may be support the importance of the relationship between the patient's psychological state and its effect on the patient's physical and social conditions. Patients with good psychological status were found to interact more with others and to have more ability to perform activity of daily living. **Lin, et al., (2019)**, who conducted a study titled "Effect of social support and health education on depression scale scores of chronic stroke patients", stated that there was a negative correlation between patients psychological needs and their performance of daily living activities and social dysfunction rating scale as well.

## Conclusion

**Based on the findings of the current study, it can be concluded that:**

Overall, this study concluded that, the physiological alterations are the most common among the study subjects as nervous needs and integumentary alteration while, less than half of the subjects had moderate dependency regarding their daily life activity. Regarding the psychological needs, it was found that three quarters of the studied patients had severe anxiety and slightly less than half of them had moderate depression. Also, it was found that about one third of the patients under study had moderate social dysfunction regarding the interpersonal relation, while one third of the study subjects had mild dysfunction regarding self-confidence.

## Recommendations

**Based on the findings of the present study, the following are recommended:**

- Further studies the educational needs of patients with hemiplegia.
- Further studies recommended done to assessing the effect of the biopsychosocial needs on patient's quality of life and outcomes encouraged.
- Simple booklet written in simple Arabic language recommended to developed, and be available for all patients with hemiplegia included all the needed information about them needs and life within their disability.
- Further research studies are needed to focus on studying the factors affecting biopsychosocial needs of patient with hemiplegia.
- Training nurses to provide care for patients with hemiplegia in order to offer nursing care based on their identified needs.
- Continuous assessment of biopsychosocial needs for larger group of patients with hemiplegia is highly recommended.
- Further research studies are needed

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