Impact of Stroke on Life Satisfaction and Psychological Adjustment among Stroke patients during Rehabilitation

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Abstract: A stroke is a sudden and traumatic event that that can have long-lasting physical, emotional and social consequences. The purpose of this research was to assess the impact of stroke on life satisfaction and psychological adjustment of stroke patients during rehabilitation. **Methods:** This study is a descriptive study. The study was conducted at outpatient's stroke rehabilitation clinic affiliated to Ain Shams University Hospitals to 50 post-stroke patients. The data have been collected through structured interviewing questionnaire form, The Barthel ADL Index, The Stroke Rehabilitation Motivation Scale (SRMS), Satisfaction with Life Scale and Mental Adjustment Stroke Scale. **Results:** the mean age of stroke patients was 52.98±8.08. high percent of stroke patients have independent level on daily living activities, more than half of the stroke patients were satisfied with their life, have normal level of motivation, and had a negative attitude toward stroke **conclusion** Physical independence as consequence from stroke have a significant relation on motivation as well as had insignificant relation on life satisfaction and psychological adjustment of stroke patients.

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1. Introduction

Stroke is the most significant global cause of mortality and disability; however in developed countries the primary and secondary prevention of stroke has decreased mortality. The global prevalence of stroke survivors was estimated to be 62 million in 2005 and to project from 67 million to 77 million in year 2015 and 2030 respectively, which increases the demand for rehabilitation **Strong *et al.* (2007).** The number of new strokes in Egypt per year may be around 150 000 to 210 000. **Allah, & Moustafa (2014)**. A National Stroke Association survey of long-term stroke survivors found that 87% had ongoing motor problems, 54% had trouble walking, 52% had trouble with hand movements, and 58%experienced spasticity These continuing disabilities significantly decrease their life satisfaction. **Carlsson *et al.* (2007).** Persons with a stroke often perceive challenges and limitations in everyday life and this in turn has been shown to be related to lower levels of perceived global life satisfaction. **Hartman *et al.* (2007).** Considering that stroke has not treatment, it is necessary for patients that adjusted with self-chronic illness in order to take action their duties and responsibilities These patients are looking for strategies to adjust with the inability to maintain or rebuild sense of coherence and consistency in their life after stroke, **Mouziraji *et al.* (2014).**

Stroke rehabilitation aims to minimize residual impairments and disability thereby improving the patient's ability to function in daily tasks. In addition, rehabilitation supports the patient in adapting to their resulting disability, maximizing their ability to participate in daily activities and social roles. **Hu *et al.* (2010)**. Enhanced patient motivation towards their rehabilitation when clear goals are established prior to treatment, **Marklund *et al.* (2010).**

The provision of feedback is thought to positively influence an individual's motivation to engage within their rehabilitation. Patients felt that this feedback motivated them to achieve their personal best by beating their previous scores, **Ewen *et al.* (2010),** Making an appropriate strategy is an important step in improving life for so many stroke survivors and may affect the success of rehabilitation and minimize the negative effects of recurrent stroke to the strokesufferers, developing strategies to maintain or re-establish a sense of continuity after the disruptive life event that stroke represents using strategies to foster hope during the process of adjusting to life after stroke, **Oswald (2008).**

Significant of the study

It is understandable that a stroke will have a major impact on perceived health and satisfaction with life. Stroke onset is often sudden and traumatic and hit without warning, leaving the person with long-lasting, and for some person's life-lasting difficulties. For persons experiencing stroke, almost every aspect of life changes**.** Stroke is a major cause of disability, about one third of stroke survivors make a complete recovery, another third totally dependent and the

remaining third are left with some residual disability. physical and cognitive impairments, lack of ability to communicate, and/or lack of ability to function socially or sexually, after stroke interfere with an adjustment to the stroke, and interfere with life satisfaction. There is a clear psychological impact for the stroke survivor, with an estimated 20% to 40% of survivors suffering from depression. This has a major impact on motivation for rehabilitation, recovery and life satisfaction in both the short and long term. For stroke patients in order to achieve independence in daily living activities, stroke survivors need extensive rehabilitation work, having to attend long sessions of physiotherapy. The compliance with treatments and therapies is crucial and requires high motivation of the patient. Stroke rehabilitation is a very important part of recovery for many people who have suffered a stroke. The primary goal of rehabilitation is thus to enable the patient to reintegrate into the home and community environment with the highest possible level of functional independence and a good quality of life.

It is assumed that the physiological causes and squeals of stroke are similar with stroke patients all over the world; however the way that stroke patients interpret their disability and appraise life post- stroke could be influenced by their individual culture. In order to provide stroke patients with the best possible care, issues. Psychosocial issues need to be assessed specifically and strategies put in place for both patient and significant others to help prevent deterioration of mood and functional status, isolation from their community and feelings of hopelessness. Therapists also need to be aware of the impact these issues have on physical recovery. It is hoped that an increased awareness of these psychosocial issues will lead to a more holistic management of stroke patients with more attention given to aiding psychosocial adaptation which might lead to higher reported quality of life and life satisfaction. So that this study aiming to study the impact of stroke on the life satisfaction and psychological adjustment of stroke patients during rehabilitation.

Aim of the study

This study is aim to assess impact of stroke on life satisfaction and psychological adjustment of stroke patients during rehabilitation.

Research hypothesis

Stroke lead to negative impact on the life satisfaction and psychological adjustment among stroke patients.

2. Tools of data collection

Research design: descriptive study design.

Setting

This study was conducted at an out patients stroke rehabilitation clinic of Ain Shams University Hospitals.

Sample

The sample of stroke patients was obtained through non-probability purposive sampling technique. A total of 50 post-stroke patients. The post-stroke patients were chosen according to certain criteria; patient diagnosed as "brain stroke" within six month, male & female**,** with age from 30 to 65 years and with mild and moderate complications of stroke such as; impairment of mobility, communication, bowel elimination, swallowing problems.

Pilot study

A pilot study was carried out on 5 stroke patients, in order to test the applicability of tools and clarity of the included questions as well as to estimate the average time needed to fill the sheets. Those who shared in the pilot study were excluded from the study sample.

Tools of data collection

1- Structured Interviewing Questionnaire Form:

The questionnaire include.

- **Socio-Demographic characteristics*:*** Of post-stroke patients, this part is covered (i.e., age, sex, marital status, educational level, &occupation).
- **The medical health history** of post-stroke patients, it covers the medical diagnosis, date of occurrence, number of recurrence, and types of medications and present complaints.

2-The Barthel ADL Index:

It developed by **Barthel (1965)** to assess the degree of independence of the patient it is consist of 10 items (transferring, bathing, dressing, toileting, continence, feeding, stairs, exercises, and grooming).

Scoring: Sum the patient's scores for each item. Total possible scores range from (0- 20), with lower scores indicating increased disability.

Each item scored as follows: (2) for independent performance, (1) for needing assistance in performance, and (0) for total dependent performance.

The total score is categorized as follows:

Activities of daily living score (0-20)

0 -7 = Dependent

8 -12 = Assisted (independent with assistant).

13 - 20 = Independent

3-The Stroke Rehabilitation Motivation Scale (SRMS)

It is developed by **White *et al.*** (**2012)** to measures internal and external influences on motivation among stroke. It is, comprised 7 sets of questions:

1. Extrinsic Motivation Introjected (EMIn)
2. Extrinsic Motivation Regulation (EMR)
3. Extrinsic Motivation Identification (EMId)
4. A motivation (AM),
5. Intrinsic Motivation Knowledge (IMK)
6. Intrinsic Motivation Stimulation (IMS)
7. Intrinsic Motivation Accomplishment (IMA)

Each item is rated in a 5-point Likert scale in terms A score of 1 =completely disagree to a score of 5= completely agree.

Scoring systems

The total score ranged from 7 to 35. Higher scores indicated higher motivation. Scores of ≥21 were considered normal to high motivation.

4-Satisfaction with Life Scale

It is developed by **Diener *et al.* (1985)** it is designed to measure global cognitive judgments of person's life satisfaction. It is consist of 5 items.

Ratedon 7-point scale that ranges from 7 strongly agree to 1 strongly disagree.

Scoring systems

The total score ranged from 5 to 35. The total score is categorized as follows:

1. 31 - 35 Extremely satisfied
2. 26 - 30 Satisfied
3. 21 - 25 Slightly satisfied
4. 20 Neutral
5. 15 - 19 Slightly dissatisfied
6. 10 - 14 Dissatisfied
7. 5 - 9 Extremely dissatisfied

Scoring in this studies

5 – 9 dissatisfied

10-25 Satisfied

25- 35 extremely satisfied

5- Mental Adjustment Stroke Scale (MASS)

It is originally by **Lewis *et al.* (2001)** to measure coping strategies among stroke patients. Scale categorizes the attitudes of stroke patients toward their illness into five subscales: fighting spirit, (16 items) helplessness/hopelessness, (6 items) anxious, preoccupation, (9 items) fatalism, (8 items) and denial/avoidance (1items).

Each item is rated on a 4-point scale ranging from 1='Definitely does not apply to me' to 4='Definitely applies to me'.

Scoring system

The total score ranged from 40:160.For fighting spirit, a high score indicates a more positive attitude toward illness, but for the other subscales, a high score indicates a more negative attitude toward illness.

Field Work

At the beginning, the researchers introduced themselves and briefly explained the study objectives to patients. The process of data collection was carried-out in the period from end of May 2015 to the end of end of August 2015, the researchers attend out patients stroke rehabilitation clinic of Ain Shams University Hospitals from 9.00 am to 1.00 pm for two days/ week to collect data.

Ethical consideration:

The ethical research considerations in this study included the following:

• The researchers approval obtains before conduct the study.

• Subjects are allowed to choose to participate or not participates 'voluntary participation' and they have the right to withdraw from a study any time without penalty.

• The researchers describe the objective and aim of the study to subjects.

• Maintain confidentiality and anonymity for every selected child or parent who involved on the study sample.

• Clarifying that all information will be used for scientific research only.

Statistical design

In the present study, a frequency analysis, using SPSS Win 19.0, was performed to calculate the frequencies and percentages for the general characteristics of the patients with stroke. Functional status, life satisfaction and adjustment, we performed repeated-measures ANOVA. To assess the relations between functional status, life satisfaction and adjustment of stroke patients.

3. Results

Table (1) the table shows that highest percent of patient were male it represent 56% with a mean age 52.98±8.08. More half of stroke patients 54% were married. Concerning to educational level highest proration of patient read and write 26%. About the occupation 44% of them are retried. The table reveals the majority of patient 94% of stroke patients have insufficient income. Finally the highest percentages of them are resident in urban area.

Table (2) Regarding to medical history of post-stroke patients table (2) revealed that 87% of the stroke patients were suffering from ischemic stroke, and 74% of stroke patients have acute occurrence. About date of occurrence 76% of patient have stroke for period> 12 months**.** It observed from the table 72% of stroke patients have a stroke for first time. As regard to unresolved effects of the stroke the highest proration have Left hemiplegia and Incontinence, they represent 46% and 44% respectively. It is observed high cholesterol and hypertension are the most health condition leading to stroke. They represent 42% & 40%.

Table (3) concerning to Assessment of activities of daily living for stroke patient. It is observed from the table 72% of patient have (independent with assistant) level of activity X^2= 9.91.

Table (4-a) it is clear from the table (40%) of the stroke patients strongly agree that they are satisfied by their life followed by, if they could live my life over, they would change almost nothing, it represent 34 %.

Table (1) Socio-economic characteristics of stroke patients

Items	NO	%
Gender		
Male	28	56
Female	22	44
Age 30-65 years		
30- 45	9	18
45- 60	27	54
+60	14	28
M±SD= **52.98±8.08**		
Marital status		
Single	9	18
Married	27	54
Widowed	10	20
divorced	4	8
Level of education		
Illiterate	11	22
Read and write	13	26
Basic education	12	24
Middle education	9	18
High education	5	10
Occupational status		
Unemployed	6	12
Retired	22	44
Working	14	28
House wife	8	16
Income		
Sufficient	3	6
Insufficient	47	94
Resident		
Urban	42	84
Rural	8	16

Table (4-b) the table indicates that more half of the stroke patients (54%) satisfied with their life $X^{2=}$ 17.88.

Table (5-a) it is noticed from the table more half of the patient (58%) strongly agree that" the rehabilitation help them feel like they are achieving something" as well as (44%) of patient neither agree or disagree that "they feel like their motivation for participating in rehabilitation have gotten lower".

Table (5-b) the table shows that (64%) have normal level of motivation. $\times^2$ =28.28.

Table (6-a) As regard to fighting spirit the table shows that more have of stroke patients (58%) agree that "they counting their blessings" definitely applies to them '.followed by they see their illness as a challenge and they are determined to put it all behind them. They represent equal percent (54%). Concerning to negative attitude. as regard to negative attitude about " **Helplessness/hopelessness"** sub items highest percent of stroke patients (36%) clarified that they feel they can't do anything to cheer them self up. It definitely does not apply to them mean while all patient clarified that have been doing things that they believe will improve their health, eg, changed my diet**,** it definitely applies to them concerning to '**Anxious** preoccupation". About "**Fatalism"** sub items all patient clarified that they've put them self in the hands of God it definitely applies to them. Finally about the **denial** item highest proration (74%) clarified that they don't really believe they had a stroke was definitely applies to them.

Table (6-b) the table indicate that (66%) of stroke patients had a negative attitude $\times^2$ =82.16

Table (7-a) it is observed from the table that there was a significant relation between activity of living and motivation meanwhile there was insignificant relation between activity of daily living and life satisfaction and psychological adjustment.

Table (2) Medical history of stroke patients under study

Items	No	%
Medical diagnosis		
Ischemic stroke	39	78
Hemorrhagic stroke	11	22
Date of occurrence		
< 6 month	2	4
6-12 months	10	20
> 12 months	38	76
Type of occurrence		
Acute	37	74
Recurrent	13	26
Number of recurrences		
1 times	36	72
2 times	14	28
3 times	0	0
***Unresolved effects of the stroke**		
Left hemiplegia	23	46
Right hemiplegia	19	38
Communication problems	16	32
Incontinence	22	44
Swallowing problems	12	24
***Stroke patients risk factors and other health conditions**		
Hypertension	20	40
Diabetes	13	26
Obesity	15	30
High Cholesterol	21	42
Smoker	11	22
Lung problem	3	6

*The answers is not mutually exclusive

Table (3) Assessment of activities of daily living for stroke patient

Level of dependence	No	%	X2	T
Dependent (0 -7)	12	24	4.25	7.51
Assisted (independent with assistant). (8 -12)	36	72	9.91	44.43
Independent (13-20)	2	4.0	16.50	11.00

Table (4-a) Life satisfaction among stroke patients

	Strongly agree		Agree		Slighly agree		Neither agree nor disagree		Slightly disagree		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
In most ways my life is close to my ideal.	6	12	9	18	3	6	10	20	5	10	7	14	10	20
The conditions of my life are excellent.	0	0	3	6	7	14	16	32	12	24	9	18	3	6
I am satisfied with my life.	20	40	10	20	0	0	8	16	0	0	9	18	3	6
So far I have gotten the important things I want in life.	13	26	9	18	0	0	13	26	0	0	15	30	0	0
If I could live my life over, I would change almost nothing	17	34	11	22	6	12	5	10	3	6	6	12	2	4

(4-b) Level of life satisfaction among stroke patients

Level of life satisfaction	No	%	X2	T
Dissatisfied (5-9)	**20**	**40**	**6.60**	**21.20**
Satisfied (10-25)	**27**	**54**	**17.88**	**18.41**
Extremely satisfied (25-35)	**3**	**6**	**30.33**	**20.87**

Table (5-a) Motivation among stroke patients

	Completely disagree		Completely disagree		Neither agree nor disagree		Somewhat agree		Completely agree	
	No	%	No	%	No	%	No	%	No	%
Do you participate in rehabilitation because other stroke patients in the hospital are getting better through rehabilitation?	**10**	**20**	**0**	**0**	**30**	**60**	**0**	**0**	**10**	**20**
Do you find participating in rehabilitation exciting	**8**	**16**	**10**	**20**	**18**	**36**	**4**	**8**	**10**	**20**
Does rehabilitation help you feel like you're achieving something	**4**	**8**	**0**	**0**	**12**	**24**	**5**	**10**	**29**	**58**
Do you perform rehabilitation because it is what the doctors and therapists want you to do.	**12**	**24**	**6**	**12**	**10**	**20**	**7**	**14**	**15**	**30**
Do you feel that you have no choice but to participate in rehabilitation.	**9**	**18**	**7**	**14**	**17**	**34**	**5**	**10**	**12**	**24**
Do you feel like your motivation for participating in rehabilitation has gotten lower	**4**	**8**	**13**	**26**	**22**	**44**	**0**	**0**	**11**	**22**
Do you feel like you are learning useful things that you could use outside hospital?	**8**	**16**	**7**	**14**	**20**	**40**	**5**	**10**	**10**	**20**

Table (5-b) Level of motivation among stroke patients

Level of motivation	**No**	**%**	**X2**	**t**
Less motivation <21	**18**	**36**	**14.16**	**14.90**
Normal to high motivation ≥21	**32**	**64**	**28.28**	**32.34**

Table (6-a) Adjustment among stroke patients

	definitely does not apply to*me*		To some degree not apply to me		To some degree applies to me'		Definitely applies to me'	
	N0	%	N0	%	N0	%	N0	%
Positive attitude								
Fighting spirit								
I keep quite busy, so I don't have time to think about it	**20**	**40**	**13**	**26**	**5**	**10**	**12**	**24**
Other people worry about me more than I do	**14**	**28**	**8**	**16**	**7**	**14**	**21**	**42**
I feel that my positive attitude will benefit my health	**23**	**46**	**5**	**10**	**6**	**12**	**16**	**32**
I try to fight the illness	**22**	**44**	**7**	**14**	**9**	**18**	**12**	**24**
I am determined to put it all behind me	**9**	**18**	**0**	**0**	**14**	**28**	**27**	**54**
Since my stroke I now realize how precious life is, and I'm making the most of it	**16**	**32**	**6**	**12**	**10**	**20**	**18**	**36**
I try to have a very positive attitude	**15**	**30**	**0**	**0**	**13**	**26**	**22**	**44**
I think of other people who are worse off	**14**	**28**	**8**	**16**	**7**	**14**	**21**	**42**
I firmly believe that I will get better	**10**	**20**	**15**	**30**	**7**	**14**	**18**	**36**
I see my illness as a challenge	**5**	**10**	**8**	**16**	**10**	**20**	**27**	**54**
I try to keep a sense of humor about it	**21**	**42**	**10**	**20**	**13**	**26**	**6**	**12**
I have plans for the future.	**18**	**36**	**8**	**16**	**8**	**16**	**16**	**32**
I count my blessings.	**12**	**24**	**9**	**18**	**0**	**0**	**29**	**58**
I don't dwell on my illness	**20**	**40**	**7**	**14**	**10**	**20**	**13**	**26**
I think my state of mind can make a lot of difference to my health.	**13**	**26**	**12**	**24**	**5**	**10**	**20**	**40**
I try to carry on my life as I've always done	**20**	**40**	**10**	**20**	**13**	**26**	**7**	**14**
Negative attitude								
Helplessness/hopelessness								
I feel like giving up	**9**	**18**	**10**	**20**	**14**	**28**	**17**	**34**
I feel that life is hopeless	**13**	**26**	**16**	**32**	**12**	**24**	**9**	**18**
I feel completely at a loss about what to do	**16**	**32**	**10**	**20**	**9**	**18**	**15**	**30**
I am not very hopeful about the future	**15**	**30**	**16**	**32**	**17**	**34**	**2**	**4**
I feel that there is nothing I can do to help myself	**13**	**26**	**18**	**36**	**8**	**16**	**11**	**22**
I feel I can't do anything to cheer myself up	**18**	**36**	**13**	**26**	**9**	**18**	**10**	**20**
Anxious preoccupation								

I would like to make contact with others in the same boat	**15**	**30**	**5**	**10**	**16**	**32**	**14**	**28**
I am trying to get as much information as about stroke	**4**	**8**	**16**	**32**	**10**	**20**	**20**	**40**
I feel that problems with my health prevent me from planning ahead	**3**	**6**	**5**	**10**	**13**	**26**	**29**	**58**
I feel very angry about what has happened	**11**	**22**	**0**	**0**	**30**	**60**	**9**	**18**
I suffer great anxiety about it	**1**	**2**	**0**	**0**	**16**	**32**	**33**	**66**
I worry about the stroke returning or getting worse	**0**	**0**	**0**	**0**	**10**	**20**	**40**	**80**
I have difficulty in believing this has happened to me	**0**	**0**	**5**	**10**	**20**	**40**	**25**	**50**
I have been doing things that I believe will improve my health	**2**	**4**	**10**	**20**	**6**	**12**	**32**	**64**
I have been doing things that I believe will improve my health, eg, changed my diet	**0**	**0**	**0**	**0**	**0**	**0**	**50**	**100**
Fatalism								
At the moment I take day at a time	**7**	**14**	**3**	**6**	**13**	**26**	**27**	**54**
I've put myself in the hands of God	**0**	**0**	**0**	**0**	**0**	**0**	**50**	**100**
I feel fatalistic about it	**4**	**8**	**6**	**12**	**14**	**28**	**26**	**52**
I feel that nothing I can do will make any difference	**15**	**30**	**5**	**10**	**12**	**24**	**18**	**36**
I've had a good life and what's left is a bonus	**0**	**0**	**14**	**28**	**15**	**30**	**21**	**42**
I've left it all to my doctors	**4**	**8**	**16**	**32**	**13**	**26**	**17**	**34**
I feel that I can't control what is happening	**0**	**0**	**14**	**28**	**13**	**26**	**23**	**46**
I avoid finding out more about it	**6**	**12**	**15**	**30**	**10**	**20**	**19**	**38**
Denial/avoidance								
I don't really believe I had a stroke	**3**	**6**	**10**	**20**	**0**	**0**	**37**	**74**

Table (6-b) Pattern of adjustment among stroke patients

Adjustment pattern	No	%	X2	T
Positive attitude	16	34	56.62	44.54
Negative attitude	34	66	82.16	72.77

Table (7) Relationship between activity of daily life with life satisfaction, motivation and adjustment

Variable	**R**	**T**	**Sig**
Relationship between activity of daily living and motivation	.437a	2.65	.012 S Significant
Relationship between activity of daily living and life satisfaction	.030a	-.161	.873 insignificant
Relationship between activity of daily living and psychological adjustment	.253a	.978	.345 insignificant

4. Discussion

Stroke causes a wider range of physical and cognitive disabilities than any other chronic condition. These disabilities often have a significant impact on patients' mental health. As such, the variety of individual emotional responses to stroke continues to pose challenges within rehabilitation settings**.** The stroke patients also face problems of continuing long-term treatment and being dependent on care. Feeling out of control and sense of uncertainty will become a major psychological experience of stroke survivors. The crisis phenomenon that emerges after stroke is metaphorically depicted as "a struggle in the darkness" in a "boundary situation**.**

Socio-economic characteristics of stroke patients

The present study denotes that more have of the study sample were male. These result similar to **Soljak, and Majeed (2011)** and **Townsend *et al.* (2012)** they study Prevalence of stroke in **London they** found that males had a higher prevalence than females and They are having 25% higher risk of a stroke compared to women. The results clarified that more than half of the stroke patients in age group45-60 year this may be due to inactive life style, these result is consistent with **Hall *et al.* (2012)** they explain fact about stroke, they found that third of people hospitalized for stroke were younger than 65 years. The result explain that highest percent of the stroke patients are retried and resident in urban area this reflect the sedentary life style, they are dependent on technology to complete house work activity, used to use care, bus in transportation.

Medial history of Stroke patients under Study

The result explained that high cholesterol and hypertension the most observed risk factors that increase risk of stroke. This results in accordance with **WHO (2013)** report explained that hypertensions, high cholesterol, and diabetes are the most risk factors causing stroke. Concerning the medical history of the stroke patients. The result explain that highest percentage of the stroke patients have ischemic stroke, for the first time with acute onset This is consistent with the **Heart and Stroke Foundation (2008)** which mentioned that The most common pathological stroke subtypes were ischemic infarctions, which may be subarachnoid or intra cerebral hemorrhage. About the

unresolved effect of the stroke the results indicate that the greatest percent of stroke patients suffer from Left hemiplegia and incontinence problems this result in agreement with **Harwood and Good. (2010)** they illustrate that upper limb/arm weakness and Bladder control were the most disabilities after stroke they constitute 77% & 50%.

The results explained that one third of stroke patients have stroke 2nd time this result is agreement with **Mohan *et al.* (2009**). They study frequency and predictors for the risk of stroke recurrence up to 10 years in London. They found among stroke patients, about a third may suffer a second stroke.

Level of dependence among stroke patients

The result of present study revealed that nearly two third of stroke patients have assisted (independent with assistant) on the **Barthel Index** of stroke Level of independence this may be due to they have been share in rehabilitative program and they have a strong desire to combat their disabilities as well as decrease burden of care on their families caregivers.This result is similar to **Yang *et al.* (2015) and Badaru *et al.* (2013)** they found the independence level decrease on **Barthel index** during rehabilitative from 23.4 percent to 16.8 percent and forty percent likely to be independent in three or more in daily living activities. Also the result is accordance with **Adams *et al.* (2007)** explained that once discharged from the hospital, many stroke survivors require full or partial assistance in their activities of daily living.

Life satisfaction among stroke patients

The result denote that the majority of stroke patient satisfied by their life " they agree that they are satisfied with their life & If they could live their life over, they would change almost nothing**, "** this may be due they perceive illness as fate from GOD and Allah forgiveness their mistakes by illness. As well as they have been attain their wishes, dreams and an accomplish their life goals before onset of stroke. This explanation is agreement with **Omu (2010**) and **Ostwald *et al.* and Cron. (2009)** they explained that spirituality and religion are significant issue in coping with stroke. Likewise life satisfaction represent subjective appraisal of one's life and does not necessary means satisfaction with all aspect of life. The result denote that more than have of stroke patients there are satisfied by their life, this may be related to many factors such as., they have assisted level of independent, able to share in social event, perform simple task activities as well as they have psychological support from their family caregivers and health team. This result is contraindicating with **Ostwald *et al.* (2009).** They found that life satisfaction scores declined in the stroke survivors. Post-stroke at twelve months was a strong predictor of poor life satisfaction over the ensuing year. Also the results disagreement with **Bergstrom *et al.* (2011)** they explained that persons with a stroke often perceive challenges and limitations in everyday life and this in turn has been shown to be related to lower levels of perceived global life satisfaction.

This results disagreement with **Roding *et al.* (2010)** found that with a sample of 1068 stroke patients half of stroke patient reported that they were not satisfied with life as a whole.

Motivation among stroke patients

The results shows that more half of the study sample neither agree or disagree that they are participate in rehabilitation because other stroke patients in the hospital are getting better through rehabilitation. This may be due different reasons: they perceive rehabilitation as a part of treatment, lack of educational intervention, they don't understand their illness as well as they have lack of autonomy due to physical disabilities. This result is agreement with **Pickrell *et al.* (2015).** They explained that two factors that negatively impact the outcome of rehabilitation are lacking motivation and patients not understanding the reasons for doing their rehabilitation exercises and therapists do not provide the patient with feedback about their improvements. Also the result is consistent with **Hartman *et al.* (2007)** explained that describe experience of patients 12 months after stroke onset, they found that third of patients have a global life satisfaction.

The results denotes that more half of stroke patient agree that rehabilitation help them feel like you're achieving something, This may due to they are gain significant improvement in their condition that lead to improving self confidence. This result is accordance with **Hartigan.** (**2012)** he explained that the positive factors that affect motivation include changes to the patient's ability over time, understanding of improvement.

Level of Motivation among Stroke Patients

The results clarified that less than two third stroke patients have normal to high level of motivation this may be related to many factors such as: they have a strong desire to overcome their difficulties, have a significant improvement in their condition, they are self reliant before stroke, gain psychological support from families members and health team, moreover they have complete faith in God. These explanations is supported by **Eng *et al.* (2014)** they illustrate factors affecting the ability of the stroke survivor to drive their own recovery outside of therapy during inpatient stroke rehabilitation they found that the positive factors that affect motivation include changes to the patient's ability over time, understanding of improvement, support from family and friends and lifestyle factors before stroke. This result is consistent with **Yamrotsow (2013)** she conduct study on three

group of patient at Karolinsk Institute, Solna in Stockholm, Sweden. She found that Stroke survivors are motivating by measuring recovery from the point of pre-stroke state. Also the result is similar to **Nordin *et al.* (2014)** they explained that patient sharing in rehabilitative activities means they are motivated to share in rehabilitation therapy in hospital and home.

Adjustment among stroke patients

The result explained that stroke patients used different methods of adjustment this may be due to the stroke patients want to return back to normal' life they had before. They have a strong desire to regaining their previous level of function in physical care, social activity and personal responsibilities inside home and outside home, lessen financial burden as well as they need to control the present health status and decrease recurrent of stroke in the future These explanation in agreement with **Jones *et al.* (2008)** they illustrated that many stroke survivors spoke about the importance of returning to the 'normal' life they had before their stroke incident. They looked forward to being able to return to their pre-stroke responsibilities. Other stroke survivors accepting their condition.

The finding of the present study indicate that adjustment to stroke have two fold positive and negative, as regard to positive regard " **Fighting spirit"** the result revealed that more half of stroke patients mentioned that I count my blessings, I see my illness as a challenge and I am determined to put it all behind me. Are definitely applied to them, this may be due to they are accepting stroke incidence and take active process to overcome their physical limitation and return to the previous level of adjustment pre stroke. Some patients said the stroke already occurred, now their need to change and manage the situation. This result is agreement with **Sarre *et al.* (2014)** they explained that stroke was seen to engender process of redefining, reevaluating core idea of self. the result is similar to **Wood *et al.* (2010)** illustrated that the practical strategies of adjustment to stroke include adapting one's activities including taking relearning what had once come naturally planning, exercising, distractions, keeping busy, goal setting taking risks, in an attempt to achieve a goal and making adjustments to keep up self-image.

Concerning to negative attitude. The result about the **anxious preoccupation** explain that more than Three-quarters of stroke patient mentioned that they worry about the stroke returning or getting worse, this may be due to they have uncontrolled hypertensive disease and have a family history of recurrent of stroke. This result is similar to **Field *et al.* (2008)** they found that three quarter of stroke patients report substantial fears about recurrent stroke, falling, or returning to work.

The finding of the present study indicate that more than half of the study sample suffer from they suffer great anxiety about stroke and they feel that problems with their health prevent them from planning ahead this may be due to they are overwhelmed by their physical disabilities that prevent them to resume in social life as well as they have a numerous questions about future. This result is similar to **Carlsson *et al.* (2009)** explained that because of its sudden onset and the potential threat to life it represents, stroke may disrupt and undermine an individual's life trajectory and future plans may become doubtful and unpredictable.

The result of the present study indicate that all stroke patients have a high degree of anxiety, all patient they follow healthy life style beside physical rehabilitation to overcome their physical limitation, uncertainty of the future this result consistent with **Campbell *et al.* (2012**) they found that the combined rate of anxiety by time after stroke was: 20% within one month of stroke; 23%: 27%, within 1 to 5 months after stroke; and 24% within 6 months or more after stroke.

Concerning to **Helplessness/hopelessness sub items**, the result denote that the highest percent of patients perceive that they feel like giving up and they feel completely at a loss about what to do, were definitely apply to them this may be related to the stroke patients experience physical impairments that lead to dependency on other to perform everyday activities that were previously performed independently, additionally they have uncertain picture about future. This result is consistent with. **Astrom *et al* (2015) and The Stroke Association (2006**) explained Depression (sad-hopelessness) is extremely common in people who have had a stroke. it is probably the most common psychological effect after stroke. In fact, it is estimated that around half of those who survive a stroke suffer significant depression within the first year. Also the result is agreement with **Ostir *et al.* (2011)** they illustrated that depressive symptoms in the first year following first-ever stroke in 544 individuals at the time of discharge from inpatient rehabilitation, 27.6% of patients were identified as depressed. Over the course of the following 12 months however, approximately one-fifth of individuals identified as depressed at baseline remained depressed at one year; while for approximately one-third of this group, depression remained unresolved and they "moved in and out of depression" during the follow-up period.

Concerning to Fatalism sub items all patients mentioned that they've put them self in the hands of God was Definitely applied to them this may be due to in arab countries religious control everything in the life likewise religious believes provide meaning for

life. This result in the same lines with Omu**, Onutobor**. (**2010)** she explained that religious believes play important role in adjustment among stoke patients in Kuwait. Also the result is similar to **Ch'Ng M, French and Mclean (2008)** they found turning to religious by above 70% of the stroke patients to accept their condition Meanwhile this finding is disagreement with **Morgenstern *et al.* (2015**) they found that Spirituality, Fatalism did not confer a significant effect on stroke outcomes.

Regarding to Denial/avoidance the result revealed that less than three quarter of stroke patients agrees that they don't really believe they had a stroke this may be due to the stroke is a sudden onset condition causing a variety of physical and cognitive impact that effect sense of wellbeing among stroke survivors.

This result is similar **Taylor *et al.* and Broomfield. (2011)** they explained that patients attempting to accept the consequences of the stroke by adjusting personal preferences and goals, they will either be confirmed or disconfirmed by subsequent experience. If the expectation is confirmed, the assumption is strengthened. If the expectation is disconfirmed, this may lead to a period of disorientation and stress while the assumption is adjusted to take account of the new experience. Short-term denial and avoidance can allow the intensity of the experience to be weakened, therefore reducing distress and facilitating adjustment.

Pattern of adjustment among stroke patients

The result revealed that two third of stroke patients have a negative attitude and one third have a positive attitude toward stroke this may be due to the stroke incidence is unpredictable have long-lasting physical, emotional and social consequences additionally the adjustment was often marked by setback and new challenges over times. This result is disagreement with **Ridder, *et al.* (2008)** they illustrate that adjustment interchangeably to refer to the healthy rebalancing by patients to their new circumstances. Most patients eventually reach a state of good psychological adjustment, but for about 30% of patients, the adjustment phase is prolonged and sometimes unsuccessful.

The result revealed that was a significant relation between activity of living and motivation meanwhile there was insignificant relation between activity of daily living, life satisfaction and psychological adjustment. This may be due the motivation is enhanced by psychological support from health team and family care giver meanwhile life satisfaction were significantly related to patient's functioning in everyday life, and patients are overwhelmed by their feeling after stroke. This result disagreement with **Park *et al.* (2015)** they conduct their study in National University Hospital in South Korea on 42 inpatients and outpatients aged 65 years or older who were receiving rehabilitation after being diagnosed with stroke. They found that statistically significant differences between activity of daily living and psychological adjustment. Also the result not consistent with **Darlington *et al.* (2007)** they found that the flexible goal adjustment was not correlated with activity of daily living as well as the result is not similar to **Aasnes. (2008)** they found there is a strong significant relationship between activity of daily living and perceivedlife satisfaction, for persons who suffered a stroke 12 months.

Conclusion

Physical independence as consequence from stroke has a significant relation on motivation as well as there was insignificant relation on life satisfaction and psychological adjustment

Recommendations

The present study recommends that:

Further research is recommended regarding how patients respond to strokes and how they reconstruct and manage their everyday lives after a stroke.

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