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Impact of Counseling Intervention to Promote Adaptability and Self Efficacy among Stroke Patients and Their Family Caregivers during Rehabilitation Stage at Asser General Hospital

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Abstract: Present study aims to identify needs and pattern of physical and mental adaptation among stroke patient and their family care givers during rehabilitation stage at the neurological clinic. Hence, Implement counseling session for stroke patients and their family care givers (Provide instructional booklet) and evaluate the outcome of counseling session on patient and their family care givers. The study was conducted at the out-patient of the neurological clinic on Asser General Hospital at Abha city Saudi Arabia. A convenience sample of 50 post stroke patients and their families who are attended for follow up visit in the pre determined period a questionnaire sheet was used for data collection that was developed by researchers based on reviewing literature. ***Results:*** Findings indicated that a mean age of patients 53.02±12.77 and 80% of the patients were suffering from ischemic stroke. And 72% of the family caregivers were Resident with patient, the differences in total knowledge and practices of caregivers about stroke disease were highly statistically significant between pre, and post program. There were highly significant deference between pre and post program in relation to patient self efficacy, patient quality of life and care givers self ***Conclusion:*** The results revealed that the Counseling Intervention had an efficient impact on improving caregivers' knowledge about stroke disease and their practices about care of post-stroke disabled patients which led to an obvious improvement To Promote Adaptability and Self Efficacy among Stroke Patients and Their Family Caregivers. These were proved by the tests' differences pre and, post the program implementation which showed highly statistically significant differences in all tested items. ***Recommendation:*** The results of this study projected the need for distribution, and use of this Counseling Intervention program by all stroke care units, and increase the public awareness about the risk factors of stroke.

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Introduction:

Stroke according to the World Health Organization is defined as a clinical syndrome characterized by rapidly developing clinical signs of focal (or global) disturbances of cerebral function, lasting more than 24 hours or leading to death, with no other cause than that due to vascular disruption (**Truelsen et al, 2003**). It is said to be the third leading cause of death in the Western world, with the first being heart disease and second being cancer **(Steiner and Pierce, 2004**). Stroke is preventable and treatable. A better understanding of the causes of stroke has helped people make lifestyle changes that have cut the stroke death rate nearly in half in the last two decades. These are warning signs of a stroke, sudden numbness or weakness of the face, arm, or leg, especially on one side of the body, sudden confusion, trouble speaking or understanding, and sudden trouble seeing in one or both eyes **(National Institute of Neurological Disorders and Stroke, 2007).**

Strokes affecting Saudi nationals were registered that stroke was 186 per 100,000 population **(Adams et al, 2009)** now a day Stroke is very prevalent in the Kingdom of Saudi Arabia population approaching 29.8/100,000/year. Stroke outcome is known to be affected by the level of stroke awareness in the community. (**AlAqeel et al, 2013). David *et al.* (2008)** stated that Rehabilitation for patients with stroke and their family members has been focused primarily on physical abilities, performing activities of daily living, and dealing with the mental changes associated with stroke. Self- Efficacy mean that People‘s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives **Salter,. Jutai, & Teasell (2003)** Quality of life is individual perception of his \her position in life in the context of the culture and value system in which live in relation to their goal,expectation **Wachters et al,(2005).** Care giving is a very important task that post-stroke disabled patients understand very little, and need to learn what exactly caregivers want, and what determines the burden they experience, because their role is very important in determining the long term outcome for stroke patients. Advances in stroke rehabilitation have successfully reduced sever disability and institutionalization, and it is estimated that up to 80% of stroke survivors return home. However, about 25-74% requires assistance from informal caregivers for daily living activities (**Kalra, 2005).**The nurse has the opportunity to assist the stroke patients and their family caregivers not only through acute hospitalization but also through rehabilitation long term care. The needs of patients and their caregivers require ongoing nursing assessment and adaptation of interventions in response to changing needs to optimize quality of life for both the patient and family caregiver **(Lewis *et al.,* 2004).** So that the present study aims to identify needs and pattern of physical and mental adaptation among stroke patient and their family care givers during rehabilitation stage at rehabilitation center.

Aim of the Study:

Present study aims to identify needs and pattern of physical and mental adaptation among stroke patient and their family care givers during rehabilitation stage at the neurological clinic.

Implement counseling session for stroke patients and their family care givers (Provide instructional booklet) and evaluate the outcome of counseling session on patient and their family care givers

Research hypotheses

- Adaptability And Self Efficacy among Stroke Patients and Their Family Caregivers will be improved after implementation Counseling Intervention program.
- Level of confidence, ability to manage their difficulty and engaging in daily living activities Among Stroke Patients and Their Family Caregivers will be improved after implementation Counseling Intervention program.
- Dependence level of post-stroke disabled patients will be improved after implementation Counseling Intervention program

Design: Quasi Experimental Research design was used.

Setting: The study was conducted at the out-patient of the neurological clinic on Asser General Hospital at Abha city Saudi Arabia. A convenience sample of 50 post stroke patients and their families who are attended for follow up visit

Sample A purposive sample of post stroke patients and their families who are attended rehabilitation visit for at least 3 month will be included in this study. With following criteria for patient (Age: above 30 years, Sex: both sex, Nationality: Saudi. For family care givers: Primary caregivers by blood and marriage Educational level: able to read and write Sex: both sexes Dwelling in the same house hold

Technical design:

Tools for data collection:

I. Structured interviewing questionnaire form:

It was developed by the researchers based on literature review, and presented in simple clear Arabic language for the accurate assessment of post-stroke patients and their families' caregivers. It consisted of two parts including:

Part 1

(A) Socio-Demographic characteristics:

1- A post-stroke patient, this part is covered (i.e., age, sex, marital status, educational level, &occupation).

2- Family caregivers, this part are covered (i.e., age, sex, kin relationship, marital status, educational level, occupation, & residence).

(B) The medical health history of post-stroke patients, it covers the medical diagnosis, date of occurrence, and types of medications, and present complaints.

(C) It covers the caregivers' knowledge regarding to stroke disease, which is composed of seven close-ended questions, These are about; meaning, etiology, risk factors, signs and symptoms effects of stroke, ……etc

The rating scale is shown as the knowledge score was classified into three categories: (a) Correct answers scored as 3 for each item, (b) for Incomplete answers, 2 for each item, (c) 1 for each Incorrect answers item which represent: **"Good"** From 13 – 21(75% - 100%**)**. **"Moderate"** From 8 - 14 (50%-74%)**.** **"Poor** from 1 - 7 (< 50%)**.**

(d) It covers caregivers' stated Practices about special care for post-stroke patients, which is composed of 15 close-ended questions, These are about; Precautions taken to prevent aspiration in case of dysphagia, Care provided in accidental problems with bowel and bladder,…..etc

Scoring system for the caregivers' stated Practices scale is shown as the stated Practices score was classified into three categories: (a) Correct answers scored as 3 for each item, (b) for Incomplete answers, 2 for each item, (c) and 1 for each Incorrect answers item which represent: **"Good"** From 29 – 45. **"Moderate"** From 16 – 30. **"Poor** From 1 – 15.

Observational checklist for caregivers' skills,

It is designed to collect data about caregivers' practices about some procedures; transferring to and from chair, measuring blood pressure, urinary catheter care, and enema. Each procedure had different numbers of action steps, It was developed in accordance to **Sorrentino and Gorek (2003)**

Scoring system:

In relation to health care procedure observational check list, the score was divided into done with score (1), and not done or done incorrectly with score (0). The score for every procedure was different because there were different numbers of steps.

Part 2

a. Assessment dependence level questionnaire format

It is an assessment questionnaire format adopted from **Eliopoulos (2001),** and adapted and translated by the researchers to assess the level of dependence for patients. This tool is composed of two parts the first part, about activities of daily living (ADL), which is an assessment format, composed of ten close-ended questions. It covers mobility, transferring, bathing, dressing, toileting, continence, feeding, stairs, exercises, and grooming. The second part is about instrumental activities of daily living (IADL) which is an assessment format composed of eight close-ended questions. It covers; telephoning, shopping, medicating, handling money, preparing food, housekeeping, laundry, and transporting.

Scoring system for (ADL) and (IADL)

The score was 0, 1, and 2 for every point, in the first assessment tool, it contains ten points 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) from 0 -7 = Dependent
8 -12 = Assisted (independent with assistant). 13 - 20 = Independent. Instrumental activities of daily living score (0-16):- 0 -6 = Dependent.7-10 =Assisted (independent with assistant).11- 16 =Independent.

b. Care giving Self-Efficacy scale: For each activity that patient s indicated at least some difficulty Performing and family pattern of care to mange this difficulties Care giving Self-Efficacy scale The score was 1, 2, and 3 for every point, in the first assessment tool, it contains nineteen points scored as follows: (3) for complete self-efficacy, (2) for mild self-efficacy, and (1) for no self-efficacy,. The total score is categorized as follows: Care giving Self-Efficacy score (1-57) from 1-19 no self-efficacy, 20-38 mild self-efficacy, 39-57 complete self-efficacy.

c. Patient Self-Efficacy Scale. (Schwarzer and Jerusalem's 1995)was used to assess respondents' level of confidence in their ability to manage their difficulty while engaging in daily living activities The score was 1, 2, and 3 for every point, in the first assessment tool, it contains ninety-nine points scored as follows: (3) for complete self-efficacy, (2) for mild self-efficacy, and (1) for no self-efficacy,. The total score is categorized as follows: Patient Self-Efficacy score (1-99) from 1-33 no self-efficacy, 34-66 mild self-efficacy, 67-99 complete self-efficacy.

d. Health and Activity Questionnaire (HAQ) developed by **Kauhanen (1999)** The score was 1, 2, and 3 for every point, in the first assessment tool, it contains sixty points scored as follows: (3) for independent, (2) for partially dependent and (1) for dependent.The total score is categorized as follows: Health and Activity Questionnaire score (1- 180) from 1-60 dependent, 61-120 partially dependent, 121-180 dependent.

Operational Design:

Preparatory phase:

A review of the current and past available literature covering the various aspects of the problem was done using text books, articles and magazines. This was necessary for the researchers to get acquainted with, and oriented about aspects of the research problem, as well as, to assist in the preparation of the data collection tool.

Pilot study:

The pilot study was conducted to test the content, validity, reliability, and practicability of tools. It was carried on 10 caregivers of post-stroke patients, they were chosen randomly from the out-patient of the neurological clinic At Asser General Hospital by using an interviewing questionnaire as a pre-test sheet. Based on the findings of the pilot study, the necessary modifications were done. After one expert in the medical surgical nursing field to evaluate face and content validity,

All tools were used to get a baseline assessment for the caregivers of post-stroke patients prior to the development of the educational nursing intervention program.

Limitations of the study:

It was so difficult to get the suitable time every week for applying the program to the same group; because the schedule of follow up for each patient was varied

Ethical consideration:

Necessary approvals were obtained in order to permit the researchers to conduct data collection from the mentioned health setting. All participants of caregivers of post-stroke patient's members were informed with the purpose and nature of Counseling Intervention program and written informed consents were obtained and secured.

Program implementation

Data were partially collected from the participants from the out-patient of the neurological clinic At Asser General Hospital Data collections (pre test) began from December 2012 to the end of January 2013. Data were collected through two days per week (Sunday, and Thursday) from 1.00 pm to 4.00 p.m. Each of the tools was administered by the researchers to every subject in the study, it took about 45 minutes to fulfill. Implementation of the program and post test was carried out in the same prescribed area from February 2013 to end of March 2013

The content of counseling program sessions was as follows:

-Acquire theoretical background about stroke disease.

-Acquire overview about medical management of post-stroke patient.

-Apply the proper health measures for administering the medications for post-stroke patients.

-Be acquainted with the role of the caregiver in providing: suitable nutrients in post-stroke patient. Care of post-stroke patients with dysphagia.

- Apply health care measures for bed ridden patients.
- Apply hygienic measures for disabled post-stroke patients.
- Measure vital signs for their patients.
- Make physical exercise.
- counseling session for increase level of dependence and instrumental activities of daily living for each patient and also increase care giver and patient self-efficacy

Statistical design:

As regards the other interviewing questionnaire forms that are not using the scoring system, data were analyzed and tabulated as a descriptive study.

Statistical analysis:

An IBM compatible PC was used to store and analyze the data. Calculations were done by means of statistical software package "SPSS". Data were tabulated and statistically analyzed to evaluate the difference between the stages of the program (pre and post test) Qualitative variables were expressed as percentages and compared in different stages using the Chi- square test (X^2). Statistical significance was considered at P-value <0.05, not significant at P >0.05, and highly significant at P < 0.001.

Results:

Concerning socio-demographic characteristics of post-stroke patients and their caregivers **table (1)** reveals that 54% of patients were males with a mean age 53.02±12.77years and 78% of them were married, with 46% were illiterate, and 40% were housewives. Regarding to caregivers, 54% of the family members, who are caring for the post-stroke patients at home were females, while 46% were males. The caregivers' mean age was 37.16±10.32. As regards marital status, this study shows that, 80% were married, 48% were Basic education and middle education, and half of the caregivers (44%) were Employee. As regards Resident with the patient (72%) live in the same house**.**

Considering medical history of post-stroke patients table (2) indicates that 80% of the patients were suffering from ischemic stroke and 58% of them the onset of the disease less than one month. 70% of patients had acute stroke.

Regarding to the types of medications taken, 98%, 92%, 80%, & 80% respectively, of the patients were given neuroprotectants, antihypertensives, antithrombotics, and anticoagulants.

According to the present complaints, the same table shows that all patients (100%) were suffering from hypertension, 82%, & 72% respectively, of them complained of dysphagia and urinary incontinence while 46% and 42% respectively of the patients complained of loss of memory and dry skin with poor integrity. As regards musculo-skeletal system, 38% of the patients had right hemiparesis. More than half of the sample were eating soft foods, (56%), and all of them (100%) made medical follow up, out of them 50% followed up every month, meanwhile, 50% of them made follow-up when needed.

Regarding to caregivers knowledge about stroke disease, **table (3)** indicates that, a few of caregivers answered correctly before the program, regarding to meaning of stroke, causes, risk factors, signs and symptoms, and its effects (2%, 2%, 2%, 4% & 6% respectively), while the majority of them answered correctly after the program (94%, 92%, 88%, 98% & 96% respectively). As a matter of fact most of them answered correctly about signs/symptoms of stroke and its effects in post-program and follow-up.

The table also represents that the majority of caregivers answered correctly at post program regarding to the types of stroke medications, precautions done when administering it, and the precautions of its side effect (94%, 90% & 96% respectively)

Considering knowledge about nutritional needs for post-stroke patients, preprogram more than one tenth of caregivers answered that, the suitable components of nutrients for post-stroke contain less of fruits\vegetables, lipids, and salt (16%,18% & 12% respectively), while after the program the majority of them answered that less lipids and salts are the suitable components of nutrients (80% & 86% respectively)

The table indicates also that, most of the caregivers (96%) gave less than 1.5 liters of fluids to the patient per day before the program, while after the program, more than half (52%) of them gave from 1.5-2 liters of fluids daily.

To summarize the differences in total knowledge of caregivers about stroke disease were highly statistically significant between pre, and post, program($X^2 = 61.40$, P<0.01).

Investigating caregivers stated practices about care for post-stroke patients **table (4)** presents that, 82% were suffering from dysphagia, and 51.2% of the caregivers know all the precautions taken to prevent aspiration in the pre-test, while after the program implementation, their stated practices improved to 73.0%, with no statistically significant difference between before and after the program($X^2 = 0.93$; $P>0.05$

Also the table reviles that few (14%) of the caregivers know the care provided in diarrhea, also 48% of them in case of constipation and 40% in case of incontinence, while after the counseling program their level of practices improved.

The table indicates that there was highly statistically significant difference between pre and post program related to the caregivers' stated practices regarding to care of urinary catheterized patients, who presented 50% of the patients ($X^2 = 17.33$, $P <0.01$).

Table (1): Socio-demographic characteristics of post-stroke patients and their family caregivers under study (n=50)

Items	Patients		Caregivers	
	No.	%	No.	%
Sex:				
Male	27	54.0	23	46.0
Female	23	46.0	27	54.0
Mean age of the patients range from 30-80 years	53.02±12.77		-	
Mean age of caregivers ranged from 30-60 years	-		37.16±10.32	
Kin-relationship:				
Husband	-	-	4	8.0
Wife			7	14.0
Brother			7	14.0
sister			12	24.0
Son	-	-	12	24.0
daughter			8	16.0
Marital status:				
Single	7	14.0	7	14.0
Married	39	78.0	40	80.0
Widowed	3	6.0	2	4.0
divorced	1	2.0	1	2,0
Level of education:				
Illiterate	23	46.0	9	18.0
Read and write	11	22.0	8	16.0
Basic education	4	8.0	12	24.0
Middle education	4	8.0	12	24.0
High education	8	16.0	9	18.0
Occupation:				
Employee	13	26.0	22	44.0
Housewife	20	40.0	21	42.0
Freelancers	6	12.0	7	14.0
retirement	11	22.0	0	0.0
Resident:				
With patient	-	-	36	72.0
Near from patient's house	-	-	9	18.0
Far away	-	-	5	10.0

Table (2): Medical history of post-stroke patients under study (n-50)

Items	No.	%
Medical diagnosis:		
Ischemic stroke	40	80.0
Hemorrhagic stroke	10	20.0
Date of occurrence:		
< 1 month	29	58.0
1-12 months	7	14.0
> 12 months	14	28.0
Type of occurrence:		
Acute	35	70.0
Recurrent	15	30.0
Number of recurrences:		
1 times	35	70.0
2 times	8	16.0
3 times	7	14.0
Types of medication taken:*		
Antithrombotics-aspirin	40	80.0
Anticoagulants-heparin	40	80.0
Neuroprotectants	49	98.0
Antihypertensive	46	92.0
Diabetic medication	26	52.0
present complaints:*		
Neurological system (loss of memory)	23	46.0
Circulatory system (hypertension)	50	100.0
(ischemic heart disease)	11	22.0
Endocrine disorders (diabetes mellitus)	26	52.0
Gastrointestinal system (dysphagia, diarrhea, constipation)	41	82.0
Urinary system (incontinence)	36	72.0
Integumentary system (dry skin)	21	42.0
Musculoskeletal system (right hemi paresis)	19	38.0
Respiratory system (dry cough)	21	42.0
Psychological state (sad)	38	76.0
Social state (decrease communication)	45	90.0
Behavioral changes (emotional out bursts)	15	30.0
Types of preparation of food given:		
Liquids	12	24.0
Soft foods	28	56.0
Solid foods	10	20.0
Periodicity of follow-up:		
Every month	25	50.0
If needed	25	50.0

*Responses are not mutually exclusive

Regarding to laboratory tests for the post-stroke patients done by caregivers, urine test done by 40% and blood sugar analysis by 22%, and 64% of them (made the coagulation test as doctor's order before the program, however, the percentage declined after program implementation (14%, 6% & 10%), respectively)

Considering type of disability, 38% of the post-stroke patients suffered from hemiplegia before the program, while after the program, it reached 20%.

According to the precautions given to prevent complications of bed ridden, there were highly statistically significant differences between pre and post program ($X^2 = 35.38$ P <0.01).

As regarding practices about care provided to manage bed sores, out of 16 caregivers, only 6.3% know the care of bed sores before the program, while after the program, the caregivers' practices level improved to reach 30.0% of them who knew the complete care of bed sores management.

In relation to physiotherapy, 72% of caregivers did physiotherapy to their patients. Out of this percentage, 25% did physiotherapy at home, and the majority of the caregivers (80%) didn't make any exercise for their patients while after the program they reached to 94%, who made physical

Concerning caregivers observational practices, in caring for their patients suffering from post-stroke **table (5)** As regards procedure of transferring the stroke patients to and from the chair, measuring blood pressure, catheter care, statistical differences were highly significant between pre and post program (X^2 =74.70, 59.28, 49.59, 27.89 & 39.01 respectively, P <0.01).

To summarize, the total caregivers' practices' differences about care for post-stroke patients were highly statistically significant between pre and post program ($X^2 = 35.48$ P <0.01).

Concerning assessment of ADL for post-stroke patients**,** ***table (6)*** reveals that 70%of post-stroke patients were dependent regarding to daily living activities before the program, with highly statistically significant difference between pre and post program (X^2 =43.88, P <0.01).

As regards IADL, the majority of the post-stroke patients (88%) were dependent in performing the instrumental activities of daily living before the program, whereas after the program they were slightly more than one fourth (26%). The table clarifies that there was highly statistically significant difference between pre, post, program ($X^2 = 42.09$ P <0.01).

Concerning correlation between pre and post program in relation to patient self efficacy, patient quality of life and care givers self efficacy **Table (7):** reveals that there was highly statistically significant difference between pre and post program(X^2 = 11.65, 29.55, 9.21 respectively, P <0.01).

Table (3): Caregivers' knowledge about stroke disease(n=50)

Items	**Preprogram**		***Post program**		X^2 post program
	No	**%**	**No**	**%**	
Meaning of stroke	1	2.0	47	94.0	85.42, P <0.01 (HS)
Causes of stroke	1	2.0	46	92.0	89.17, P <0.01 (HS)
Risk factors of stroke	1	2.0	44	88.0	81.57, P <0.01 (HS)
Signs and symptoms of stroke	2	4.0	49	98.0	89.11, P <0.01 (HS)
Effects of stroke	3	6.0	48	96.0	83.37, P <0.01 (HS)
Medications:	1	2.0	47	94.0	
Recognize types of medications taken in stroke case	1	2.0	45	90.0	67.80, P <0.01(HS)
Precautions taken when administering medications	2	4.0	48	96.0	
Precautions of medication side effects	8	16.0	0	0.0	
Nutritional needs: Fruits and vegetables	4	8.0	2	4.0	80.93, P <0.01 (HS)
Proteins (meat, milk products eggs)	11	22.0	33	66.0	
Carbohydrates	9	18.0	40	80.0	
Decrease lipids	6	12.0	43	86.0	
Decrease salt					
Amount of fluids given to patient:					
1.5 liter daily	48	96.0	24	48.0	85.92, P <0.01 (HS)
1.5: 2 liters daily	2	4.0	26	52.0	
X^2 post program					28.57, P <0.01 (HS)
Total knowledge					61.40, P <0.01 (HS)

*Responses are not mutually exclusive

Table (4): Caregivers' stated Practices about special care for post-stroke patients under study (n=50)

Items	Preprogram		*Post program		X^2 post program
	No.	%	No.	%	
Patient with dysphagia (n=41)	41	82.0	37	74.0	0.93, $P > 0.05$ (NS)
	(n=41)		(n=37)		
Precautions taken to prevent aspiration*	21	51.2	27	73.0	0.93, $P > 0.05$ (NS)
Care provided in accidental problems with bowel and bladder*					
Incontinence	20	40.0	8	16.0	93.84, $P < 0.01$ (HS)
Diarrhea	7	14.0	31	62.0	86.00, $P < 0.01$ (HS)
Constipation	24	48.0	32	64.0	68.16, $P < 0.01$ (HS)
In case of any of these problems do you use medication?	(n=24)		(n=32)		
As doctor order	11	45.8	23	71.9	3.90, $P < 0.05$ (S)
From your experience	13	54.2	9	28.1	
Patient with urinary catheter?	25	50.0	8	16.0	13.07, $P < 0.01$ (HS)
	(n=25)		(n=8)		
Care provided to patients with urinary catheter*	19	76.0	6	75.0	17.33, $P < 0.01$ (HS)
Laboratory tests for stroke patients: Do you make urine test?	20	40.0	7	14.0	31.48, $P < 0.01$ (HS)
Do you make blood sugar test?	11	22.0	3	6.0	37.24, $P < 0.01$ (HS)
Do you make coagulation tests? (PT-PTT)?	32	64.0	5	10.0	71.85, $P < 0.01$ (HS)
Types of disability: Has your patient hemiplegia in one side in the body?					
Hemiparisis	31	62.0	40	80.0	
Hemiplegia	19	38.0	10	20.0	3.93, $P < 0.05$ (S)
Is your patient bed ridden	33	66.0	10	20.0	21.58, $P < 0.01$(HS)
	(n=33)		(n=10)		
If yes, what is the precaution given to prevent complications of bed ridden?*	20	60.6	9	90.0	35.38, $P < 0.01$ (HS)
Have your patient bed sores?	16	32.0	10	20.0	1.87, $P > 0.05$ (N)
	(n=16)		(n=10)		
What is the care provided to manage it?*	1	6.3	3	30.0	7.93, $P < 0.01$ (HS)
Is physiotherapy done	36	72.0	40	80.0	0.88, $P > 0.05$ (NS)
As a caregiver, do you make any exercise for your patient?	10	20.0	47	94.0	66.67, $P < 0.01$ (HS)
If yes, what type of exercise?	(n=10)		(n=47)		
Active exercise	1	10.0	29	61.7	
Passive exercise	9	90.0	18	38.3	
How do you transfer your patient?	1	2.0	15	30.0	39.48, $P < 0.01$ (HS)
Total practices					35.48, $P < 0.01$ (HS)

*Responses are not mutually exclusive

Table (5): Caregivers' practice about transferring to and from chair, measuring blood pressure, catheter care (n=50)

Items	Pre-program		Post-program	
	No	%	No	%
A- Transferring to chair **Procedure of transferring to chair**				
Not done (1-4)	37	74.0	1	2.0
Done incorrectly(5-9)	11	22.0	5	10.0
Done correctly (10-12)	2	4.0	44	88.0
X^2 post program			74.70, $P < 0.01$ (HS)	
Procedure of transferring from chair				
Not done(1-2)	40	80.0	2	4.0
Done incorrectly(3-4)	0	0.0	0	0.0
Done correctly (5-6)	10	20.0	48	96.0
X^2 post program			59.28, $P < 0.01$ (HS)	
b- Measuring blood pressure				
Not done; (1-5)	1	2.0	0	0.0
Done incorrectly (6-14)	2	4.0	1	2.0
Done correctly (15-20)	0	0.0	33	66.0
Haven't Sphygmomanometer and don't want to learn	47	94.0	16	32.0
X^2 post program			49.59, $P < 0.01$ (HS)	
c- Catheter care				
Not needed	25	50.0	42	84.0
Not done (15)	19	38.0	0	0.0
Done incorrectly(6-14)	4	8.0	1	2.0

Table (6): Assessment of activities of daily living for stroke patient pre, post counseling program (n=50)

Items	Preprogram		Post program	
	No.	%	No.	%
Activities of daily living(ADL)				
Independent (12-20)	4	8.0	30	60.0
Independent with assistant (8<12)	11	22.0	14	28.0
Dependent (0<8)	35	70.0	6	12.0
X^2 post program & follow up			43.88, $P < 0.01$(HS)	
Instrumental activities of daily living(IADL):				
Independent (10-16)	4	8.0	19	38.0
Independent with assistant (6<10)	2	4.0	18	36.0
Dependent (0<6)	44	88.0	13	26.0
X^2 post program & follow up			42.09, $P < 0.01$ (HS)	

Table (7): Correlation between pre and post program in relation to patient self efficacy, patient quality of life and care givers self efficacy (n=50).

Item	Preprogram			Post program			
	mean	Slandered deviation	t	mean	Slandered deviation	t	P values
1-patient self efficacy	30.66	11.65	18.59	60.64	19.54	21.93	0.602**
2-patient quality of life	63.46	29.55	15.18	114.38	31.22	25.90	0.577**
3-care givers self efficacy	21.74	9.21	16.68	37.52	11.25	23.57	0.381**

** Correlation is significant at 0.01 levels

Discussion

Findings of the present study Regarding to demographic characteristics of post-stroke patients, this study results revealed that more than half of patients were males, the subject age ranged between 30 and 80 years, and more than two third of them were married, less than half of them were illiterate, slightly more than one quarter were employees**.** In agreement with the findings of the present study, **Wachters *et al.* (2005),** who studied 33 post-stroke patients and their caregivers to determine the actual and desired information provision after a stroke, found that the average age of stroke patients was 62 years and 52% of them were males with less than three quarters of them were married and living with their caregivers, also more than two thirds of them were secondary educated.

Findings of this study, demonstrated that slightly more than half of the caregivers were females and their mean age was 37.16±10.32 years. Also more than four fifths of them were married, less than half of them were middle educational level, before discharges, more responsibility to meet patients' needs has been shifted to the caregivers at home, who are typically responsible for assisting the patient with self-care, providing transportation, helping with procedures, and assisting with medications and symptoms management. Based on available literature, caregivers' needs were summarized as informational and psychological. Caregivers needed information about symptoms, side effects from treatment, and community resources

Assessing the medical history of the stroke patients the majority of patients under study complain of ischemic stroke with more than two thirds out of patients had an acute stroke 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 intracerebral hemorrhage.

Various epidemiological studies have shown that high blood pressure or hypertension is the single most important risk factor for stroke. This is an important observation which accords with the report by **Al Rajeh et al, (1998): Cicerone & Azulay (2007).** had observed that hypertension were present in 90% of non-embolic ischemic brain infarctions, **Zargar et al. (1997)** found hypertension in 66.6% of patients with stroke, compared to our finding all patients (100%) were suffering from hypertension. These differences may be due to change in sociocultural factors, life style habits and Also highly prevalent of hypertension in Saudi Arabia.

Regarding to caregivers' knowledge about stroke disease, findings of the current study have indicated that there were highly statistically significant differences between pre, post, a counseling intervention program implementation regarding to the caregivers' knowledge about stroke disease as to the meaning of stroke, causes, risk factors, signs and symptoms, effect, recognition of types of medications, medications administration precautions, and side effects of medications**.** Because they not having idea about the stroke disease, the findings of the present study are congruent with the result of **Hamad (2001)** who found that there was a great effect due to the rehabilitating program on caregivers' knowledge improvement. The previous findings are also supported by **Mackenzie *et al.* (2007).** Who mentioned that more information the patient and the family have on stroke and the prevention of further strokes, increase an empowered and confident in dealing with their current situation

In the present study, the caregivers had some knowledge about the suitable nutritional needs for post-stroke patients before the program regarding to proteins and fruits, also carbohydrates this may be related to their background knowledge may be related to health programs on TV. However lack they knowledge regarding to lipids and salt components which explains that why almost all patients were suffering from hypertension. This result is inconsistent with that of **Abd El Ghany (2006),** who found that, most of stroke patients were not having instructions about balanced diet and more than half were consuming inadequate diet quantity and quality.

Concerning caregivers' stated practices about special care for post-stroke patients, regarding to dysphagia as a post-stroke disability, the present study result revealed that the majority of patients were suffering from dysphagia before the program implementation, while after the program it decreased to less than three quarter. It may be due to the general normal progress of disease.

In a similarly study **Mackenzie et al. (2007).** Stated that, study patients with stroke are at high risk for aspiration pneumonia, which is the direct cause of death in 6% of patients following stroke. It is most common in the early period and is related to dysphagia. Feeding can be very frustrating for a dysphagic patient; especially if the caregiver is not familiar with the patient's specific disabilities. Support personnel and family caregivers need to be taught basic feeding techniques and also to be informed of each patient's individual needs and limitations. According to **Clark, et al. (2003)**, there is evidence to show that patients recover better when they have been well informed and have good knowledge on stroke.

This clarified the more effective home care, medications administration, and follow up for those patients. Also this opinion was supported with a significant relationship found between caregivers' practices regarding to the precautions taken to prevent aspiration between pre, and post, program application.

Findings of the present study showed that, two fifths of the caregivers didn't know the care provided in case of urinary incontinence and half of them answered that they will catheterize their patients. As regards bowel incontinence and constipation, they answered that, they were using medications as glycerin or any laxative for constipation, and anti-laxative for diarrhea according to their experience before the program. However, after implementation of the program, the caregivers' knowledge and practices improved and less than two thirds of them answered correctly

This study results revealed that, the caregivers gained experience from long term care of their patients was which supported by a well effective educational intervention program. This opinion clarified that there was highly statistically significant differences between pre and post, program implementation regarding to care of bladder and bowel elimination problems.

According to **Petersen *et al.* (2002),** who studied the prediction of long functional outcome after stroke rehabilitation, incontinence was the primary urinary problem in acute stage of stroke. As regards the bowel problem they stated that, the most common bowel problem for the patient who has experienced a stroke is constipation.

The finding of the present study revealed that almost all the caregivers didn't make especial laboratory tests periodically, less than two thirds of them prefer that tests should be performed as doctor’s order regarding to PT-PTT and urine test before the program, however after the program changed to the majority of them did the PT and PTT periodically, This may be it was difficult to transfer their patients to laboratory centers or any hospitals available and near of their residence due to patient's disability of mobility and transferring.However, as regards urine test, due to the work overloading leading to stress of the caregivers, they didn't had any time to take urine samples go to the laboratory

The findings of the present study indicated that, one fifth of the stroke patients had hemiplegia after the program. Whoever, there were highly statistically significant differences between pre and post program implementation as regarding to the number of bed ridden patients, so that it gives an impression about the efficiency of training caregivers in the basic skills of moving and handling, facilitation of activities of daily living, as well as simple nursing tasks reduces the burden of care and improves the quality of life in patients and caregivers.

Considering patients bedsores as complications of bedridden, before the program the patients who had bedsores were almost two thirds and after the program declined to one fifth. The majority of 16 patients' caregivers didn't know the proper care to be provided to manage bedsores before the program, while after the program less than three quarters of caregivers out of 10 patients with bedsores, knew all the proper care to be provided, so that these patients improved as the impact of health care provided for their caregivers.

The findings of the present study also showed that only one quarter of caregivers out of 36 did physiotherapy at home before the program and only one tenth out of 10 caregivers made active exercise for their patients, however after the program, the caregivers knowing the importance of physiotherapy and physical exercise, they started to do them although due to lack of enough time and enough financial aids for that, they were neglected. As regarding procedures as transferring the stroke patients to and from the chair, measuring blood pressure, catheter care, and enema, the statistical differences were highly significant between pre and post program.

Congruent with this study finding, all the family caregivers of the post-stroke patients in a study carried out by **Abd El Ghany (2006)** recorded significant improvement in knowledge and practices after health education sessions Similarly **Smith *et al.* (2006)** highlighted the importance of education and training of family caregivers of stroke patients regarding to knowledge that allow primary, secondary and tertiary preventive measures.

As a result the hypothesis of improvement of knowledge and practices of caregivers after counseling intervention program was supported by A booklet had an excellent source of information and reference to the caregiver and will alleviate much of the uncertainty and anxiety experienced.

In relation to the activities of daily living for post-stroke patients, the present study revealed that, pre-program implementation less than three quarters of patients who were dependent, after the program they represented less than two thirds of them. In relation to instrumental activities of daily living, the majority of the patients were dependent, after the implementation of the program they improved to reach more than one third of them with highly statistically significant differences between pre and post program application

The improvement of patients' independence level might have been related to the disease process, effect of treatment, efficient care provided at home, and a well designed system of medical follow up, also using some assistant home facilities. All of these revealed that the improvement of caregivers' awareness about importance of proper home care and its principals, which could be attributed to the impact of counseling intervention program.

This finding is supported with that findings of **Abd El Ghany (2006)** who found that 66% of the study sample was at the very severe disability, then improved to be at the severe disability then to moderate disability along a period of two months three visits, while 34% were at the moderate disability at the time of the first and second visits then improved to be at the mild disability at the third visit. This improvement doesn't mean enough or perfect care given to the patients, but due to disease process and the time factor

The results of present study denote that dependency level among stroke patient was significantly decreased in post program test. This related to that most of patients have acute onset of stroke and are recent diagnosis,

This result is contradicting with ***Kauhanen*** **(1999)** who found that the dependency level among stroke survivors significant increase due to physical disability from stroke Concerning to activities of daily living (physical activities) there was highly statistically significant difference between pre and post program: This may related of the most of patients was sharing in rehabilitative services early. the most of patient are psychology well being due to they have religious faith, and patients gains support through talking and express felling with other patients during counseling sessions.existence of emotional contact from family in patient social life have positive effect feeling of being loved and cared decrease depression and improving patient confidence in manage his \ her disability. Finally this improvement may be due to the availability to access information during counseling sessions that give patients accurate information about his \her case.

This result is accordance with **Samsa & Matchar (2004)** they concluded that functional status is associated with better quality of life.

This result is not consistence with **Vidovic et al (2007):** they found that the quality of life among stroke survivors is worse after six months.

About instrumental activities of daily living (telephoning, shopping, transportation medicating, preparing food) the results show that there was a significant change between pre and post program this pointed out the all family members are careful to provided best care to their patient.they always tries to involve patient in everything in door and out door to express to him is being valuable post stroke.this result may be related to the most of patient have a strong desire to be independent. The patient understand that his role was change post stroke and perceive a new way of looking for himself and the environment post stroke more over acceptance of ongoing functional problems and try to compensate his \ her life according to the disability.

This result is agreement with **Alokali, and ELshourabagy (2007)** they found in their study the patient quality of life regarding social life is significant improved during rehabilitation due to social support.

This result is contradicting with **Dobles et al. (2009)** stated that social life is generally deteriorated after stroke due to lack of life satisfaction.

The result of present study denote that there was a highly significant change in general self efficacy, these may be due to the all of the patients have a adaptive coping pattern to manage disability, need to compensate his or her disability,were have faith in God's(everything by hand of God 's) and most of the patients have internal motivate to resist all difficulties.in addition the patients have a significant improvement in physical function, his dependency level on other decrease.

Concerning self efficacy to psychosocial aspect there was highly significant change due to possible reasons. The family support during hospitalization and after discharge. Also the relative visitation increase more than the most of patients are financial stable and there was financial support from other family members, the patient and his family have a clear idea about the patient condition due explanation from health team members, the patients themselves try to gain some control in his life change.

Lastly the significant improvement in self -efficacy related to the counseling intervention enhances patients and relatives coping method because they are gain knowledge and skills to manage patient difficulties. In addition sharing in counseling session decrease feeling of withdrawal and isolation for patient.for families they gain confidence in their abilities to caring patients and gain support from health team members.

This result is consistent with **Bonetti & Johnston (2008)** in their study on 203 survivors stroke patient during rehabilitation phase between 1:6 months after discharge from hospital and found there was a significant improving in self efficacy due improving quality of life

The result is similar to **Oumu (2010)** he found that improving in self efficacy (self care is significant correlation between self efficacy, the patient quality of life and life satisfaction. The finding of present study denote that family caregivers have greater self efficacy in post test this due to counseling intervention helping to increase family caregiver knowledge and practice about caring stroke patients. This explanation is similar to **WU. (2005) and Chen et al (2006)** they conclude that increase family knowledge about stroke is positively related to care quality. This result is consistent with **Turner et al. (2007)** they explain the care giving may not be an entirely negative experience for all: in their study80% of stroke family caregiver said caring for stroke survivor increase their appreciation of life

The result show that the most of family caregivers are female have better relationship with patient, they able to provide mutual support to patient and are able to tolerate burden of care

This result in agreement with **Marimoto et al (2007)** they found 60:70% of family caregivers for stroke patients in Japan were female

This results is contradicting with **Parag, et al. (2008)** they found in their study the most of family caregivers have less self efficacy, lower level of quality of life and lower level subjective wellbeing

Conclusion

The present study concluded that the counseling intervention program had an efficient efficacy on improving caregivers' knowledge about stroke disease and practices about care of post-stroke disabled patients which led to a well observed improvement of dependence level of their post-stroke patients related to ADL and IADL. This is proved by the differences between pre and post, program which showed highly statistically significant differences in all the tested items such as patient self efficacy, patient quality of life and care givers self efficacy.

Recommendations

- Develop more specialist rehabilitation services for stroke patients and their care givers including an emphasis on recovering psychosocial roles and adaptation.
- distribution, and use of this Counseling Intervention program by all stroke care units, and increase the public awareness about the risk factors of stroke
- Develop a team of discharge plan in governmental and private hospitals to be responsible about providing the patients and their caregivers with the needed knowledge and practices which would be applied at home
- Further studies to explore goal-setting and patient and caregivers engagement in the Saudi context will aid in a deeper understanding of how to enhance self-efficacy with the use of goal-setting strategies. This could include video recording current goal-setting procedures, and interviewing health professionals, patients and family members about their perceptions of what motivates their engagement in rehabilitation.

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