

Effectiveness of Post Stroke Rehabilitation Program on Nurses' Knowledge at Middle Euphrates center for Neurosciences

Haneen Azeiz Nasser ¹, Dr. Jihad Jawad Kadhim ²

¹ MSN student at University of Kufa / College of Nursing, E-Mail: bhsam4523@gmail.com

² Ph. D. Assistant Professor at University of Kufa/ College of Nursing- Adult Nursing Department.

Abstract:

Introduction: Stroke is the main cause of death around the world. Stroke survivor experience long-term medical consequences and disabilities. Stroke rehabilitation program has been shown to be effective in terms of enhancing patient's quality of life as well as to be improving patient to be independent for activity of daily living. Nurses have an important role in rehabilitation of patient with post stroke. Nurses need to be knowledgeable, aware and qualified in order to provide high-quality care to achieve best patient's outcomes. Hence, providing an educational program regarding post-stroke rehabilitation can increase nurses' knowledge which in turn improve patient's outcomes. The aim of this study is to evaluate the effectiveness of post stroke rehabilitation program on nurses' knowledge.

Methodology: Quasi-experimental design has been adopted with non-probability (purposive sample) of 46 nurses who provide care for stroke patients at Middle Euphrates Center for neurosciences. The researchers assess nurses' knowledge before educational program and after implementing it by using the same structured questionnaire.

Results: The results of the study revealed that the level of nurses' knowledge at pre-test period were moderately adequate at mean scores ($x=63.5$ and $SD= 27.5$), while at posttest ($x= 87.5$, $SD=16.5$)

Conclusions: Based on the findings of the study the level of nurses' knowledge for caring of post-stroke patients have significantly improved statistically after implementing the educational program as compared with pretest period. The improvement in nurses' knowledge may reveal the effectiveness of post stroke rehabilitation program on the level of nurses' knowledge.

Keywords: Stroke patient, stroke rehabilitation, educational program.

Introduction:

Stroke is one of the leading causes of death in the (US). After a stroke, patients frequently experience long-term medical consequences and disabilities ⁽¹⁾ Stroke is most prevalent among adults and cause long-term disability around the world. Moreover, stroke is the third most common cause of death in developed countries. It will continue to be one of the top three global causes of death in 2040, according to a statistical report from the Global Burden of Diseases, Injuries, and Risk Factors study ⁽²⁾. Stroke defined as a sudden loss of brain function caused by a disruption in the brain's blood supply, result due to Ischemia (lack of

blood flow) or obstruction (thrombosis, arterial embolism) or a hemorrhage ⁽³⁾. Stroke rehabilitation programs are still the most common approach and effective therapy for post-stroke functional impairments and disability ^(4,5,6). The primary goals of rehabilitation program are to prevent complications, minimize impairment, and promote self-care tasks. Effective rehabilitation program can improve patient's functions and outcomes. The promising change in the Functional Independence Measures is the index of improvement ^(7,8). The patient's recuperation is greatly influenced by nursing care. Many organ systems are frequently harmed as a result of a stroke. Debilitating consequences

can be avoided with vigilant care and quick interventions. Nursing interventions focus on the complete individual during and after the acute episode. The nurse, in addition to providing physical treatment, supports and encourages healing by paying close attention to the patient and asking intelligent questions to learn the significance of the stroke^(9,10). Nurses are the healthcare providers who see the full impact of a stroke and should be equipped with the knowledge and abilities to help patients recover more quickly^(11,12). Due to the obvious rising number of stroke patients and the damaging consequences of the disease, there is an urgent need for more qualified nurses. Many researchers stressed the importance of up-to-date knowledge and improved clinical skills for healthcare professionals, particularly nurses who work with stroke patients⁽¹³⁾. As reported by Hamdy, et al., (2013) in a research on health-care employees, inclusive nurses at two university hospitals, have insufficient awareness of stroke, according to the researchers, who suggested that particular educational programs can be developed to improve stroke health care workers' knowledge in order to provide high-quality nursing care for patient with stroke⁽¹⁴⁾.

Methodology:

This study was conducted by using a quantitative, quasi-experimental, one group of pre-test and post-test-only design. This design was selected due to there was no randomized assortment of study sample into groups. The study is conducted at the Middle Euphrates Center for Neurosciences, Al-Najaf City, Iraq. The study was begun from October 15th, 2021 to July 19th, 2022, and it carried out in order to achieve the study

objectives. The main aim of this study assigned to evaluate the effectiveness of post stroke rehabilitation program on nurses' knowledge. The study is conducted among (46) nurses who were selected by purposive sample technique. The inclusion criteria were both gender nurses who provide rehabilitative care for post stroke patients at specified clinical sitting. The exclusion criteria were nurses who worked in an administrative capacity. A standardized self-administered questionnaire is utilized to measure nurses' knowledge at the pre-test (before educational intervention) and after program (post-test). The questionnaire and demographic data forms took about 20 to 30 minutes to complete these forms. Pre –test nurses' knowledge is assessed, and after two weeks of applied educational program the post test of knowledge is evaluated by using same questionnaire. The questionnaire consists of 30 questions subdivided into seven subdomains; general information on stroke rehabilitation (7 items), Diet (4 items), Range of motion exercises (4 items), Communication (4 items), Lifting and transferring (4 items), Positioning (4 items), Feeding through nasogastric tube (4 items). Multiple choice items are included in the questionnaire. three chooses with just one right answer, each correct answer received a '1' mark, while incorrect answers received a '0' mark. As a result, a maximum of 30 points can be used to interpret the level of knowledge. Level of nurses' knowledge classified based on the total number of correct answers for total questions. The level of nurses' knowledge was classified as follows: $\leq 50\%$ (Insufficient level of knowledge) , 51-75% (Moderately sufficient level of knowledge) , $>75\%$ (Sufficient level of knowledge).

Results:

Table (1): Socio-demographic variables of selected sample (N=46):

Demographic variables		Number	Percent
1-Age groups (years)	20-29	28	60.9
	30-39	11	23.9
	40 and more	7	15.2
2-Gender	Male	20	43.5
	Female	26	56.5
3-Level of Education	Secondary school	3	6.5

	Institute	12	26.1
	Collage of nursing	31	67.4
4-Number of years' experience in nursing	Less than 1 year	15	32.6
	1-2 years	13	28.3
	3-5 years	7	15.2
	More than 5 years	11	23.9
5-Services at NCS center	Less than 1 year	18	39.1
	1-2 year	10	21.7
	3-5 years	7	15.3
6-Participation in Educational Program	More than 5 years	11	23.9
	Yes	1	2.2
	No	45	97.8
7-Self-Education If answer is (yes) sources of information	Yes	4	8.7
	No	42	91.3
	Internet	4	8.7

Table (1) shows the results of socio-demographic variables reveals the largest percentage for age categories was indicated as 60.9% (n = 28) between 20 – 29 years old, 23.9 % (n = 11) between 30 – 39-year-old, 15.2% (n = 7) were 40 years and above. Most participants are females 56.5% (n = 26) and the remaining 43.5 % (n = 20) are males. In regard to their educational qualification, the majority of participants 67.4% (n = 31) were holding Bachelor of Science in nursing, 26.1% (n = 12) were holding Diploma in nursing, and 6.5% (n = 3) had nursing secondary school. None of the participants had postgraduate degree. Furthermore, the majority of the sample 97.8 (n = 45) did not

previously participate in training or educational program regarding PSR, and only 2.2% (n = 1) have attended educational program. 100% (n = 46) the participants did not follow guidelines in their clinical settings. The majority of the participants 91.3% (n = 42) were not self-educator, and the remaining 8.7% (n = 4) were self-educated. Regarding participant's nursing experience the study finding reveals the majority of participants 32.6% (n=15) were had less than one year in nursing work, while 28.3% (n=13) had between 1-2 years, 23.9% (n=11) had more than 5 years, 15.2% (n=7) had among 3-5 years.

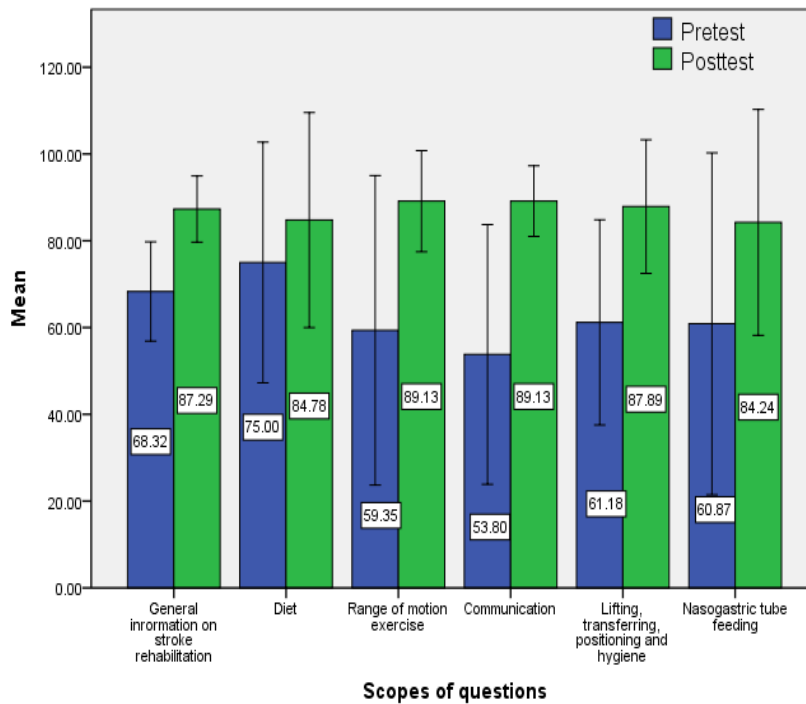


Figure (1) : Total evaluation of knowledge part (at pre-test and post-test) (n=46).

The result shows that the total percentage score of nurses' knowledge about -general information of post stroke rehabilitation , Diet, Range of motion exercises, communication , lifting ,transferring & positioning , nasogastric tube feeding - at

pre-test were (68.32% , 75.0% , 59.35% , 53.80% , 61.18% , 60.87%) respectively , While at post-test were (87.29% ,75.0% , 84.78% , 87,89% 89.13%) respectively .The results shows improvement in nurses' knowledge in post-test compared with pre-test based on the differences among total participants scores for each subdomain.

Table (2): Evaluation of nurses' knowledge at overall question at(pre-test and post –test):

Questions of knowledge		Pretest assessment			Posttest assessment		
		Total scores N=46	%	Outcome	Total scores	%	Outcome
Q1	General information on stroke rehabilitation	39.00	84.78	Passed	46.00	100.00	Passed
Q2		39.00	84.78	Passed	43.00	93.48	Passed
Q3		36.00	78.26	Passed	36.00	78.26	Passed
Q4		31.00	67.39	Passed	41.00	89.13	Passed
Q5		21.00	45.65	Failed	32.00	69.57	Passed
Q6		25.00	54.35	Passed	41.00	89.13	Passed
Q7		29.00	63.04	Passed	42.00	91.30	Passed
Q8	Diet and range of motion and exercise	40.00	86.96	Passed	43.00	93.48	Passed
Q9		16.00	34.78	Failed	22.00	47.83	Failed
Q10		45.00	97.83	Passed	45.00	97.83	Passed
Q11		37.00	80.43	Passed	46.00	100.00	Passed
Q12		17.00	36.95	Failed	33.00	71.74	Passed
Q13		36.00	78.26	Passed	44.00	95.65	Passed
Q14		31.00	67.39	Passed	43.00	93.48	Passed

Q15		39.00	84.78	Passed	44.00	95.65	Passed
Q16	communication	35.00	76.09	Passed	41.00	89.13	Passed
Q17		19.00	41.31	Failed	40.00	86.96	Passed
Q18		37.00	80.43	Passed	46.00	100.00	Passed
Q19		8.00	17.39	Failed	37.00	80.43	Passed
Q20		Lifting and transferring of patients	20.00	43.47	Failed	39.00	84.78
Q21	27.00		58.70	Passed	42.00	91.30	Passed
Q22	14.00		30.43	Failed	20.00	43.47	Failed
Q23	9.00		19.56	Failed	22.00	47.83	Failed
Q24	42.00		91.30	passed	46.00	100.00	Passed
Q25	41.00		89.13	Passed	46.00	100.00	Passed
Q26	44.00		95.65	Passed	46.00	100.00	Passed
Q27	NG tube feeding		46.00	100.00	Passed	46.00	100.00
Q28		10.00	21.74	Failed	21.00	45.65	Failed
Q29		15.00	32.61	Failed	42.00	91.30	Passed
Q30		41.00	89.13	Passed	46.00	100.00	Passed
Overall passing score				66.67	Overall passing		86.

Table (2) shows the total nurses' percentage scores about total questions at knowledge part , (Q=30) , which divided into –passed and failed- each one of these question scores indicated the total participants responses for this question (N=46) .The result revealed that failed only at 4 of 30 questions .The study finding showed improvement of

participant knowledge at post -test compared with pre-test based on number of passed questions .

Table (3): The relationship between of nurses' knowledge and demographic variables of them ;bases on logistic regression analysis .

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1^a								
Age	.200	.212		1	.345	1.221	.807	1.848
gender	-.662	1.533	.186	1	.666	.516	.026	10.411
Education qualification	.524	.934	.607	1	.031	.264	.332	12.907
Experience in nursing Services at MEC for neurosciences	-18.890	40193.323	.000	1	1.000	.000	.000	.
Attended program	17.931	40193.323	.000	1	1.000	1.756	.000	.
Self-education	-17.785	58667.331	.000	1	1.000	.000	.000	.
Constant	-17.324	25504.448	.000	1	.999	.000	.000	.
	-18.397	14521.669	.000	1	.999	.000	.000	.

age	105.487	124602.769	.000	1	.999	6.492E+45		
-----	---------	------------	------	---	------	-----------	--	--

a. Variable(s) entered on step 1: Age, gender, education level, experience, services at MEC, attended program, self-education .

Table (3) shows that there is no significant relationship between the level of nurses' knowledge and the demographic variable of them , except there was significant relation

between nurses' knowledge and their educational qualification at P value less than 0.05.

Table (4): Overall Evaluation of Nurses' Knowledge at the (pre-test & post-test):

Paired Samples Statistics					
Group		Mean	N	Std. Deviation	P value
Pair 1	Knowledge at pre-test	63.4187	30	27.49823	0.0003
	Knowledge at post- test	87.1790	30	16.27615	

Discussion:

Regarding demographic variables of participants the study findings revealed that the majority of nurses (60.9%) was within the age group of 20 – 29 years , (23.9%) was in the age group 30 – 39 years, and the minority (15.2%) was in the age group 40 and above, this could be result of most of these participants were graduated newly and young .This finding is consistent with many previous studies ^(15,16) who found in their studies that the most of nurses provide care for stroke patients were young and newly graduated .Concerning with participants' gender, the majority of participants (56.5%) are female and the remaining (43.5%) are male. The result of current study is in the same line with findings of many studies ^(17,18,19,20) who found in their studies that the majority of the nurses were female.According to the participants' educational qualifications, the majority of participants (67.4%) had bachelor's degree in nursing, (26.1%) had diploma degree and less number (6.5%) had secondary school nursing. This result of study is at line with Havva, Nurgul (2021) who conducted descriptive study to evaluate the evidence-based acute stroke knowledge level in nurses, the result revealed that 64.9% were had bachelor's degree in nursing.The study finding revealed that the majority of the participants (97.8%) had never attended an PSR educational program, and only (2.2%)

had attended one. This study's findings are consistent with ⁽²¹⁾ who found that the majority of the studied nurses didn't attend any training classes related to CVS. According to the participants' responses, nearly all nurses (91.3%) did not take self-education responsibility for their core jobs as nurses caring for post-stroke patents, and just 8.7 % used the internet to update their knowledge and increase their skills. This may be one of the key reasons for having moderate level of knowledge.In regard to participants' experiences in nursing, the findings revealed that (39.1%) of nurses had less than one year of experience in neuroscience center, (23.9%) had more than five years of total experience in neuroscience center, and the majority of nurses (32.6%) had less than one year of total their experience in nursing. This finding is agreement with results of many studies ^(22,23,24,25) , who found that most of nurses caring of patients with CVAwere newly graduated and have few years of experience.Regarding nurses' knowledge before implementation of Post Stroke Rehabilitation (PSR) educational program, the current study findings revealed that overall knowledge score at the pre-test was moderate level, the mean score of nurses' knowledge at pre-test was (63.4187) with (SD = 27.49823). This result is consistent with study conducted by El-Sayed, (2012) who exposed that two third of the nurses had unsatisfactory level of total knowledge

about caring of stroke patients at ICU. In this comport, Aly, (2010) who found nurses' knowledge of stroke care was found to be below average in more than half of the nurses. However, The mean score of nurses' knowledge at post-test was (87.1790) with (SD= 16.27615), the finding of current study revealed that there were highly statistical significant increase in nurses' knowledge regarding PSR after implementing educational program at p value less than 0.5 (p= 0,0003) these results were at accordance with Damkiange et al., (2015) who discovered that after adopting educational intervention, there was statistically significant improvement in nurses' knowledge in most areas. At same line, Zaidan et al., (2018) who found after implementing of nursing management protocol, there was highly statistically significant increase in nurses' knowledge. In this comport Baker, (2012) found nurses who care for stroke patients require specialized education and training in order to provide patient-centered care and avoid secondary complications^(26,27,28). In the same line Jouria and Katz (2013) who recommended that nurses who care primarily for stroke patients should attend training program sponsored in-services, seminars and lectures, three times per year. Such nurses should take part in continuing education units or other educational programs in regard cerebrovascular disease annually^(29,30).

Conclusion:

Based on the findings of the current study, it can be concluded that the level of nurses' knowledge for caring of post-stroke patients have improved statistically significantly after implementation of educational program compared with before implementing the program; which revealed the effectiveness of post stroke rehabilitation program on the level of nurses' knowledge.

References

1. Aly E.M. (2010): Establishing standards of nursing care for stroke patients, Unpublished Doctoral Thesis in Medical Surgical Nursing, Faculty of Nursing, Alexandria University, Egypt pp. 80-85.
2. Pollak J, Doyle KP, Mamer L, Shamloo M, Buckwalter MS. Stratification substantially reduces behavioral variability in the hypoxic-ischemic stroke model. *Brain Behav.* 2012;2 (5):698-706. [[PubMed](#)] [[Google Scholar](#)].
3. Morreale M, Marchione P, Pili A, Lauta A, Castiglia SF, Spallone A, et al. Early versus delayed rehabilitation treatment in hemiplegic patients with ischemic stroke: proprioceptive or cognitive approach? *Eur J Phys Rehabil Med.* 2016;52:81–89. [[PubMed](#)] [[Google Scholar](#)].
4. Ahmed MM, Younis NM, Hussein AA. Violence towards nurses staff at teaching hospitals in Mosul City. *Indian J. Forensic Med. Toxicol* 2020;14(3):2598-603.
5. Nasir Muwfaq Younis, Mahmoud Mohammed Ahmed, and Ahmed Ali Hussein. Nurses' knowledge, attitude and practice towards preparedness of disaster management in emergency of mosul teaching hospitals. *Medico-Legal Update*, 2020, 20(3), pp. 775–779.
6. Younis NM, Mahmoud M, Ahmed A, et al. University Students' Attitude Towards E-Learning. *Bahrain Medical Bulletin* 2021;43(2):460-2.
7. Muwfaq YN, Ahmed MM, Abdulsalam RR. Assessing Quality of Life in Palliative Care. *Bahrain Medical Bulletin* 2021;43(3):594-6.
8. Hinkle, J.; Cheever, K.: Brunner and suddarth Text Book of Medical Surgical Nursing, 13th edition, 2014, Lippincott Williams and Wilkins, China, p. 1972, 1973.
9. Allsasmah, E. A. A. (2020). Measuring Knowledge of Jordanian Nurses Working in Critical Care Units toward Stroke Patients. *World Science*, 8 (60).
10. Baatiema, L., Otim, M. E., Mnatzaganian, G., Aikins, A., Coombes, J., & Somerset, S. (2017). Health professionals' views on the barriers and enablers to evidencebased practice for acute stroke care. *Implementation Science*, 12(74).
11. Naji AB, Ahmed MM, Younis NM. Adherence the Preventive Measure Against

- for COVID-19 among Teachers at University of Mosul. In *J Med Tox Leg Med* 2021;24(3&4).pp:273_277.
12. Mahmoud Mohammed Ahmed, Nasir Muwfaq Younis and Ahmed Ali Hussein. Prevalence of Tobacco use among Health Care Workers at Primary Health care Centers in Mosul City. *Pakistan Journal of Medical and Health Sciences*, 2021, 15(1), pp. 421–424
13. Nasir Muwfaq Younis, Mahmoud Mohammed Ahmed and Nawaf Mohammed Dhahir. Prevalence of Coronavirus among Healthcare Workers. *International Journal of Medical Toxicology & Legal Medicine*. Volume 24, Nos. 1-2, Jan-June 2021. pp:267-269.
14. Hamdy, H., Abdel-Monem, A., Emar, T.H, Moustafa, R.R., Abdel Bar, A., Abuzeid, Sh.H., El Sherbiny, N., Abdel Ghaffar, H., & El-Mously, Sh. (2013). Knowledge and Attitudes towards Stroke among Workers in Two University Hospitals. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery* Vol.50 Issue:1.
15. Abd-Alla, K., Tawfeek, S., Mahdy, M., Ebraheim, M., & Elsayed, E. (2016). Effect of Educational Program on Nurses' Performance Caring for Patients with Cerebrovascular Stroke. *Egyptian Journal of Health Care*, 7(4): 60-80.
16. Maarouf, D.M. (2012): Nurses' Performance for Patients with Traumatic Head Injury during Golden Hour Unpublished Master Thesis in Medical Surgical Nursing, Faculty of Nursing, Ain-Shams University, Egypt pp. 97-101.
17. Elsayed, W.M. (2009): Effect of An Educational Program on Nurses' Performance during The Golden Hour of Care for traumatized patients, Unpublished Doctoral Thesis, Faculty of Nursing, Ain Shams.
18. Taha, H.A. (2007): Nurses' Performance in Emergency Management of Patients with Spinal Cord Injury, Unpublished Master.
19. Ahmed Salem Abbas, Nasir Muwfaq Younis. Efficacy of Pender's Health Promotion-based Model on Intervention for Enhancing University of Mosul Hypertensive Employees' Eating Behaviors: A randomized Controlled Trial. *Revis Bionatura* 2022;7(3) 35.
20. Nasir Muwfaq Younis, Mahmoud Mohammed Ahmed, Nawaf Mohammed Dhahir. Knowledge and Attitude toward older adults among Nursing Students. 2021. *P J M H S* Vol. 15, NO. 3, pp:683_685.
21. El Sayed I. E. (2012): Assessment of Nurses' Performance Caring for patients with Cerebrovascular Stroke in Intensive Care Unite, Unpublished Master Thesis in Medical Surgical Nursing, Faculty Of Nursing, Ain-Shams University, Egypt P. 103.
22. Gurjar Nema Ram (2019). Effectiveness of Supplementary Training on Knowledge and Attitude Regarding Comprehensive Care of Acute Ischemic Patient among Nursing Staff, *International Journal of Health Sciences & Research* (www.ijhsr.org) 90 Vol.9.
- 23- Jouria J. and Katz M. (2013): Comprehensive Acute Stroke Care 2013, WILD IRIS MEDICAL EDUCATION, INC. available at http://www.nursingceu.com/courses/422/Stroke_WildIrisMedicalEducation.pdf.
24. Mahmood Mohammed Ahmed, Nasir Muwfaq Younis, Nawaf Mohammed Dhahir, Kareem Nasir Hussain. Acceptance of Covid-19 vaccine among nursing students of Mosul University, Iraq. *Rawal Medical Journal*: Apr-Jun 2022. Vol. 47, No. 2, pp:254_258
25. Muwfaq Younis N, Efficacy of Health Beliefs Model-Based Intervention in Changing Substance Use Beliefs among Mosul University Students: A Randomized Controlled Trial. *Revis Bionatura* 2022;7(2) 35. <http://dx.doi.org/10.21931/RB/2022.07.02.35>
26. Damkliang J., Considine J., Kent B, Street M (2015): Using an evidence-based care bundle to improve Thai emergency nurses' knowledge of care for patients with severe traumatic brain injury. *Nurse*

Education in Practice 15 (2015) 284e292.

27. Baker, R., Camosso-Stefinovic, J., Gillies, C., Shaw, E.J., Cheater, F., Flottorp, S., & Robertson, N. (2010). Tailored interventions to overcome identified barriers to change: Effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews*, (3), CD005470. doi:10.1002/14651858.

28-Foreman KJ, Marquez N, Dolgert A, et al. Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death:reference and alternative scenarios for 2016-40 for 195

countries and territories. *Lancet*. 2018;392:2052-90.

29- Zidan,S., Youssef,W,.A .Abd-Allah ,F.O.A.D, El-Feky ,H.A.(2017):Impact of designed acute stroke management protocol on nurses' knowledge and practices . *Impact Journals* 5(10),23-40.

30. Shatha Abdul Rahman H. Al-Ghurairi, Nasir Muwfaq Younis , Mahmoud Mohammed Ahmed.Prevalence of weight gain among students of Mosul University, Iraq during quarantine 2020. *Rawal Medical Journal*: 2022. Vol. 47, No. 3.