

Prevalence of urinary incontinence and quality of life in stroke patients in Punjab.

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Abstract: Urinary incontinence (UI) is a common and distressing problem after stroke. Urinary incontinence means a person leaks urine. it can happen to anyone, urinary incontinence, also known as overactive bladder, is more common in older people. Bladder control issues can be embarrassing and cause people to avoid their normal activities. The main objective of this study is to calculate the prevalence of urinary incontinence in stroke patients. To determine the quality of life in stroke patients. Data was gathered from females and males with stroke from Gujrat, Gujranwala, Lahore. Non-probability convenient sampling was used to collect data. Analytical cross-sectional study was conducted on 228 patients. To check urinary incontinence ICIQ-UI short form and quality of life , SF-36 was used. A cross-sectional study was conducted to carry out the research. 228 subjects were randomized in this study design. The ICIQ-UI short form and SF-36 was used to check the urinary incontinence (UI) and its impact on quality of life (QOL). The outcome of this study revealed that 92.1% patients have moderate urinary incontinence and the mean score for domains of quality of life are maximum in role limitations due to emotional problems. Prevalence of urinary incontinence among stroke patients is moderate and quality of life was more affected among stroke patients due to emotional problems.

Index Terms- urinary incontinence, Quality of life, prevalence, patients with stroke.

I. INTRODUCTION

Urinary incontinence is the involuntary loss of urine that is a social or hygienic problem. The complaint of any involuntary leakage of urine. urinary incontinence effect on quality of life. The incidence of urinary incontinence increases with age.⁽¹⁾ Urinary

incontinence is two to five times more common in women.⁽²⁾

Urinary incontinence affects the life of the patients.⁽³⁾ urinary incontinence after stroke has negative effects which lead to lifestyle changes for patients and their caregivers.⁽⁴⁾ Stroke is defined it occurs when something blocks blood supply to part of the brain or when blood vessel in the brain bursts.⁽⁵⁾ Hemorrhagic stroke generally has a worse prognosis Because the pathophysiological mechanism of ischemic stroke is substantially different from hemorrhagic.⁽⁶⁾ Stroke is the second leading cause of death worldwide.⁽⁷⁾ Cerebral stroke can cause of disability depending on the stage ,severity and localization of cerebral impairment, stroke can affect consciousness, sensory perception, language and cognitive and motor abilities.⁽⁸⁾

The interruption or reduction of the flow, to the brain through blood vessels leading to the poor perfusion of brain tissue.⁽⁹⁾ Ischemic stroke is caused by vascular occlusion or stenosis of an artery whereas hemorrhagic stroke is triggered by vascular rupture, resulting in intraparenchymal or subarachnoid hemorrhage.⁽¹⁰⁾ Acute ischemic stroke is a sudden neurologic dysfunction caused by focal brain ischemia lasting more than 24 hours.⁽¹¹⁾⁽¹²⁾ The most common disorder caused by stroke is motor impairment, which typically affect the control of movement on one side of the body. stroke survivors could recover independent walking by six months.^(13, 14) Common complications which develop as a consequence of impairments related to stroke include venous, urinary tract infarctions, aspiration pneumonia, pressure sores, spasticity and falls.⁽¹⁵⁾ It develops artery in the brain leaks or bursts, causing bleeding inside or near the surface of the brain.^(16, 17) Urinary incontinence following stroke is a common problem affecting more than one-third of acute stroke patients and persisting in up to a quarter at 1 year.⁽¹⁸⁾

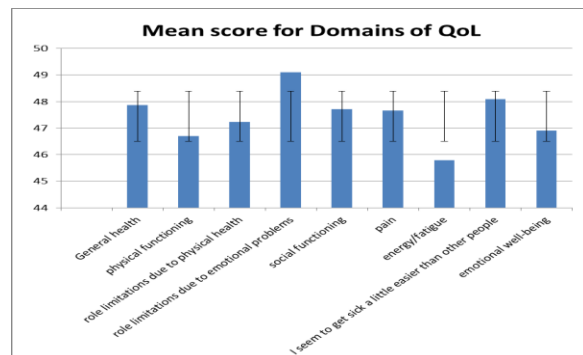
Association between the development of urinary incontinence and the presence of certain neurological deficits, including moderate or severe motor deficits, aphasia and the combination of hemiplegia, proprioceptive deficit.⁽¹⁹⁾ Stress urinary incontinence is the most common subtype of urinary incontinence.⁽²⁰⁾ Our aim to find the prevalence in hemiplegic patients.

II. MATERIAL AND METHODS

It was descriptive cross-sectional study. Data will be collected from Gujranwala, Lahore, Gujrat. Non probability sampling technique was used. 288 patients of stroke including both genders and no age limit were included I study. Patients with transient ischemic attack and any other co-morbidity (CKD) were excluded from study. All ethical considerations and written consent were used prior collecting data. First ICIQ-UI short form is used for urinary incontinence. start with demographic data (name, date of birth, gender) will be taken. Then check the quantity of urine leakage in stroke patients through ICIQ-UI short form. Secondly SF-36 questionnaire is used for quality of life (QOL). Start with demographic data(name, date, age, gender) will be taken. Then check the general health, limitations of activities, emotional health problems, pain and social activities. Fill both the ICIQ-UI short form and SF-36 to check the urinary incontinence(UI) and its impact on quality of life(QOL). Data was entered and analyzed using statistical package for social sciences(SPSS) software version20. For descriptive analysis mean and standard deviation was calculated for quantitative variables whereas frequency and percentages were calculated for qualitative variables. For inferential statistics appropriate statistical test was applied. All results were calculated at 95% confidence interval and p-value < 0.05 will be considered as a significant value.

III. RESULTS

During research period 228 stroke patients from the Gujrat, Gujranwala and Lahore were surveyed to determine the prevalence of urinary incontinence and quality of life in stroke patients in Punjab. Mean age and std. Dev of participants was 52 ± 8.994 . The mean and std. Dev of BMI of participants was 29.46 ± 4.151 . The mean and std. Dev. Of ICIQUI score of



participants was 9.47 ± 1.925 . The ICIQUI level of participants was 3.509 (slight) 92.11 (moderate) 4.386 (severe). The stroke participants mean and std.

Fig. 1 mean score of domains of QOL

Deviation is 47.8684 ± 11.06330 in general health, 46.7018 ± 12.28654 in physical functioning, 47.2281 ± 11.56444 in role limitations due to physical health, 49.1009 ± 10.42800 in role limitations due to emotional problem, 47.7105 ± 10.97713 in social functioning, 47.6623 ± 10.83212 in pain, 45.7895 ± 12.15826 in energy and fatigue, 48.0833 ± 11.09737 in it seem to get sick little easier than other people, 46.9035 ± 11.07839 in emotional well-being. (Table 1) The mean score for domains of quality-of-life maximum is role limitations due to emotional problems.(Fig. 1) The total 228 stroke patients in which 8 (3.5%) patients have slight urinary incontinence and 210 (92.1%) patients have moderate urinary incontinence and 10 (4.4%) patients have severe urinary incontinence.

Table 1: Means and Std. Dev. of different variables.

Statistics of Variables	N=228
	Mean \pm S.D
Age of participants in years	52.67 \pm 8.99
Body mass index (Kg/m ²)	29.46 \pm 4.15
ICIQUI Score	9.47 \pm 1.92
General health	47.87 \pm 11.06
physical functioning	46.7 \pm 12.28
role limitations due to physical health	47.22 \pm 11.56
role limitations due to emotional problems	49.1 \pm 10.42
social functioning	47.71 \pm 10.97
pain	47.66 \pm 10.83
energy/fatigue	45.79 \pm 12.16
I seem to get sick a little easier than other people	48.08 \pm 11.09
emotional well-being	46.90 \pm 11.07

Table 2: ICIQUI Level of urinary incontinence in stroke patients.

ICIQUI Level	Frequency	Percent
(1-5) Slight	8	3.5
(6-12) Moderate	210	92.1
(13-18) Severe	10	4.4
Total	228	100.0

IV. DISCUSSION

A cross-sectional study was conducted to carry out the research. 228 subjects were randomized in this study design. The ICIQ-UI short form and SF-36 was used to check the urinary incontinence (UI) and its impact on quality of life (QOL). The outcome of this study revealed that 92.1% patients have moderate urinary incontinence and the mean score for domains of quality of life are maximum in role limitations due to emotional problems.

Previous study conducted by H. Nakayama to investigate in a community-based population the prevalence of both urinary (UI) and fecal (FI) incontinence and to analyze risk factors by means of multivariate analysis. The study concluded that on admission in the acute state, almost half of an unselected stroke population have UI and/or FI.⁽²¹⁾ Now current study says that people with stroke shows moderate urinary incontinence.

A retrospective observational study was performed to investigate the prevalence of urinary incontinence (UI) among home hospice patients. Most of the study patients were female (59%) and aged ≥ 75 yr. Approximately one-third of patients were diagnosed with UI during their hospice care. Female sex, age, dementia, and stroke were associated with a greater risk of UI. Guidelines are required for UI diagnosis and mitigation in home hospice care.⁽²²⁾ Current study also reports that urinary incontinence is more prevalent among stroke patients.

Another study conducted by Gulshan Arkan to determine the experience related to urinary incontinence of stroke patients. The study revealed that stroke patients needed help and support for urinary incontinence management. Nurses should provide information about management and urinary incontinence after stroke.⁽²³⁾

Walaa Aly et al conducted a study to detect the prevalence and risk factors of UI and its effect on quality of life (QOL) among frail elderly females. Arabic version of ICIQ-UI SF, assessment of QOL by using the Arabic version of Incontinence Impact Questionnaire Short Form (IIQ-7 SF), and complete urine analysis was performed. Urinary incontinence is

prevalent in frail elderly females. Mixed UI, compared with other types, has a significant negative impact on all domains of quality of life.⁽²⁴⁾ The current study favors the previous study that QOL in role limitations due to emotional problems are more prevalent.

Another study was performed to determine not only prevalence rates of urinary incontinence (UI) in nursing home residents but also factors influencing these prevalence rates, and to provide an overview of risk factors associated with UI in this group. A systematic review was performed using multiple databases including MEDLINE, EMBASE, CINAHL, PsycINFO and the Cochrane Library from January 1997 to April 2008. Although important risk factors similar to those in the general population have been identified.⁽²⁵⁾

RECOMMENDATION(S):

Further research should be conducted to determine the long-term consequences of stroke on urinary incontinence. Sample population should comprise of approximately equal number of both male and female.

LIMITATION(S):

Effects were not categorized according to chronicity of the condition. Data was not equally distributed for males and females so outcomes cannot be differentiated for genders. Cooperation of patient and caregivers was one of the major problems faced while collecting data.

V. CONCLUSION:

Prevalence of urinary incontinence among stroke patients is moderate among current study population and quality of life was more affected among stroke patients due to emotional problems.

Conflict of Interest

There was no conflict of interest.

Financial Statement

No fundings were given by any authorities; it was a project thesis of doctor of physical therapy.

Data availability

Data will be provided on the demand by corresponding author.

REFERENCES:

1. Minassian VA, Drutz HP, Al-Badr A. Urinary incontinence as a worldwide problem. *International Journal of Gynecology & Obstetrics*. 2003;82(3):327-38.

2. Akkus Y, Pinar G. Evaluation of the prevalence, type, severity, and risk factors of urinary incontinence and its impact on quality of life among women in Turkey. *International urogynecology journal*. 2016;27(6):887-93.
3. TRANTAFYLIDIS SC-A. Impact of urinary incontinence on quality of life. 35 Editorial 36 *Pelvic Floor Digest* 37 Recto Anal Repair (RAR): a viable new treatment option for high-grade hemorrhoids One year results of a prospective study ULRIKE SATZINGER, WOLFGANG FEIL, KARL GLASER 43 Cure of childhood urgency incontinence with a midurethral sling PETER PETROS.51.
4. Arkan G, Beser A, Ozturk V. Experiences related to urinary incontinence of stroke patients: A qualitative descriptive study. *Journal of Neuroscience Nursing*. 2018;50(1):42-7.
5. Krishna KVS, Soujanya VH, Geethika G, Sunil PS, Priyanka P. Stroke its types & risk factors: An overview. 2018.
6. Xu R, Wang Q, Wei J, Lu W, Wang R, Liu T, et al. Association of short-term exposure to ambient air pollution with mortality from ischemic and hemorrhagic stroke. *European Journal of Neurology*. 2022.
7. Ahangar AA, Saadat P, Heidari B, Taheri ST, Alijanpour S. Sex difference in types and distribution of risk factors in ischemic and hemorrhagic stroke. *International Journal of Stroke*. 2018;13(1):83-6.
8. Chiaromonte R, Bonfiglio M, Leonforte P, Coltraro GL, Guerrero CS, Vecchio M. Proprioceptive and Dual-Task Training: The Key of Stroke Rehabilitation, A Systematic Review. *Journal of Functional Morphology and Kinesiology*. 2022;7(3):53.
9. Uwishema O, Berjaoui C, Correia IFS, Anis H, Karabulut E, Essayli D, et al. Current management of acute ischemic stroke in Africa: a review of the literature. *European journal of neurology*. 2022.
10. Chidambaram S, Rathipriya A, Mahalakshmi A, Sharma S, Hediya T, Ray B, et al. The Influence of Gut Dysbiosis in the Pathogenesis and Management of Ischemic Stroke. *Cells* 2022, 11, 1239. s Note: MDPI stays neutral with regard to jurisdictional claims in published ...; 2022.
11. Mendelson SJ, Prabhakaran S. Diagnosis and management of transient ischemic attack and acute ischemic stroke: a review. *Jama*. 2021;325(11):1088-98.
12. Maurer V, Stahlberg J, Schiffmann I, Marks P, Rosenbaum CM, Soave A, et al. Continence and complication rates of artificial urinary sphincter devices (AMS 800) for Parkinson and stroke patients with incontinence after prostate surgery: retrospective analysis of a prospective database. *Urologia Internationalis*. 2021;105(3-4):225-31.
13. Wang F-C, Chen S-F, Li Y-C, Shih C-J, Lin A-C, Lin T-T. Gait Training for Hemiplegic Stroke Patients: Employing an Automatic Neural Development Treatment Trainer with Real Time Detection. *Applied Sciences*. 2022;12(5):2719.
14. Kachhwani N, Qureshi MI, Kovala RK. Effectiveness of proprioceptive neuromuscular facilitation techniques in Improving muscle strength in a patient with hemiplegia. *Res Dev*.11:45-7.
15. Gunawardhana C. Post-Stroke Complications and Prognostication. *Guide to Stroke Rehabilitation for Healthcare Professionals*.20.
16. Landing A, Hills C, Village M, Mall M, Place M, Plaza S, et al. *Cerebrovascular Disease and Stroke*.
17. Mc Sharry J, Baxter A, Wallace LM, Kenton A, Turner A, French DP. Delay in seeking medical help following transient ischemic attack (TIA) or "mini-stroke": a qualitative study. *PLoS One*. 2014;9(8):e104434.
18. Mehdi Z, Birns J, Bhalla A. Post-stroke urinary incontinence. *International Journal of Clinical Practice*. 2013;67(11):1128-37.
19. Gelber DA, Good DC, Laven LJ, Verhulst SJ. Causes of urinary incontinence after acute hemispheric stroke. *Stroke*. 1993;24(3):378-82.
20. Pandey D, Maturi C, Dhakar BPS, Jain G, Kyalakond K. Interventions and quality of life in stress urinary incontinence. *Gynecology and minimally invasive therapy*. 2019;8(3):106.
21. Nakayama H, Jørgensen H, Pedersen P, Raaschou H, Olsen T. Prevalence and risk factors of incontinence after stroke: the Copenhagen Stroke Study. *Stroke*. 1997;28(1):58-62.
22. Chughtai B, Thomas D, Russell D, Bowles K, Prigerson H. Prevalence of and Risk Factors for Urinary Incontinence in Home Hospice Patients. *European urology*. 2019;75(2):268-71.
23. Arkan G, Beser A, Ozturk V. Experiences Related to Urinary Incontinence of Stroke Patients: A Qualitative Descriptive Study. *The Journal of neuroscience nursing : journal of the American Association of Neuroscience Nurses*. 2018;50(1):42-7.
24. Aly WW, Sweed HS, Mossad NA, Tolba MF. Prevalence and Risk Factors of Urinary Incontinence in Frail Elderly Females. *Journal of aging research*. 2020;2020:2425945.
25. Offermans MP, Du Moulin MF, Hamers JP, Dassen T, Halfens RJ. Prevalence of urinary incontinence and associated risk factors in nursing home residents: a systematic review. *Neurourology and urodynamics*. 2009;28(4):288-94.

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Running Title: Prevalence of urinary incontinence and quality of life in stroke patients in punjab.