

PREVALENCE OF XEROSTOMIA AMONG SPINAL CORD INJURY (SCI) AND THEIR ORAL HEALTH RELATED QUALITY OF LIFE

By

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Title: "Prevalence of Xerostomia among Spinal Cord Injury (SCI) and their Oral Health Related Quality of Life"

Aim of the study: To determine the number of people having xerostomia among Spinal Cord Injury (SCI) and their oral health related quality of life.

Methodology: This is a quantitative type of cross sectional survey study where 145 SCI patients were assigned through hospital based randomization from Centre for the Rehabilitation of the Paralysed (CRP), Savar. In SCI patients, dry mouth was assessed by a Global single question and Xerostomia Inventory (XI) and Oral Health Impact Profile (OHIP-14) were used to assess oral health related quality of life (OHRQoL) as data collection instruments for the study. Data was analyzed by using descriptive statistical analysis, one way manova test and correlation coefficient test with SPSS (SPSS= Statistical Package for the Social Sciences).

Result: The majority of the participants about 69% (100) reported to have xerostomia or dry mouth in people with SCI. The analysis of one way manova revealed significant differences between the mean subscale score in each dimension of the OHIP-14, in the participants with dry mouth and without dry mouth (P<0.001). Using correlation coefficient analysis, it shows that there was a statistically significant positive relationship between xiscore and ohiptotal at the (P<0.01).

Conclusion: Xerostomia may occur in patient with SCI as an associated secondary complication from various reasons. Among 145 participants maximum of the participants were male which is about 84% (122) and 16% (23) were female. The maximum participants were aged (20 to 34) years which were 35.20% (51). Researcher found that dry mouth had strong association with SCI. Almost 69% (100) of the participants with SCI had dry mouth among 145 participants who took part in this study. Xerostomia was strongly and independently associated and correlated with oral health related quality of life. So SCI patients are more prone to experience dry mouth and to have poor oral health quality of life (OHRQoL).

Limitation:

This is the first study of xerostomia among SCI and their oral related quality of life in Bangladesh. Naturally the investigator had to face some barriers and limitations. The barriers and limitations which the investigator had faced were;

- The investigator had used hospital based randomization sampling (CRP savar center) which limited the access of collecting data from different location
- The study required large sample where the investigator collected 145 data successfully which is not enough to generalize the result

Recommendation:

Prior to this no study has been done on xerostomia among SCI patient in Bangladesh. This is the first ever that a study is taking place which aimed to cover all the possible general findings with xerostomia. As recommendation;

• This study was done during a short period of time with total 145 participants. So this same study can be done using large number of participants.

- This study used hospital based randomization (at CRP savar center) as sampling procedure. The can be done using two or three location while using simple random sampling as sampling procedure.
- Further study can be conducted on measuring xerostomia among SCI who are admitted into intensive care or in post-operative care and measuring the impact on their oral health related quality of life.

References:

- Bailey, D. M. (Eds). (1997). Research for the health professionals: a practical guide, (2nd ed.). USA: Davis Company.
- Cassolato, S. F., & Turnbull, R. S. (2003). Xerostomia: clinical aspects and treatment. *Gerodontology*, Vol. 20, pp. 64–77. https://doi.org/10.1111/j.1741-2358.2003.00064.x
- Chen, Y., Tang, Y., Vogel, L. C., & Devivo, M. J. (2002). Causes of spinal cord injury. *Medicine Today*, *3*(6), 7. https://doi.org/10.1310/sci1901-1
- Das, P., & Challacombe, S. J. (2016). Dry Mouth and Clinical Oral Dryness Scoring Systems. *Primary Dental Journal*, 5(1), 77–79.
- DePoy, E, & Gitlin, L. N. (Eds.). (1998). *Introduction to research : Understanding and applying multiple strategies* (2nd ed.). New York: Mosby.
- Dumont, R. J., Okonkwo, D. O., Verma, S., Hurlbert, R. J., Boulos, P. T., Ellegala, D. B., & Dumont, A. S. (2001). Acute spinal cord injury, part I: Pathophysiologic mechanisms. *Clinical Neuropharmacology*, 24(5), 254–264. https://doi.org/10.1097/00002826-200109000-00002
- Das, Piali, and Stephen J. Challacombe. 2016. "Dry Mouth and Clinical Oral Dryness Scoring Systems." *Primary Dental Journal*, 5(1):77–79.
- Fornari, C. B., Bergonci, D., Stein, C. B., Agostini, B. A., & Rigo, L. (2021). Prevalence of xerostomia and its association with systemic diseases and medications in the elderly: A cross-sectional study. *Sao Paulo Medical Journal*, *139*(4), 380–387. https://doi.org/10.1590/1516-3180.2020.0616.R3.1902021
- Gupender, G. (2015). (Ed.). "Dry mouth, A clinical guide on causes, affects and treatments". Heildelbeg: Spring.

- Hicks, C. M. (2000). *Research methods for clinical therapists* (3rd ed.). London: Churchill Livingstone
- Hagen, E. M., & Rekand, T. (2015). Management of Neuropathic Pain Associated with Spinal Cord Injury. *Pain and Therapy*, *4*, 51–65. https://doi.org/10.1007/s40122-015-0033-y
- Kader, M., & Hossain, S. (n.d.). Socio-demographic and injury- related factors contributing to activity limitations and participation restrictions ... Civic.
- Kang, Y., Ding, H., Zhou, H., Wei, Z., Liu, L., Pan, D., & Feng, S. (2017).
 Epidemiology of worldwide spinal cord injury: a literature review. *Journal of Neurorestoratology, Volume 6*, 1–9. https://doi.org/10.2147/jn.s143236
- Lee, B. B., Cripps, R. A., Fitzharris, M., & Wing, P. C. (2014). The global map for traumatic spinal cord injury epidemiology: update 2011, global incidence rate. *Spinal Cord*, 52, 110–116. doi:10.1038/sc.2012.158
- Lim, S. W., Shiue, Y. L., Ho, C. H., Yu, S. C., Kao, P. H., Wang, J. J., & Kuo, J. R. (2017). Anxiety and Depression in Patients with Traumatic Spinal Cord Injury: A nationwide population-based cohort study. *PLoS ONE*, *12*(1), 1–14. https://doi.org/10.1371/journal.pone.0169623
- Markandaya, M., Stein, D. M., Menaker, J. (2012). Acute treatment options for spinal cord injury. *Current Treatment Options in Neurology*, 14, 175-187. doi:10.1007/s11940-011-0162-5
- McRae, J. (2011). Dry mouth in spinal cord injury: causes and treatment. *Dental Nursing*, 7(8), 446–449. https://doi.org/10.12968/denn.2011.7.8.446
- Middleton, J., Siddall, P., & Perry, K. N. (2008). Injury Service Managing Pain for Adults with Spinal Cord Injury Targetting Health Professionals. *NSW Agency for Clinical Innovation, June 2002*. http://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0004/155173/sci_manag ing_pain.pdf
- Middleton, J. W., Leong, G., & Mann, L. (2008). Management of spinal cord injury in general practice - Part 2. Australian Family Physician, 37, 331-338.). Retrieved from https://search.proquest.com/docview/216293957?pqorigsite=gscholar&fromopenview=true

- Millsop, J. W., Wang, E. A., & Fazel, N. (2017). Etiology, evaluation, and management of xerostomia. *Clinics in Dermatology*, 35(5), 468–476. https://doi.org/10.1016/j.clindermatol.2017.06.010
- Miranda-rius, J., Brunet-llobet, L., Lahor-soler, E., & Farré, M. (2015). Salivary Secretory Disorders, Inducing Drugs, and Clinical Management. 12(Vii). https://doi.org/10.7150/ijms.12912
- Pakpour, A. H., Kumar, S., Scheerman, J. F. M., Lin, C. Y., Fridlund, B., & Jansson, H. (2016). Oral health-related quality of life in Iranian patients with spinal cord injury: A case-control study. *Injury*, 47(6), 1345–1352. https://doi.org/10.1016/j.injury.2016.03.022
- Saroha, D., Bottrill, I., Saif, M., & Gardner, B. (2003). Is the nasal cycle ablated in patients with high spinal cord trauma? *Clinical Otolaryngology and Allied Sciences*, 28(2), 142–145. https://doi.org/10.1046/j.1365-2273.2003.00679.x
- Scribbr. (2021). Retrieved in 1 January 15, 2022 from scribbr.com/methodology/cross-sectional-study/
- Sekhon, Lali H. S., and Michael G. Fehlings. (2001). "Epidemiology, Demographics, and Pathophysiology of Acute Spinal Cord Injury." Spine 26(24 SUPPL.):2– 12.
- Sullivan, A. L., Morgan, C., & Bailey, J. (2009). Dental professionals' knowledge about treatment of patients with spinal cord injury. *Special Care in Dentistry*, 29(3), 117–122. https://doi.org/10.1111/j.1754-4505.2009.00076.x
- Thomson, W. M., Lawrence, H. P., Broadbent, J. M., & Poulton, R. (2006). The impact of xerostomia on oral-health-related quality of life among younger adults. Health and Quality of Life Outcomes, 4, 1–7. https://doi.org/10.1186/1477-7525-4-86
- Villa, Alessandro, Christopher L. Connell, and Silvio Abati. (2014). "Diagnosis and Management of Xerostomia and Hyposalivation." Therapeutics and Clinical Risk Management 11:45–51.

Yuen, H. K., Shotwell, M. S., Magruder, K. M., Slate, E. H., & Salinas, C. F. (2009). Factors associated with oral problems among adults with spinal cord injury. *Journal of Spinal Cord Medicine*, 32(4), 408–415. https://doi.org/10.1080/10790268.2009.11753207

[N.B. For better understanding of the study, please see hard copy & for any further information please contact: naimamaliha1998@gmail.com]