

Multicultural Education

Research Article

Homepage: www.MC-caddogap.com

PRESSURE ULCER: EDUCATIONAL CAMPAIGN IN PROMOTING KNOWLEDGE AND ATTITUDE ACROSS HEALTH PROFESSIONALS

Dr. Naveed Arshad*M.Phil (Rehabilitation Sciences), Assistant Professor, Islamabad Medical and Dental College, Islamabad Pakistan***Dr. Maryam Shabbir***Ph.D (Rehabilitation Sciences) scholar, Associate Professor, Avicenna Medical College, Lahore Pakistan***Dr. Khalil ur Rehman***FCPS (General surgery), Associate Professor, Foundation University Medical College Islamabad***Dr. Maryam Naeem***MS (Neuromuscular Therapy), Lecturer, Avicenna Medical College, Lahore Pakistan***Dr. Muhammad Attique Sadiq***FCPS,FRCS,FACS (General surgery), Associate Professor, Foundation University Medical College Islamabad***Dr. Nadia Attiq***FCPS (General Surgery), Senior Registrar, Foundation University Medical College Islamabad***Dr. Maham Farooq***MBBS, Postgraduate Student (General Surgery), Islamabad Medical and Dental College, Islamabad Pakistan***ABSTRACT**

Objectives: To assess the baseline knowledge and attitude about pressure ulcer prevention and treatment among medical staff working in neuro-spinal units including NICUs of tertiary care hospitals of Islamabad.

Methods: Analytical study was conducted at the tertiary care hospitals of Islamabad between March and August 2022. Medical staff was recruited through purposive sampling technique. The questionnaire was given to the respondents to assess the knowledge and attitude regarding pressure ulcer prevention & treatment and pre-test readings were recorded. After the pretest, the primary researcher determined the areas for improvement by reviewing incorrect responses in order to design and offer educational materials about prevention and care of pressure ulcers. In second phase the researcher provided reading materials structured in such way that it provided the core knowledge and influenced the attitude of the staff regarding the pressure ulcer prevention and treatment. The reading material was explained to the staff by the researcher. The “Pieper Pressure Ulcer Test” was employed to measure changes in medical staff’s knowledge and attitude about pressure ulcer care. The data was collected before and after the campaign and was compared.

Results: The participants mean age was 29.13±6.14 years. Study results revealed that mean score of knowledge before educational campaign was 1.08 that was improved to 4.78 (p = 0.001) after the educational campaign. The mean score of attitude and behavior towards pressure ulcers prevention and treatment before educational campaign was 1.04 that was improved to 4.46 (p = 0.001) after the educational campaign.

Conclusion: It is concluded that educational campaign proved to be effective in promoting knowledge and attitude regarding pressure ulcer among medical staff.

ARTICLE INFO*Keywords:*

Attitude; Knowledge; Medical staff; Pressure ulcer.

*Article History:*Received: 30th Oct 2022Accepted: 24th Nov 2022Published: 19th Dec 2022

1. INTRODUCTION

Focal skin lesion, involving either the superficial areas or the underlying tissues, specifically the skin areas over bony parts of the body, usually as a result of shear force or the outcome of prolonged pressure, is known to the medical professionals as pressure ulcers (Kottner J, et al 2019). Pressure ulcers (PrUs) can be categorized based on the severity level, less severe being the mild redness of the skin and involvement of the subcutaneous structures refers to the advanced stage of ulcer (Saghaleini SH, et al 2018). According to Bauer and colleagues mentioned that the terms such as bedsores and decubitus ulcers should not be used as bedsores mean that PrUs only occur in the supine position. They argue that, while tissue destruction occurs in the sacrum, scalp, shoulders, calves and heels when the patient is lying, it also occurs in the humerus area when the patient is confined to a wheelchair, making pressure sore the most appropriate term to use (Pfeffer J 2019).

Most studies done to find out the incidence and prevalence rates of PrUs worldwide. Various studies report an incidence ranging from 0.78% to 39.3% (Anker AM, et al 2022 & Cortes OL, et al 2021). Many international studies report prevalence rates ranging from 4.3% to 25%; i.e., in Germany 4.3% (Delmore B, et al 2019), Republic of Ireland 9% (Avsar P, et al 2020), USA 9.5% and Sweden 17.6% (Barakat-Johnson M, et al 2019) and United Arab Emirates 25% (Tariq G, et al 2019). In Pakistan, the number of patients who have PrUs is unknown. The researcher's clinical experience has shown that some patients were admitted without a PrUs but developed during the admission period, while other patients were admitted with one PrUs and ended up with multiple PrUs (Kottner J, et al 2019).

The National Pressure Ulcer Advisory Panel (NPUAP) developed a four-stage classification system in 1989 which remained in use worldwide for a long time period (Kottner J, et al 2020). There is little difference between the classification systems developed by the NPUAP and the European Pressure Ulcer Advisory Panel (EPUAP) (Tubaishat A, et al 2018). The stages were added after the identification of results of the study conducted for more than 5 years, extending from 2001 to 2006. The study mentioned the involvement of deep body tissues with the progression of pressure ulcers (Nightingale P, et al 2021). The international NPUAP, EPUAP and PPIA (Pan Pacific Pressure Injury Alliance) in 2014 added the recent advancements in the field of pressure ulcers and proposed a new classification system that is used now globally (Kottner J, et al 2019). Considerations involving the prevention and treatment of pressure ulcers emphasize the importance of patient positioning and the use of appropriate bed surface (Fujiwara H, et al 2020).

Knowledge is the process of acquiring knowledge of a specific object or topic or something. This phenomenon can be applied to the acquisition of information, finding the facts, acquisition of ideas, to investigate, to observe or experience (Gethin G, et al 2020). The degree of knowledge acquired by the nurses regarding the pressure ulcers treatment and prevention denotes to the fact that nurse is able to identify the patients at risk. Assessment of patient's general health, skin structure, and degree of mobility, degree of skin moisture and level of incontinence come under the umbrella term of knowledge. Nutritional state assessment along with management of pain also come under the domain of this knowledge necessary for the physical therapist (Ghazanfari MJ, et al 2022).

Kaddourah and fellows conducted study to find out the knowledge and attitude of the members of health care system including the physical therapist, nursing staff, occupational therapists and the physicians of physical medicine and rehabilitation specialty. The study evaluated the baseline knowledge and attitude of the professionals working in acute care setups (Kaddourah B, et al 2016).

The objectives of this study were to assess the baseline knowledge and attitude about pressure ulcer prevention and treatment among the medical staff working in neuro-spinal units including NICUs of tertiary care hospitals of Islamabad. The hypothesis of the study was, educational intervention has significant effect on knowledge and attitude of staff regarding the pressure ulcer prevention and treatments.

2. METHODS

Analytical cross-sectional study was conducted at the tertiary care hospitals of Islamabad between March and August 2022. A total of 350 medical staff (doctors = 150, nurses = 150 and physical therapists = 50) age range 22-45 years, both genders male and female with at least graduation degree were taken from Fauji Foundation Hospital, Pakistan Institute of Medical Sciences, and Akbar Niazi Teaching Hospital, Islamabad Pakistan for the purpose of this study.

After approval from the institutional board and head of department (HOD) of hospitals, medical staff were

approached. The objectives of the study were explained and informed consent was taken. By using “Pieper Pressure Ulcer test”, was applied by researcher. This is a valid tool used for the assessment of knowledge and attitude regarding pressure ulcer prevention and treatment. It consisted of 47 questions out of which twenty were assessing the level of knowledge and twenty-seven questions were assessing attitude and behavior of the staff regarding pressure ulcer prevention and treatment. Data collection was done at pretest and posttest scores to assessed improvement that it occurred or not. Non-probability purposive sampling technique was used for data collection.

The following procedure was used for evaluation: prior to the pretest, using “Pieper Pressure Ulcer Test” was applied by primary researcher on the spot. After the pretest, the researcher find out the areas of improvement by reviewing incorrect responses in order to design and offer educational materials about prevention and care of pressure ulcers. In second phase, the medical staff were provided with written material structured in such way that it provided the core knowledge and influenced the attitude of the staff. They were asked to take it to home for reading. Again “Pieper Pressure Ulcer Test” was applied to measure changes in the staff’s knowledge and attitude about pressure ulcer care.

The data was analyzed using SPSS version 23. Results were obtained through appropriate statistical analysis. For continuous data, mean and standard deviation were calculated. While for categorical variables like gender, education level, frequency and percentage were used. Paired sample t-test was applied to measure the difference between the mean score of pretest and posttest. To measure the significant changes in attitude regarding the pressure ulcer prevention, chi square test was used. P value ≤ 0.05 was considered significant.

3. RESULTS

The study was conducted to assess the educational campaign. At the statistical analysis of the data, Shapiro-Wilk test was used for normality and all the data was normative ($p \geq 0.05$). The participants mean age was 29.13 ± 6.14 years. In this study, 71% (n=213) participants were in 22-30 years age group, 15.5% (n=47) were in 30-40 years age group while 13.5% (n=40) were in 40-45 years age group. 27% (n=81) of the respondents were male while 73% (n=219) were female. In the current study, 69% (n=207) respondents were having 4/5 years graduation degree while 31% (n=93) were holding master degree. In this study, 62% (n=186) of the respondents were having 1-3 years of professional experience, 18% (n=54) were having 3-5 years of experiences while 20% (n=60) were having more than 5 years of experience.

Table 1: Pre and post effect of educational campaign on knowledge and attitude of medical staff, n=350

	N	Mean	Std. Deviation	p value
Pretest knowledge	350	1.08	0.09	0.001
Posttest knowledge	350	4.78	0.06	
Pretest attitude	350	1.04	0.04	0.001
Posttest attitude	350	4.46	0.06	

Table 2: Comparison of pre and post effect of educational campaign on knowledge and attitude of medical staff, n=350

Over all Significance	Mean	Std. Deviation	Error	Correlation	p value
Pretest	1.95	0.61	0.092	-0.192	0.006
Posttest	4.69	0.63	0.094		
Paired Samples Test					
Difference	Mean	Std. Deviation	Error	t	p value
S1	-2.74	0.96	0.14	4.64	0.005

The confidence interval for the mean difference between the two materials does not include zero,

indicating a difference between them. A small p-value ($p = 0.005$) further suggests that the data are not consistent with $H_0: \mu_d = 0$, that is the two samples do not perform equally. Based on such results alternate hypothesis is accepted that means there is a significant difference between pre and post-test intervention.

Table 3: Association between educational campaign in improvement of knowledge and attitude of medical staff regarding pressure ulcer management, $n=350$

	Value	df	p value
Chi square value	67.19	16	.001
Likelihood	33.99	16	.005
Linear tern connotation	16.12	1	.001

The two-sided significance of the chi square estimation is more important than 0.001. So, it is ensured to express that the qualifications are a direct result of easygoing assortment. The degree of the qualification between the watched and foreseen that characteristics considered would it's looking at expected regard is significant difference between education and gender. If we pick an alpha level of 0.05, the p regard (0.001) isn't as much as alpha. Thus, we can reject null hypothesis that educational intervention has no significant effect on knowledge and attitude of medical staff regarding the pressure ulcer prevention and treatments.

4. DISCUSSION

In this analytical study 350 medical staff were recruited to evaluate the level of knowledge and attitude in preventing the pressure ulcers and treating them if they develop. A valid and reliable questionnaire, named PIPER Pressure Ulcer Questionnaire was used to collect the data. Study results reveal that mean score of knowledge before educational campaign was 1.08 that was improved to 4.78 after the educational campaign. This indicates that 70% of the participants scored more than 29 out of 47 marks (61.7%). Study results reveal that mean score of attitude and behavior towards pressure ulcers prevention and treatment before educational campaign was 1.04 that was improved to 4.46 after the educational campaign.

Literature has revealed the fact that inadequate level of knowledge is significantly linked with poor patient care and ultimately development of pressure ulcers whereas with increasing level of knowledge with experience and educational campaigns creates a positive impact on the health care system (Fujiwara H, et al 2020). Many studies have been conducted to assess the relation between knowledge and attitude of health care professionals regarding pressure ulcers (De Meyer D, et al 2019, Gress Halasz B, et al 2021 & Delmore B, et al 2018).

Few of the studies have highlighted the fact that poor knowledge of the members of health care delivery system can lead to the development of pressure ulcers among the bed ridden or wheelchair bound patients (Gress Halasz B, et al 2021). Study conducted by Charalambous showed that more than 73% nurses correctly answered up to fifty percent of the question that were asked to assess their level of knowledge (Charalambous C, et al 2019). 70% of the medical staff correctly answered more than 50% of the questions that measured their knowledge about the prevention and treatment of pressure ulcers. In current study the level of knowledge of medical staff was significantly improved after the educational campaign as highlighted by the fact that 70% of the medical staff correctly answered more than fifty percent questions about knowledge.

In the current study, five questions were used to assess the knowledge of medical staff about the risk factors of pressure ulcer development. The level of knowledge about the risk factors was good as 86% medical staff marked the correct answer which improved to 96% after the educational campaign. In another study conducted in Bangladesh revealed poor knowledge about the risk factors identification among the nursing population but in current study the level of knowledge was good (Tharu NS, et al 2022).

The current study assessed the knowledge about the progression of pressure ulcers among the medical staff. The results showed poor knowledge as only 22% answered correctly while 33% didn't have knowledge. After the campaign 86% correctly answered the question. 56% of the staff did not have idea about the use of Donut devices/ring cushions in preventing pressure ulcers and only 22% correctly answered. After the campaign, 33 of the staff came to know the fact that these cushion devices are not helpful in prevention of pressure ulcers. 67% of the staff in the current study have false knowledge that massaging bony prominences is important in prevention of pressure ulcers. This percentage was reduced to 11% which showed the effectiveness of educational campaign in enhancing knowledge about pressure ulcer prevention. In the past results of a study conducted in Ethiopia, revealed the poor level of knowledge about massaging technique (Abyu GY, et al 2016).

However, literature reveals the fact that massage is prohibited as a preventive strategy for the bedridden patients (Gedamu H, et al 2021).

5. CONCLUSION

It is concluded that educational campaign proved to be effective in promoting knowledge and attitude regarding pressure ulcer among medical staff. However, the knowledge and attitude towards pressure ulcer is not up to the mark. The knowledge of the medical staff working in the tertiary care hospitals about the measures taken to prevent pressure sores seems modest. The attitudes were an important indicator of the use of knowledge, but it also seemed to be an average.

References

1. Kottner J, Cuddigan J, Carville K, Balzer K, Berlowitz D, Law S, et al. Prevention and treatment of pressure ulcers/injuries: The protocol for the second update of the international Clinical Practice Guideline 2019. *J Tissue Viability*. 2019;28(2):51-58. <https://doi.org/10.1016/j.jtv.2019.01.001>
2. Saghaleini SH, Dehghan K, Shadvar K, Sanaie S, Mahmoodpoor A, Ostadi Z. Pressure ulcer and nutrition. *Indian J Crit Care Med*. 2018;22(4):283. https://doi.org/10.4103/ijccm.IJCCM_277_17
3. Pfeffer J. The cause of pressure sores. In *Prevention of Pressure Sores*. 2019:1-18. CRC Press. <https://doi.org/10.1201/9780367811549-1>
4. Anker AM, Ruewe M, Prantl L, Geis S, Kehrer A, Baringer M, et al. Prognostic Evaluation of Pressure Sore Surgery Index: Risk Assessment and Outcomes of a Retrospective Cohort Study. *Plast Reconstr Surg*. 2022;149(2):483-493. <https://doi.org/10.1097/PRS.00000000000008766>
5. Cortes OL, Herrera-Galindo M, Villar JC, Rojas YA, del Pilar Paipa M, Salazar L. Frequency of repositioning for preventing pressure ulcers in patients hospitalized in ICU: protocol of a cluster randomized controlled trial. *BMC Nursing*. 2021;20(1):1-10. <https://doi.org/10.1186/s12912-021-00616-0>
6. Delmore B, Deppisch M, Sylvia C, Luna-Anderson C, Nie AM. Pressure injuries in the pediatric population: a national pressure ulcer advisory panel white paper. *Adv Skin Wound Care*. 2019;32(9):394-408. <https://doi.org/10.1097/01.ASW.0000577124.58253.66>
7. Avsar P, Moore Z, Patton D, O'Connor T, Budri AM, Nugent L. Repositioning for preventing pressure ulcers: a systematic review and meta-analysis. *J Wound Care*. 2020;29(9):496-508. <https://doi.org/10.12968/jowc.2020.29.9.496>
8. Barakat-Johnson M, Lai M, Wand T, White K. A qualitative study of the thoughts and experiences of hospital nurses providing pressure injury prevention and management. *Collegian*. 2019;26(1):95-102. <https://doi.org/10.1016/j.colegn.2018.04.005>
9. Tariq G, Hamed J, George B, Cruz S, Jose J. Pressure ulcer prevalence and prevention rates in Abu Dhabi: an update. *J Wound Care*. 2019;28(Sup4):S4-11. <https://doi.org/10.12968/jowc.2019.28.Sup4.S4>
10. Kottner J, Cuddigan J, Carville K, Balzer K, Berlowitz D, Law S, et al. Pressure ulcer/injury classification today: An international perspective. *J Tissue Viability*. 2020;29(3):197-203. <https://doi.org/10.1016/j.jtv.2020.04.003>
11. Tubaishat A, Papanikolaou P, Anthony D, Habiballah L. Pressure ulcers prevalence in the acute care setting: a systematic review, 2000-2015. *Clin Nurs Res*. 2018;27(6):643-659. <https://doi.org/10.1177/1054773817705541>
12. Nightingale P, Musa L. Evaluating the impact on hospital acquired pressure injury/ulcer incidence in a United Kingdom NHS Acute Trust from use of sub-epidermal scanning technology. *J Clin Nurs*. 2021;30(17-18):2708-2717. <https://doi.org/10.1111/jocn.15779>
13. Fujiwara H, Isogai Z, Irisawa R, Otsuka M, Kadono T, Koga M, et al. Wound, pressure ulcer and burn guidelines-2: Guidelines for the diagnosis and treatment of pressure ulcers. *J Dermatol*. 2020;47(9):929-978. <https://doi.org/10.1111/1346-8138.14587>
14. Gethin G, Probst S, Stryja J, Christiansen N, Price P. Evidence for person-centred care in chronic wound care: a systematic review and recommendations for practice. *J Wound Care*. 2020;29(Sup9b):S1-22. <https://doi.org/10.12968/jowc.2020.29.Sup9b.S1>
15. Ghazanfari MJ, Karkhah S, Maroufizadeh S, Fast O, Jafaraghaee F, Gholampour MH, et al. Knowledge, attitude, and practice of Iranian critical care nurses related to prevention of pressure ulcers: A multicenter cross-sectional study. *J Tissue Viability*. 2022;31(2):326-331. <https://doi.org/10.1016/j.jtv.2022.01.009>
16. Kaddourah B, Abu-Shaheen AK, Al-Tannir M. Knowledge and attitudes of health professionals towards pressure ulcers at a rehabilitation hospital: a cross-sectional study. *BMC Nursing*. 2016;15(1):1-6. <https://doi.org/10.1186/s12912-016-0138-6>
17. De Meyer D, Verhaeghe S, Van Hecke A, Beeckman D. Knowledge of nurses and nursing assistants about pressure

- ulcer prevention: A survey in 16 Belgian hospitals using the PUKAT 2.0 tool. *J Tissue Viability*. 2019;28(2):59-69. <https://doi.org/10.1016/j.jtv.2019.03.002>
18. Gress Halasz B, Beresova A, Tkacova L, Magurova D, Lizakova L. Nurses' knowledge and attitudes towards prevention of pressure ulcers. *Int J Environ Res Public Health*. 2021;18(4):1705. <https://doi.org/10.3390/ijerph18041705>
 19. Delmore B, Ayello EA, Smart H, Sibbald RG. Assessing pressure injury knowledge using the Pieper-Zulkowski pressure ulcer knowledge test. *Adv Skin Wound Care*. 2018;31(9):406-412. <https://doi.org/10.1097/01.ASW.0000540071.45158.29>
 20. Charalambous C, Koulouri A, Roupa Z, Vasilopoulos A, Kyriakou M, Vasiliou M. Knowledge and attitudes of nurses in a major public hospital in Cyprus towards pressure ulcer prevention. *J Tissue Viability*. 2019;28(1):40-45. <https://doi.org/10.1016/j.jtv.2018.10.005>
 21. Tharu NS, Alam M, Bajracharya S, Chaudhary GP, Pandey J, Kabir MA. Caregivers' Knowledge, Attitude, and Practice towards Pressure Injuries in Spinal Cord Injury at Rehabilitation Center in Bangladesh. *Adv Orthop*. 2022;2022(6);1-9. <https://doi.org/10.1155/2022/8642900>
 22. Abyu GY, Panerio WG, Selassie KG, Molla M. Explore the level of awareness, perception and utilization of pressure ulcer prevention among health professionals, ayder referral hospital, 2013. *Res Rev: J Hematol Oncol*. 2016;5(1):24-29.
 23. Gedamu H, Abate T, Ayalew E, Tegenaw A, Birhanu M, Tafere Y. Level of nurses' knowledge on pressure ulcer prevention: A systematic review and meta-analysis study in Ethiopia. *Heliyon*. 2021;7(7):e07648. <https://doi.org/10.1016/j.heliyon.2021.e07648>