

Validation of a Public Health Tool used for the Assessment of Violence against Healthcare Providers in the Rural Areas of Sindh

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ABSTRACT

Objective: To validate a public health tool for assessing violence and its effects against healthcare providers (HCPs).

Study Design: Cross-sectional study.

Place and Duration of Study: Rural districts of Sindh from June to December 2019.

Methodology: The survey included all the HCPs from the five districts of Sindh such as Sanghar, Thatta, Sukkur, Nawabshah, and Larkana with a minimum of one-year experience. Those not willing to participate in the study were excluded. The main variables were socio-demographic variables, type of violence and effects of violence. Multi-stage cluster sampling was done. Within each district hospital, an equal number of HCPs were recruited from the Emergency, Medical, Surgical, Pediatric, and Gynecology Departments. The main factors of the public health tool were checked by performing principal component analysis, using varimax rotation, to assess the construct validity. Finally, Cronbach's alpha was used to check the reliability of the questionnaire.

Results: The Cronbach's alpha value was 0.724, showing satisfactory reliability of the questionnaire. Factor analysis yielded a five-factor solution accounting for 58% of the total variance in the data set. The principal component analysis revealed that the questionnaire used previously for measuring workplace violence and its effects had acceptable reliability and validity.

Conclusion: This study revealed that this public health tool can be used for assessing violence against HCPs in the rural areas of Sindh.

Key Words: Construct validity, Factor analysis, Healthcare providers, Validation, Violence.

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INTRODUCTION

World Health Organization describes purposeful use of physical force or power, threatened or actual, against oneself, another person or against a group and community, which either results in or has a high likelihood of causing injury, death, psychological harm, mal-development or deprivation.¹ Workplace violence is also described as "any incident where the staff is abused, threatened or assaulted in circumstances relating to their work involving an explicit or implicit challenge on their security, well-being, and health."² Hence, this terminology is quite vast as it covers different aspects of violence. Workplace violence can lead to various outcomes including mental torture, injuries, and even death of HCPs. Violence against HCPs is of utmost concern globally.^{3,4}

HCPs in the Emergency Department of East Azerbaijan hospitals have single-handedly faced physical and verbal abuse from patients and their attendees, affecting their physical and mental health.⁵ The effect of such workplace violence may lead to post-traumatic stress disorder, poor outcomes of treating patients adequately, and an increase in mental exhaustion.⁶ Consequently, treatment is compromised due to delay in the provision of patient care.⁷ Many doctors have been killed on ethnic, religious, and sectarian grounds.⁸ Such type of insecure environment has created fear among the HCPs of Pakistan.¹ HCPs have been fearful and unwilling to work in such an insecure environment; this also delays their response to medical crises.⁹ However, perhaps it is not only the caregivers but also the consumers of healthcare services, i.e. the patients that have lost confidence in the services provided by hospitals.¹⁰

In Karachi (Pakistan), a study was conducted by AIPH in collaboration with ICRC in 2015 to identify the quantum and types of violence faced by HCPs and to improve the safety of healthcare professionals, facilities, and ambulance services.⁸ Results of Baig et al. study showed that healthcare workers were vulnerable to physical and verbal violence. The tool used in that study was for urban areas; and to ensure that it has included rural

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dimensions, a qualitative study was done to include contextual variables for rural areas of Sindh.⁸

A review of available literature showed that no standard contextual validated tool is available in Pakistan currently for measuring the quantum, types, and effects of violence inflicted on healthcare providers. In 2015, by using a locally developed tool, a research was conducted to measure the quantum and types of violence against HCPs. This study was then replicated in other parts of Pakistan, using the same tool; however, that tool was never validated.

The aim of this study was to validate a public health tool for assessing violence against HCPs.

METHODOLOGY

It occurred in two steps. First, the qualitative study was done using in-depth interviews and focus group-discussions with HCPs. The thematic content analysis gave details about the types, causes and the effects of violence at health care settings against HCPs. In the next step, based on the qualitative data, a questionnaire was developed (total 25 items, 5 socio-demographic and 20 violence-related and reliability) and validity analyses were performed. For each item, 20 participants were taken. Since there were 25 items, researchers decided to implement the questionnaire on 550 participants.⁸ Multi-stage cluster sampling was done. The HCPs with a minimum of one year experience were included in the study. Those HCPs who were not willing to participate in the study were excluded. The survey included doctors, nurses, technicians, ambulance staff, vaccinators, and lady health workers, taken from the five districts of Sindh.

The HCPs were inducted from the five districts of Sindh, which include Sanghar, Thatta, Sukkur, Nawabshah, and Larkana. Within each district hospital, an equal number of HCPs were recruited from the Emergency Department, Medical Unit, Surgical Unit, Pediatric Unit, and Gynecology Department. The ambulance staff, vaccinators and lady health workers were recruited from the significant areas of the city. Initially, a visit to the hospitals was conducted to introduce and familiarise the researcher with study participants as well as to seek their consents for the study. A list of registered HCPs was obtained from every institution before starting the study. All the selected HCPs available in the departments at the time of survey fulfilling the inclusion criteria, were invited to participate in the study.

The data were collected by trained data collectors, who were trained at APPNA Institute of Health Sciences for two days under the supervision of co-principal investigators. To establish face validity, different eight public health experts were asked to review the questionnaire. They were chosen from the faculty members of the APPNA Institute of Public health. They were asked to be part of the study due to their public health background and experience. For content validity, the public health professionals arranged all the list of items that were

intended to measure and then the authors checked the items again in the questionnaire so that every item corresponded to the desired measurement.

The data were analysed and subjected to SPSS version 21. Descriptive statistics were calculated. The principal component analysis with an Eigen-value of greater than one and factor loadings of more than 0.2 was used for the factor solution. Cronbach's alpha (CA) checked the reliability of the questionnaire. The last step was to revise the questionnaire based on the information obtained from the principal component analysis. The data collection tool was translated into Urdu language. Pre-testing of the questionnaire was done before the start of actual data collection to ensure cognitive validity.

RESULTS

Out of the 550 HCPs, 271 (49.27%) were males, and 279 (50.72%) were females belonging to the three categories of age such as the young age group (18-30 years). There were 195 (35.45%) in the middle age group (31-50 years), 278 (50.54%) in the old age group, 51 and above there were 77 (14%). Most of them were Muslims 485 (88.18%), 47 (8.5%) were Hindus, and 18 (3.27%) were Christians; belonging to different ethnic groups like Urdu speaking, Sindhi, Punjabi, Pukhtoon and Baloch were almost around 142 (25.81%), 293 (53.27%), 81 (14.72%), 20 (3.6%) and 14 (2.5%), respectively. All participants were equally distributed across all cadres. HCPs were taken from Sanghar, Thatta, Sukkur, Nawabshah and Larkana 210 (38.18%), 120 (21.81%), 110 (20%), 60 (10.90%) and 50 (9.0%), respectively.

The validity of the questionnaire was performed, using face validity and content validity. For this purpose, different public health experts were asked to review the questionnaire in detail. Factor analysis was performed on 20 items (violence-related); and four items with low factor loadings were removed. Factor analysis yielded a five-factor solution, accounting for 58% percent of the total variance in the data set. The five factors were named as physical abuse, physiological effects, verbal abuse, emotional effects and reporting mechanism, as referred to in Table I.

To check the reliability, Cronbach's alpha coefficient was used to measure the internal consistency of the questionnaire. The Cronbach's alpha coefficient of the responses on the questionnaire was found to be 0.933; and for the remaining sub-scales, it ranged from 0.900 to 0.959.

DISCUSSION

This study validated the public health tool that can be used for assessing workplace violence and its effects against HCPs. Hence, a 20-item questionnaire was used and found to be reliable to assess the violence and its effects in the rural areas of Sindh. Many studies have been conducted all around the world to determine the magnitude, possible causes, sources, incidence, and types of workplace violence faced by HCPs. Abstract concepts called latent variables or constructs, may not be directly measured. For this purpose, validation of tools can be helpful to measure workplace violence.^{11,12}

Table I: Constructs identified through principal component analysis.

	Physical abuse	Psychological effects	Verbal abuse	Emotional effects	Reporting processes
V1- beaten	0.998				
V2 -pushed	0.998				
V3- thrown things	0.997	0.741			
V4-bullied	0.997				
V13-feel stressed		0.990	0.471		
V17-disturbingmemories of the event		0.990			
V12-Feel scared		0.988			
V-5Abusive language			0.995		
V6-shouted			0.995		
V15-demotivated		0.566		0.996	
V16-super alert				0.996	
V14-angry				0.993	
V18-hopeless				0.927	
V19-organizational attitude towards violence			0.589		0.897
V20-defined process of reporting					0.889

Internationally, various tools have been designed to assess workplace violence among HCPs.¹³ Validation of tools is a complex phenomenon, and various methods are used to include correlation matrices, factor analysis, multi-trait multi-method matrix, and structure equation modelling.¹⁴ Validation of this tool would help assess the current workplace violence rate experienced by HCPs.¹⁵ Not only this, but it will also provide a basis for preventive planning; and also assess the reliability and practicality of this public health tool.¹⁵⁻¹⁷

The Italian Ministry of Health has emphasised upon developing the tools/questionnaires that help assessing violence.³ The tool that has been developed and validated in the current study will help the administrators and policy makers to understand the consequences of violent events in healthcare settings. Such tools are helpful to identify the factors that can play a pivotal role in designing intervention or strategies to minimise the rate of workplace violence.^{1,15,18} Workplace violence affects the lifestyle, and run off a profound negative impact on HCPs' psychological and physical well-being; it also de-motivates them towards their profession. As a result of violence, HCPs are unwilling to work wholeheartedly, which affects the quality of care, leading to unbearable financial loss.¹⁹ Similar study was conducted by D'Ettorre *et al.*, in which the risk of workplace violence was assessed as experienced by HCPs of the Emergency Department. Hence, this questionnaire was considered a valid, structured, and reliable tool for assessing the risk of workplace violence. It helps identify various strategies, which can be used to control workplace violence.²⁰

In this study, five factors like physical abuse, psychological effects, verbal abuse, emotional effects, and reporting process, were extracted from the 20-item questionnaire. A study conducted by Mento *et al.*, revealed that workplace violence is more common in psychiatric, emergency departments, waiting areas, and geriatric units; and it is due to lack of communication between the patient and the doctor, as a

result of which individual experiences, verbal abuse, psychological violence, physical assault, and sexual abuse.²¹ A similar study was conducted in Turkey and its results also revealed the reporting mechanism as one of the factors extracted from the questionnaire. It was seen that the HCPs, who experience violence, did not report to higher authorities due to certain insecurities regarding their job.²²

The overall internal consistency of questionnaire of this study revealed a Cronbach's alpha value of 0.724. Similar results were found in a survey conducted to assess workplace violence among nursing staff; and in that study, the Cronbach's alpha value was found to be 0.77, showing that it was internally consistent.¹³ A study conducted by Seung-Eun *et al.*, developed a questionnaire which was finalised through reliability verification. The Cronbach's α value of the selected items was 0.930.²³

The main limitation of this study was that it was not applied in other parts of the country, especially to the urban areas of Sindh. More researches should be done in the future to ascertain the perception of workplace violence among patients and their families. Hence, healthcare settings should have zero tolerance policy for workplace violence; and should implement this questionnaire biannually to assess and evaluate the burden and the influence of workplace violence on HCPs. To the best of the authors' knowledge, this is the only study conducted to validate a tool for the assessment of violence and its effects against HCPs.

In terms of validation of a tool for the assessment of workplace violence and its effects, this tool can be considered as a valid measure for assessing all types of workplace violence incidents and its effects experienced by HCPs. It is a simple public health tool and a cost-effective way to assess violence and its effects.

CONCLUSION

The reliability of the questionnaire based on its internal consistency, using Cronbach's alpha, was 0.724. The five constructs identified by principal component analysis had good reliability. The factor analysis yielded a five-factor solution accounting for 58% of the total variance in the data set. Violence against HCPs is a public health issue and a validated tool can help health managers and leaders in identifying the quantum and managing violence against HCPs. In Pakistan, other researchers should use this tool in urban areas of Sindh and other provinces of the country.

ETHICAL APPROVAL:

The ethical approval of the proposed study was obtained from the National Bioethics Committee and Institutional Review Board (IRB) of Jinnah Sindh Medical University. For each hospital, permission was taken from the hospital administrators.

PATIENTS' CONSENT:

Not applicable.

CONFLICT OF INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

SM: Conception or design; or the acquisition, analysis, or interpretation of data.

MM: Drafting or revising it critically for important intellectual content.

LAB: Final approval of the version to be published; and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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