# Attitude of frontline health workers toward patient safety in hospitals of Karachi

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**Abstract:**

**Objective:**

To assess the attitude of frontline healthcare workers towards patient safety protocols in healthcare centers of Karachi.

**Methodology:**

This is a cross-sectional study conducted during February 2023 to May 2023. A pre-structured, validated questionnaire was used as study tool, study participants were permanent staff of health care institutes.

**Results:**

Total 224 participants were enrolled in the study, 82 (36.6%) from private sector institute while 142 (55.4%) were recruited form public sector hospital. The overall mean age $36.1 \pm 9$ years, with gender distribution of 133 (59.4%) male and 91 (40.6%) female participants. The difference between public sector and private sector was assessed for all six components of questionnaire to evaluated the attitude of health care workers, results indicated higher team work enthusiasm in public sector hospital as compared to private sector with 96 (42.8%) versus 75 (33.4%).

**Conclusion:**

This study concludes that attitude of Frontline Health Workers towards Patient Safety in public sector hospitals and private sector hospitals is noticeably different indicating vast difference of management, leadership, safety climate, teamwork enthusiasm and personal safety among healthcare workers.

**Keywords:** Patient safety, Healthcare workers, Attitude, knowledge of healthcare workers, patient's satisfaction, quality of care

## Introduction:

Patient safety is a critical aspect of healthcare delivery, encompassing measures taken to prevent harm to patients during their interactions with the healthcare system. Frontline health workers, including doctors, nurses, and other healthcare professionals, play a crucial role in ensuring patient safety in hospitals. [1] Their attitudes and behaviors toward patient safety significantly impact the overall quality of care provided. Bahar eta al. reported need of effective safety culture, team work and job satisfaction for nurses working in surgical organizations to get better safety for patient. [2]

Frontline health workers serve as advocates for patient safety. They actively involve patients and their families in decision-making processes, educate them about potential risks and encourage their participation in their own care. [3] Frontline health workers provide emotional support, empathy, and compassion, fostering a trusting and caring relationship with patients. This supportive approach not only contributes to patient well-being but also helps create an environment where safety concerns can be openly addressed. [4] Frontline health workers are quick to identify and address emerging risks or issues and make necessary adjustments to ensure safe and effective care delivery. [5] Frontline health workers play a vital role in ensuring patient safety in hospitals. Their attitudes toward patient safety is characterized by a commitment to excellence, proactive approaches, continuous learning, effective communication, and collaboration. [6]

It is important to note that individual attitudes may vary among frontline health workers, and the organizational culture and support also influence their attitudes toward patient safety. Ongoing efforts to promote a positive safety culture, provide resources for education and training, recognize and address barriers to patient safety are crucial for sustaining and improving patient safety outcomes in hospitals. [7]

The attitude of healthcare workers toward patient safety in Pakistan can vary due to several factors, including individual beliefs, organizational culture, resource constraints, and training opportunities. These challenges can impact patient safety practices and contribute to a sense of frustration and concern among healthcare workers. [8-10] Study by Miraj Shah et al. lack of effective leadership is major issue in creating safe atmosphere for patients within healthcare facilities of Pakistan especially in public sector institutes.[11] The presence of a supportive organizational culture plays a significant role in shaping healthcare workers' attitudes toward patient safety.[12] Some healthcare workers in Pakistan emphasize the importance of clear communication and teamwork in preventing errors and ensuring safe care delivery. Sara Rizvi et al. reported that nurses can create a good tracking system to analyze errors within hospital management and patient safety.[13]

It is important to remember that varied healthcare settings, geographical areas, and personal experiences may result in differences in the attitudes and behaviors of healthcare professionals. Pakistan should prioritize overcoming resource constraints, offering thorough training and education, and

cultivating an organizational culture that priorities patient safety in order to advance patient safety. [18] The purpose of this article is to give a general overview of frontline healthcare professionals' attitudes towards patient safety in hospitals, emphasizing their dedication to improving patient safety results.

**Methodology:**

This is a cross-sectional study, conducted at two hospitals one private sector and one public sector hospitals, located in Karachi, Pakistan. The duration of study was from February 2023 to May 2023. The study participants were frontline healthcare workers defined as per WHO that all workers working as nursing staff, anesthesiologists, dialysis staff, operating room staff etc. The distribution was 15 dialysis staffs, 12 assistant technicians the remaining study participants were nursing staff.

Sample size was calculated with the help of WHO sample size calculator, keeping total number of health care providers currently working at targeted public and private sector health care institutes, (n=1700), confidence interval as 95% and 5% margin of error the obtained minimum required sample size was 314. Data collection was started in February 2023, after getting approval from ethical review board of both institutes. An informed consent was presented to all participants indicating study protocol, aim and purpose, after signing consent form study participants were requested to fill all demographic details, a pre-structured, validated questionnaire [14] that comprised of 31 questions and have 6 components. Questionnaire components contained different relevant questions to track down specific attitude and perceptions, such as for team work climate component, 06 questions regarding input, speaking capability, disagreements, support and coordination were asked. Similarly, safety climate attitude was asked in seven relevant questions, regarding feeling safe as patients, medical errors, patient query, and discussion regarding errors were asked. The components were Team work, Safety climate, Job Security, Stress recognition, Perception of management and Working Condition. The answers were categorized in Likert scale from strongly agree to strongly disagree and mean of all answers were used as assessment of answers.

Data was entered and analyzed using statistical package of social sciences (SPSS), version 22. Numerical variables were summarized as mean and standard deviation while categorical variables as frequency and percentages. One-way ANOVA test was used to assess statistical evidence associated with comparative variables of study population such as age, years of experience and hospital setup (private vs. public).

**Ethical Consideration**

Data collection was collected after approval and obtained from the Institutional Research Committee, Ethics Review Committee (ERC) (Ref No. TKI-HEC 026).

**Results:**

Total 315 healthcare workers were approached for the study, while only 224 participants were accepted the study and signed informed consent, afterwards enrolled in the study, 82 (36.6%) from private sector institute while 142 (55.4%) were recruited

form public sector hospital. The overall mean age $36.1 \pm 9$ years, with gender distribution of 133 (59.4%) male and 91 (40.6%) female participants. The mean age within gender was $31.5 \pm 7.5$ years in females and $38.5 \pm 4.2$ years in male participants.

Mean years of experience in study participants was $13.8 \pm 7.8$. While six components of questionnaire were analyzed for mean scores, team work climate mean results were $13.1 \pm 2.98$, safety climate $17.1 \pm 4.7$, Job security $8.85 \pm 2.8$, stress recognition $10.4 \pm 4.3$, perception of management $12.5 \pm 4.1$ and working condition as $7.3 \pm 2.6$, respectively (Table 01).

Table 01: Mean score of overall questionnaire results.

| | |
|---|---|
| Team work climate | $13.1 \pm 2.98$ |
| Safety Climate | $17.1 \pm 4.7$ |
| Job Security | $8.85 \pm 2.8$ |
| Stress recognition | $10.4 \pm 4.3$ |
| Perception of management | $12.5 \pm 4.1$ |
| Working Condition | $7.3 \pm 2.6$ |

Questionnaire components contained different relevant questions to track down specific attitude and perceptions, such as for team work climate component, 06 questions regarding input, speaking capability, disagreements, support, questioning and coordination were asked. Similarly, safety climate attitude was asked in seven relevant questions, regarding feeling safe as patients, medical errors, patient query, and discussion regarding errors were asked. Remaining components consisted similar questions about detailed attitude respective issue. (Table 2-4)

| Table 02: Association of questionnaire results with gender distribution of study population. (One way ANOVA) | | | | | | |
|---|---|---|---|---|---|---|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Team work climate | Between Groups | 672.542 | 28 | 24.019 | 3.516 | .000 |
| | Within Groups | 1284.131 | 188 | 6.830 | | |
| | Total | 1956.673 | 216 | | | |
| Safety Climate | Between Groups | 1660.526 | 28 | 59.305 | 3.524 | .000 |
| | Within Groups | 3163.953 | 188 | 16.830 | | |
| | Total | 4824.479 | 216 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Job Security | Between Groups | 387.799 | 28 | 13.850 | 1.987 | .004 |
| | Within Groups | 1310.588 | 188 | 6.971 | | |
| | Total | 1698.387 | 216 | | | |
| Stress recognition | Between Groups | 1136.012 | 28 | 40.572 | 2.763 | .000 |
| | Within Groups | 2761.047 | 188 | 14.686 | | |
| | Total | 3897.060 | 216 | | | |
| Perception of management | Between Groups | 1390.803 | 28 | 49.672 | 3.895 | .000 |
| | Within Groups | 2397.695 | 188 | 12.754 | | |
| | Total | 3788.498 | 216 | | | |
| Working Condition | Between Groups | 437.031 | 28 | 15.608 | 2.641 | .000 |
| | Within Groups | 1111.080 | 188 | 5.910 | | |
| | Total | 1548.111 | 216 | | | |

*Df= degree of freedom, F=ratio of between group variability, Sig= Significance (< 0.05)

| Table 03: Association of questionnaire results with Age distribution of study population. (One way ANOVA) | | | | | | |
|---|---|---|---|---|---|---|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Team work climate | Between Groups | 9.945 | 1 | 9.945 | 1.106 | .294 |
| | Within Groups | 1978.001 | 220 | 8.991 | | |
| | Total | 1987.946 | 221 | | | |
| Safety Climate | Between Groups | 86.791 | 1 | 86.791 | 3.949 | .048 |
| | Within Groups | 4835.155 | 220 | 21.978 | | |
| | Total | 4921.946 | 221 | | | |
| Job Security | Between Groups | .046 | 1 | .046 | .006 | .939 |
| | Within Groups | 1736.116 | 220 | 7.891 | | |
| | Total | 1736.162 | 221 | | | |
| Stress recognition | Between Groups | 21.031 | 1 | 21.031 | 1.112 | .293 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Within Groups | 4161.456 | 220 | 18.916 | | |
| | Total | 4182.486 | 221 | | | |
| Perception of management | Between Groups | 12.390 | 1 | 12.390 | .707 | .401 |
| | Within Groups | 3857.070 | 220 | 17.532 | | |
| | Total | 3869.459 | 221 | | | |
| Working Condition | Between Groups | 8.179 | 1 | 8.179 | 1.138 | .287 |
| | Within Groups | 1581.695 | 220 | 7.190 | | |
| | Total | 1589.874 | 221 | | | |

| Table 04: Association of questionnaire results with total years of experience of study population. (One-way ANOVA) | | | | | | |
|---|---|---|---|---|---|---|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Team work climate | Between Groups | 638.487 | 27 | 23.648 | 3.459 | .000 |
| | Within Groups | 1182.777 | 173 | 6.837 | | |
| | Total | 1821.264 | 200 | | | |
| Safety Climate | Between Groups | 1688.370 | 27 | 62.532 | 3.738 | .000 |
| | Within Groups | 2894.117 | 173 | 16.729 | | |
| | Total | 4582.488 | 200 | | | |
| Job Security | Between Groups | 429.076 | 27 | 15.892 | 2.298 | .001 |
| | Within Groups | 1196.605 | 173 | 6.917 | | |
| | Total | 1625.682 | 200 | | | |
| Stress recognition | Between Groups | 1238.608 | 27 | 45.874 | 3.056 | .000 |
| | Within Groups | 2597.123 | 173 | 15.012 | | |
| | Total | 3835.731 | 200 | | | |
| Perception of management | Between Groups | 1155.924 | 27 | 42.812 | 3.136 | .000 |
| | Within Groups | 2361.877 | 173 | 13.652 | | |
| | Total | 3517.801 | 200 | | | |
| Working Condition | Between Groups | 434.810 | 27 | 16.104 | 2.802 | .000 |
| | Within Groups | 994.394 | 173 | 5.748 | | |
| | Total | 1429.204 | 200 | | | |

Remaining components consisted similar questions about detailed attitude respective issue. The difference between public sector and private sector was assessed for all six components of questionnaire to evaluated the attitude of health care workers, results indicated higher team work enthusiasm in public sector hospital as compared to private sector with 96 (42.8%) versus 75 (33.4%), p-value 0.0002. The safety climate was elevated in public sector hospital, as 71 (31.6%) and 42 (18.7%) participants of public sector hospital indicated fair and poor safety climate at work respectively, the p-value was significant with 0.0005. Job security was remarkably higher in public sector hospital staff with 134 (59.8%) participants indicating higher mean value of job security as compared to 82 (36.6%) staff from private sector, the p-value was 0.024 and insignificant. Stress recognition was identified in public sector staff highly as compared to private sector hospital, with no poor indication, 132 (58.9%) staff members from public sector staff said they had enhanced mean value of stress recognition within work place. The p-value was 0.0005 and significant. The perception of management was identified as poor in 10 (4.4%) study participants while only 2 (0.8%) staff members' form private sector staff indicated poor perception of management. Better management perception was also higher in public sector staff with p-value of 0.106. Working condition was reportedly good in public sector hospitals as compared to private sector with 132 (58.9%) staff members indicating higher mean value of atmosphere, the p-value was 0.472. One-way ANOVA results indicated positive association between groups with significance of <0.05 in all domains. (Table 05)

Table 05: Association of questionnaire results with Institutional administration difference of study population. (One-way ANOVA)

|  |  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Team work climate | Between Groups | 747.906 | 27 | 27.700 | 4.474 | .000 |
|  | Within Groups | 1095.772 | 177 | 6.191 |  |  |
|  | Total | 1843.678 | 204 |  |  |  |
| Safety Climate | Between Groups | 1754.113 | 27 | 64.967 | 4.101 | .000 |
|  | Within Groups | 2804.277 | 177 | 15.843 |  |  |
|  | Total | 4558.390 | 204 |  |  |  |
| Job Security | Between Groups | 392.392 | 27 | 14.533 | 2.029 | .004 |
|  | Within Groups | 1268.028 | 177 | 7.164 |  |  |
|  | Total | 1660.420 | 204 |  |  |  |
| Stress recognition | Between Groups | 978.787 | 27 | 36.251 | 2.231 | .001 |
|  | Within Groups | 2875.925 | 177 | 16.248 |  |  |
|  | Total | 3854.712 | 204 |  |  |  |
| Perception of management | Between Groups | 1252.650 | 27 | 46.394 | 3.706 | .000 |
|  | Within Groups | 2215.906 | 177 | 12.519 |  |  |
|  | Total | 3468.556 | 204 |  |  |  |
| Working Condition | Between Groups | 353.656 | 27 | 13.098 | 2.064 | .003 |

| | | | | | |
|---|---|---|---|---|---|
| Within Groups | 1123.446 | 177 | 6.347 | | |
| Total | 1477.102 | 204 | | | |

Df= degree of freedom, F=ratio of between group variability, Sig= Significance ($< 0.05$)

## Discussion:

The aim of this study is to assess the attitude of healthcare workers regarding patient safety within Pakistan. Studies identified that teamwork climate is essential for better patient safety, especially when healthcare professionals work together effectively and collaboratively, it creates an environment that promotes patient safety and quality care. Ji Hwang et al, identified that effective communication among frontline health workers is essential for patient safety, clear and timely communication helps to prevent errors, misunderstandings, and delays in care. It enables healthcare professionals to share critical information, coordinate tasks, and make informed decisions. [15] P Mills et al, shared importance of communication for patient safety and creating safety climate, when team members respect and trust each other's expertise and judgment, they are more likely to collaborate effectively, seek input and address concerns related to patient safety. [16] Effective teamwork requires collaboration and coordination among frontline health workers. P Rangachari et al, conducted a study in USA reporting psychological safety of workers refers to an environment where team members feel safe to speak up, ask questions, and express concerns without fear of retribution. It is crucial for identifying and addressing potential safety issues. When frontline health workers feel psychologically safe, they are more likely to communicate openly, report errors, and engage in discussions that lead to improved patient safety. The results of our study reported better team work climate in public sector hospital as the public sector healthcare organizations are usually run with less employees in Pakistan, making work load higher and necessary for team workers to assist each other, as indicated in a study conducted in Pakistani hospital by R Farooqi et al reported similar results as our study. [17]

A Lyndon et al, reported importance of emotional safety as the perception of employees regarding the importance of safety in their work environment, the level of commitment to safety by the organization, and the overall safety practices and policies in place. [18] LE Pfeifer et al, indicated that healthcare workers should receive regular updates on safety-related topics, including infection control, patient handling, and equipment use. [19] Clearly defined safety policies and procedures, aligned with industry standards and regulations, are essential. These policies should be communicated effectively, easily accessible, and regularly reviewed and updated to ensure they remain relevant. Providing adequate resources, including staffing levels, equipment, and infrastructure, is crucial for maintaining a safe work environment. Healthcare workers should have access to the necessary tools and resources to perform their duties safely. W Rana et al, reported

mental health of medical workers in hospitals are more likely to encounter errors during their work hours. [20-22]

M Chiappetta et al indicated that providing education and training programs that highlight stress management techniques and coping strategies can help individuals recognize stress in themselves and their colleagues. Implementing regular check-ins or assessments to monitor healthcare workers' well-being and stress levels can be beneficial. [23] M Denning et al reported Positive perceptions of management occur when leaders adopt a transformational leadership style that inspires and motivates employees. [24]

LE Sovold et al reported that working conditions for healthcare workers play a vital role in their overall well-being and job satisfaction. Adequate working conditions include factors such as safe and clean environments, appropriate staffing levels, access to necessary equipment and resources, reasonable work hours, and supportive policies. [25] A positive working environment promotes productivity, reduces stress, and enhances the quality of patient care. It is crucial for healthcare organizations to prioritize and invest in providing optimal working conditions for healthcare workers to ensure their physical and mental well-being, retention, and the delivery of effective and compassionate healthcare services. [26]

The attitude and perception of healthcare workers towards safety in Pakistan are critical factors that influence the overall safety culture within healthcare facilities. In recent years, there has been an increasing focus on improving safety practices and raising awareness about patient safety in the Pakistani healthcare system. [27-29] Attitudes and perceptions among healthcare workers regarding safety in Pakistan may vary. While many healthcare professionals are committed to ensuring patient safety and adhering to safety protocols, challenges exist. Factors such as inadequate resources, high workload, limited training opportunities, and hierarchical work cultures can impact safety attitudes. However, efforts are being made to address these issues. Increased emphasis on patient safety education and training programs, the implementation of safety guidelines and protocols, and the establishment of safety committees are steps taken to improve safety culture. [30-32] Additionally, the recognition of safety champions and the promotion of reporting and learning from safety incidents contribute to a positive perception of safety among healthcare workers. To further enhance the attitude and perception of healthcare workers towards safety, ongoing support from healthcare organizations, investment in resources and training, open communication channels, and fostering a blame-free culture are crucial. By prioritizing safety and empowering healthcare workers, Pakistan can continue to improve its safety culture and provide safer healthcare services to its population. [33-34]

**Limitations of the study:**

Cross-sectional study design has its limitations and may encounter recall bias. Smaller sample size was another limitation of the study as less than 150 employees per institutes cannot represent entire team. Socio-economic status of the participants could have played a major role in study results.

## Recommendations:

A comparative analysis study with bigger sample size including socio-economic status, family members and gender-based differences should be done to get thorough view of perceptions and attitudes of healthcare workers towards patient safety.

## Conclusion:

This study concludes that attitude of Frontline Health Workers towards Patient Safety in public sector hospitals and private sector hospitals is noticeably different indicating vast difference of management, leadership, safety climate, teamwork enthusiasm and personal safety among healthcare workers. The main determinant behind this difference could be the lack of resources and increased input of patients in public sector hospitals, while team coordination and association between employees are much better in public sector hospitals.

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