

An exploratory factor analysis to explore the impact of HRM practices on occupational health and safety in healthcare

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Abstract

The interaction of human resource management initiatives including health and safety standards in the healthcare sector is examined in this pilot study. A structured questionnaire consisting of 69 items allocated and filled out by 67 healthcare working professionals of hospitals, clinics, and nursing homes. Analyses in spss v.28 included reliability testing and exploratory factor analysis (efa). Excellent internal consistency (cronbach's $\alpha = 0.983$) and meritorious sampling adequacy ($kmo = 0.867$) where proposed by the test used to access the questionnaire. Five reasonable hrms-ohs constructs (dimensions) where recognised by efa (pca, varimax) as corresponding to 62.02 % of the variables: Work environment & risk prevention; technology & safety monitoring; safety policies & communication; leadership commitment & safety training; and emergency preparedness & compliance. The observation shows that practitioners who claim to align themselves more towards the execution of compliance-oriented practices (ppe, hazardous-waste training, equipment maintenance) than the innovative and motivational measures (ai monitoring, incentive programs, awareness campaigns). These findings are equally considered with the established theories (jd-r, sociotechnical systems, safety climate, social exchange, and institutional theory). A 33 items questionnaire is also provided by the analysis which can be implemented for future research. The studies conclusion's especially the sample size used may be well grounded with awareness. However, for integrating strategic hrms into healthcare safety system, these findings do provide a solid foundation.

Keywords: Hrms; occupational health and safety; healthcare; exploratory factor analysis; safety culture; pilot study.

Introduction

In health care sector where staff often face biological, chemical, ergonomic, and psychological hazards, occupational health and safety is a major concern, since the staff wellbeing directly shapes patient care quality, keeping the workplace safe and healthy is both a legal requirement and a professional responsibility (hasle & limborg, 2006). Previous research shows that weak safety measures lead to more absenteeism, higher stress, and more workplace incidents, which harm both individual performance and organizational effectiveness (fernández-muiz et al., 2009). Ohs has traditionally been seen as a separate compliance function. Yet, modern organizational theory is shifting this view. It now recognizes that ohs is deeply tangled with how people are managed. This is where human resource management (hrms) plays a pivotal role. Hrms can embed occupational safety within healthcare systems by integrating policies, training, and preventive strategies into the organizational framework (agumba & haupt, 2018). Effective hrms practices such as workload management, safe hiring, employee training, and leadership support not only reduce accidents but also foster a safety culture that prioritizes employee well-being (assefa et al., 2021). The leadership commitment which influences employee insights of organizational priorities and promotes compliance to safety standards, has been identified as a censorious driver of safety compliance (schultz, 2010).

Some studies show how healthcare institutions trend to highlight compliance-related activities like productive use of personal protective equipment (ppe), management of different hazardous substance through correct training, or labour laws (abu-khader, 2004).although, the more innovative and motivative side of hrm practices-that include psychological support, safety incentives, digital monitoring, and awareness campaigns-are not always in place (dayanand & chaudhary, 2023). This variance means the compliance side is well established, but the pre-emptive element of hrm that might provide more aura for safety culture and employee engagement is ignored.

Moreover, most operating productive research has mostly studied sector-specific safety arbitrations or compliance strategies-and very little have considered the comprehensive endowment of hrm to ohs in a healthcare environment (fernández-muñiz et al., 2009). As organizations are increasingly realizing the importance of strategic hrm as a foundation for resilience and sustainability, there is a pressing need to explore how hrm may transcend compliance-related issues to address larger safety concerns, including psychosocial issues and technological changes (agumba & haupt, 2018; assefa et al., 2021).

Conducting a pilot study is a crucial step. According to (kunselman, 2024); (srinivasan & lohith, 2017), pilot research refines survey instruments, confirms the reliability and validity of measurement constructs, and ascertains the feasibility of studies on a full scale. Thus, if researchers implement this structured questionnaire in a healthcare environment, they will be able to ascertain whether the tool measures the multidimensionality of hrm's role in protecting ohs and make the necessary changes before undertaking large-scale empirical studies (meera, 2018). Accordingly, the present pilot study has been set with the aim to investigate the contribution of hrm practices in the safeguarding of occupational health and safety in the healthcare industry. The investigation aims to further localize a reliable and valid instrument that can be used in large-scale research in the future, thus contributing to academic research and practical development of workplace safety in healthcare.

Literature review & hypothesis development

Hrm and occupational health & safety (ohs)

The function of human resource management (hrm) is essential in protecting occupational health and safety (ohs) by embedding safety policies, practices, and training within organizational frameworks. (fernándezmuñiz et al., 2009) established that safety management practices positively influence firm performance, emphasizing hrm's role in ensuring compliance and prevention of workplace hazards. In a similar vein, (hasle & limborg, 2006) underscored that preventive occupational health measures are crucial for minimizing risks in small businesses, where formal systems tend to be less robust.

Hrm and pilot studies in safety research

Pilot studies ensure the feasibility and validity of research instruments before fullscale implementation. (kunselman, 2024) highlighted that pilot studies act as essential preliminary steps for improving questionnaires and verifying hypotheses. (srinivasan & lohith, 2017) also claimed that pilot studies improve validity and reliability by detecting unclear elements in measurement tools. Within the hrm-ohs framework, (meera, 2018) illustrated the usefulness of pilot surveys in examining socio-demographic effects on safety results, emphasizing their methodological importance.

Hrm and work environment for risk prevention

Employee well-being is directly impacted by workplace design and hrm procedures like flexible scheduling, safe hiring, and task management. While (abu-khader, 2004) observed

that dangerous human conduct frequently undermines technical safety mechanisms, (agumba & haupt, 2018) found that organizational health and safety standards strongly influenced construction project performance. The job demands–resources (jd-r) model, which being used signifies that sufficient resources (such as staffing and task management) diminish the demand of job within employees to protect their wellbeing, is compatible with these findings (bakker & demerouti, 2007).

Hrm and technology-driven safety monitoring

Within human resource management practices, the offering of technology and significance to soundness of limitation management and safety observing services within human resource management (hrm) practices can quite easily be disregard. Moreover, the transformative leadership practices of hrm units which also involves improved digital audits (ai monitoring) and psychological counselling systems operational and built by (dayanand & chaudhary, 2023) which provide continuous support in quite the opposite direction. Such systems encourage improved transparency, accountability, and psychosocial support improving the overall employee welfare. (dayanand & chaudhary, 2023) aimed to determine the role of transformational leadership in cultivating a cultural orientation to safety through foster systems. Results of the investigation reveal that the enhanced arrangements and structured monitoring systems that are under the additional coordination of hrm, support employee trust in organizational safety practices. Such a viewpoint, is in alignment with the concepts presented in sociotechnical systems theory (trist, 1951) as a system of components where the technology and sociological subsystems the framework as described, constitutes the interface whereby safety is systemically integrated with operational effectiveness and sustainment of the organization. It can derived from the understanding, that through the integration and application of technological systems tools within strategic hrm frameworks, there is likely to be, increased safety monitoring from the hrm units strategic operational frameworks but systemically woven within the global approach of the organization there will be enhanced cultivation of trust and innovation systems to proactively support longer-term provisions of occupational health and safety services.

Hrm and safety policies through communication

Policies addressing harassment, recognition systems, and awareness campaigns are central to developing a positive safety climate. (bibila, 2012) stressed that employee attitudes toward ohs training are critical in shaping compliance (aksorn & hadikusumo, 2008) identified management support and communication as key success factors in improving safety outcomes. This supports (zohar, 1980) **safety climate theory**, which argues that shared perceptions of safety norms shape organizational behaviour.

Hrm and leadership commitment with safety training

Several scholars have elaborated on the concept of commitment on the part of leadership when concerning the compliance of subordinates to safety protocols. (schultz, 2010) noted the alignment of hr competencies with leadership practices increases organizational safety effectiveness. (assefa et al., 2021) also found that certain hrm practices training and leadership have direct effects on employee performance and safety culture. This is elaborated on in the social exchange theory (blau, 1964) which suggests that strong visible commitment on behalf of management will create a reciprocal relationship based on trust and compliance from the workers.

Hrm and emergency preparedness and compliance

Preparedness measures such as crisis management, hazard training, and compensation are critical for organizational resilience. (balanay et al., 2014) identified training and preparedness as determinants of occupational safety awareness, while (rhaffor & maidin, 2014) showed that employee perceptions of compliance mechanisms significantly affect safety culture. These findings resonate with **institutional theory** (dimaggio & powell, 1983), which emphasizes conformity to regulatory and institutional norms to maintain legitimacy and resilience.

Insights from pilot study output

According to the 67 participants of the pilot study proofed that the respondents scored acceptance-based practices like the enforcement of personal protective equipment (ppe), hazardous materials, training and the disposal of sharps very highly (mean > 4.0, while more motivational and innovative practices such as ai monitoring and stimulant programs scored significantly lowered (mean ~ 3.3 -3.5). Five core hrm-ohs constructs were revealed by a certain factor analysis: Work environment and risk prevention, technology & safety monitoring, safety policies & communication, leadership commitment & safety training, and emergency preparedness & compliance.

Hypothesis development

The literature and discovery of the pilot study can be highlighted by subsequent hypotheses: -

H1: Hrm practices in the work environment and risk control (for example: Safe hiring, manageable workloads, flexible hours) positively establish ohs.

H2: Hrm technology and safety supervision (for example: Digital tools, safety audits, psychological first aid) positively achieve ohs outcomes.

H3: Hrm policies and communication frameworks (for example: Anti-harassment, awareness campaigns, recognition systems) driving safety significantly improve ohs.

H4: Hrm facilitates leadership commitment and training policies (for example: Standard enforcement, training) which improve the safety of healthcare workers.

H5: Hrm training and compliance measures (for example: Hazard training, crisis management, compensation systems) positively support ohs in the healthcare industry.

Conceptual Framework: HRM Practices and OHS Outcomes

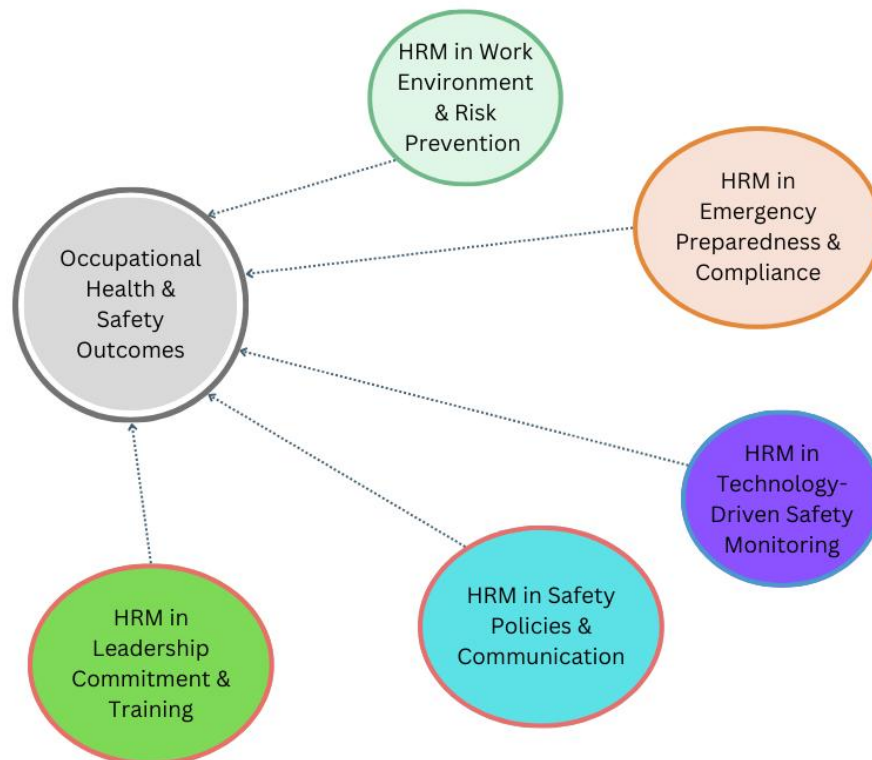


Figure 1: Conceptual framework of hrm practices and occupational health & safety outcomes

This framework illustrates the diverse impact of the practices of hrm regarding the preservation of occupational health and safety in health care settings. Based on prior studies and the findings of pilot studies, the following five hrm dimensions have been defined: (1) work environment & risk prevention; (2) technology & safety monitoring; (3) safety policies & communication; (4) leadership commitment & training; and (5) emergency preparedness & compliance. Each of these dimensions is hypothesized to improve overall ohs outcomes by reducing workplace risks, improving safety culture, and enhancing organizational resilience. This framework incorporates empirical findings from exploratory factor analysis, alongside the theoretical constructs of the job demands–resources model (bakker & demerouti, 2007), sociotechnical systems theory (trist, 1951), safety climate theory (zohar, 1980), social exchange theory (blau, 1986), and institutional theory (dimaggio & powell, 1983).

Table 1: -

Hypothesis	Relationship	Supporting literature
H1	Hrm in work environment & risk prevention→ ohs outcomes	(agumba & haupt, 2018); (abu-khader, 2004) ;(bakker & demerouti, 2007)
H2	Hrm in technology-driven safety monitoring→ ohs outcomes	(dayanand & chaudhary, 2023) (trist, 1951)
H3	Hrm in safety policies &	(aksorn & hadikusumo,

	communication→ ohs outcomes	2008), (zohar, 1980))
H4	Hrm in leadership commitment & training→ ohs outcomes	(schultz, 2010), (assefa et al., 2021), (blau, 1986)
H5	Hrm in emergency preparedness & compliance→ ohs outcomes	(balanay et al., 2014); (rhaffor & maidin, 2014), (dimaggio & powell, 1983)

Methodology

Research design

A quantitative, cross-sectional, pilot survey research design was employed in the present study to assess the role of human resource management (hrm) practices in protecting occupational health and safety (ohs) of employees working in the healthcare establishments. Pilot studies are important precursors to major research by helping to refine instruments and procedures (kunselman, 2024), it is noted that piloting of the tool or instrument can help in establishing validity and reliability because they identify problematic items and ensure feasibility in a new situation/cultural context (srinivasan & lohith, 2017)

Population and sample

The target population comprised healthcare professionals employed in government hospital, private hospital, clinic, nursing home and administrative roles across selected hospitals. For the accessibility of respondents for the pilot study a **convenience sample of 67 respondents** was recruited, consistent with pilot study conventions, which typically involve smaller samples to test research instruments (agumba & haupt, 2018); (meera, 2018). While the relatively small sample size limits generalizability, it is appropriate for exploratory purposes (fernández-muñoz et al., 2009).

Instrument development

The instrument for data collection was a structured questionnaire with 69 items to capture hrm practices pertaining to ohs. Items were scored using a five-point likert scale (1= strongly disagree, 5 = strongly agree). The questionnaire was developed based on the available literature on hrm–ohs linkages (hasle & limborg, 2006), (abu-khader, 2004) and was further refined using the validated tools developed in the earlier pilot studies conducted in the management and safety domain (dayanand & chaudhary, 2023). The full questionnaire which was used for data collection is provided in the appendix 2.

Data collection procedure

Respondents were provided with an online and offline questionnaire. Participation was voluntary, and confidentiality was assured. Ethical approval for the study was obtained from the affiliated institution, and informed consent was secured prior to data collection.

Data analysis

All data was processed with spss, version 28. To carry out the analysis, the following steps were taken:

1. Reliability tests. Cronbach's alpha for internal consistency was set at 0.9. The resulting coefficient was 0.983, which indicates high internal consistency (nunnally, 1978, george and mallery, 2003).

2. Testing sampling adequacy. The kaiser-meyer-olkin (kmo) index for sample adequacy reaches 0.867, which is classified as “meritorious” (kaiser, 1974) and supports the claim. Bartlett’s test of sphericity is significant ($\chi^2 = 1335.889$, $df = 406$, $p < .001$), thus supporting the conclusion that the correlation matrix is suitable for factor analysis.

3. Exploratory factor analysis (efa) was conducted using principal components analysis (pca) with varimax rotation. Five factors were retained using the kaiser criterion (eigenvalues > 1) and supported by the scree plot. These five factors explained 62.02% of the variance. Factor loadings above 0.50 were regarded as significant.

4. Construct identification. The rotated component matrix showed five meaningful constructs.

- Work environment & risk prevention.
- Monitoring technology & safety.
- Safety communication & policy.
- Commitment to safety training & leadership.
- Preparedness for emergencies & compliance.

Items with strong loadings were retained, while cross-loaded or weakly loaded items were considered for removal to enhance construct validity.

Descriptive analysis

The average ratings given by respondents to the hrm practices of ohs for which respondents provided descriptive statistics was positive, with averages between 3.5 to 4.1. High ratings were described about conforming practices like sharp disposals, ppe use, and hazardous materials training (>4.0 means). On the other hand, lower ratings were practised for incentive programs and ai-led monitoring (means of about 3.3-3.5). Even though approval-based safety practices are well institutionalized, motivational and creative hr practices are lacking.

Justification of pilot study

The accessibility of this pilot study made it feasible to produce the measurement instrument and evaluate its construct validity while accurate the components that needed alteration. Accord with the methodological assumption made by (kunselman, 2024) ,(srinivasan & lohith, 2017) was evident. The preparatory findings of the pilot study signify that the instrument created is reliable and secured, theoretically. The findings will deliver recommendation for the upcoming holistic research which will connect a wider and more delegate sample.

Respondent profile

Pilot study participants consisted of 67 healthcare professionals from varying institutions and roles.

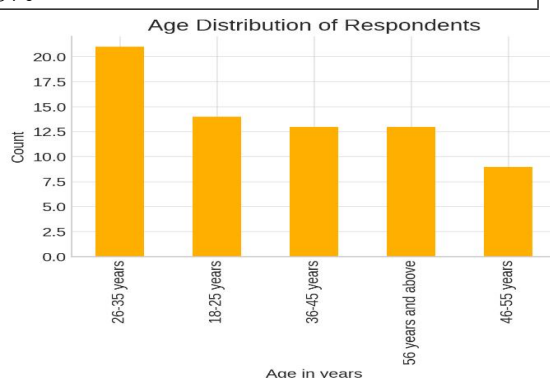
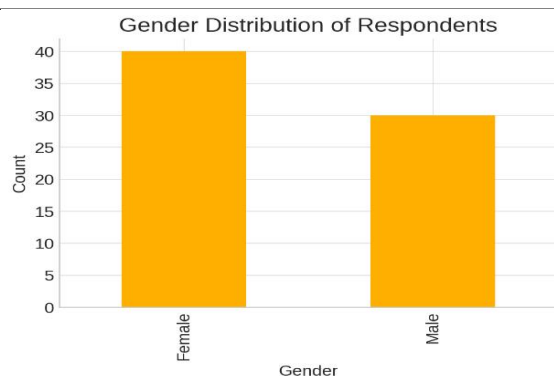
The sample consisted of participants that were 57% females and 43% males with a proportionate representation of sexes in the health care workforce.

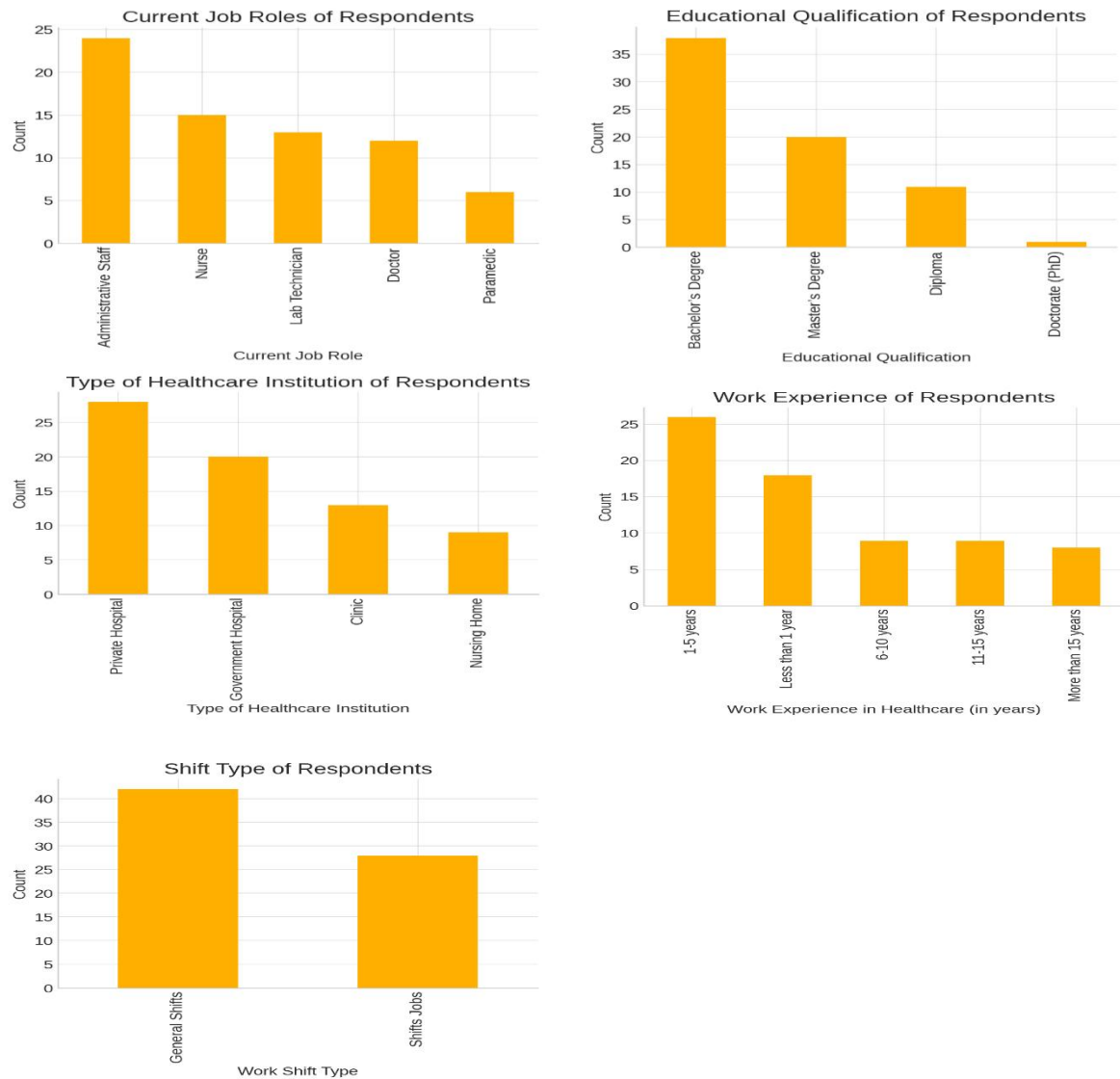
- Age: Majority of participants fell between the ages of 26–35 years (30%), followed by 18–25 years (20%), 36–45 years (19%), 56 years and above (19%), and 46–55 years (13%). This reflects a mix of young-career and experienced professionals.
- Educational qualification: More than half achieved a bachelor's degree (54%), followed by master's degrees (29%), 16% with diplomas, and a minority with doctorate-level qualifications (1%). It is indicative that the sample was biased toward mid-level qualifications.
- Present occupation: There was representation of administrative staff (34%), nurses (21%), laboratory technicians (19%), doctors (17%), and paramedics (9%), indicating coverage of clinical as well as non-clinical medical jobs.

- Work experience: The greatest number had an experience of 1–5 years (37%), followed by less than 1 year (26%), 6–10 years (13%), 11–15 years (13%), and over 15 years (11%). The distribution verifies engagement of fresh entrants and experienced practitioners.
- Type of institution: Participants included largely participants from private hospitals (40%), government hospitals (29%), clinics (19%), and nursing homes (13%), and reflected a range of institutional settings.
- Fraction of shift: The majority (60%) worked general shifts, and 40% worked rotating/shift work.
- Employment status: Maximum number of respondents was full-time employees (64%), followed by 20% contractual and 16% part-time, with varying employment patterns.

Table 2: - respondent profile

Category	Distribution
Gender	Female 57%, male 43%
Age	26–35 years (30%), 18–25 years (20%), 36–45 years (19%), 56 years & above (19%), 46–55 years (13%)
Educational qualification	Bachelor's 54%, master's 29%, diploma 16%, doctorate 1%
Current job role	Admin staff 34%, nurses 21%, lab technicians 19%, doctors 17%, paramedics 9%
Work experience	1–5 years (37%), <1 year (26%), 6–10 years (13%), 11–15 years (13%), >15 years (11%)
Type of institution	Private hospitals 40%, government hospitals 29%, clinics 19%, nursing homes 13%
Shift type	General shifts 60%, shift jobs 40%
Employment status	Full-time 64%, contractual 20%, part-time 16%





Results

Reliability of the instrument

Reliability statistics	
Cronbach's alpha	N of items
0.983	69

To determine the reliability of the 69-item questionnaire, cronbach's alpha was used. The generated coefficient was 0.983 which is far above the suggested cut-off score of 0.70 (nunnally, 1978) and even 0.90 (george & mallery, 2003) for excellent reliability. This result indicates that to capture hrn practices relevant to ohs this tool is very definitive and powerful. It is likely that strong internal consistency indicates that items on the scale are conceptually unified and consistent, this confirms the use in subsequent large-scale research.

Table 3: - descriptive statistics

	Mean	Std. Dev	N
1.hr actively enforces workplace safety	3.58	1.002	67

standards.			
2.the use of masks is mandatory, and there is an emphasis on the correct use of ppe.	3.54	1.185	67
3.there is a well-established safety culture supported by leadership.	3.67	1.160	67
4.there is an effective mechanism for reporting and investigating safety incidents.	3.63	1.071	67
5.employees feel safe reporting safety issues without fear of retaliation.	3.69	1.144	67
6.hr ensures psychological first-aid training for workers dealing with trauma.	3.76	1.156	67
7. The organization uses digital tools to track and improve workplace safety.	3.72	1.229	67
8.management demonstrates a strong commitment to worker safety.	3.69	.988	67
9.the health and medical records of every worker are maintained.	3.90	.987	67
10.personal protective equipment (ppe) is readily available, and its usage is strictly enforced.	4.06	.795	67
11.safety considerations are included in hr's strategic planning.	3.94	1.028	67
12.safety training effectively improves the understanding of ppe usage and emergency response.	3.75	1.119	67
13. Hr complies with labor laws and occupational safety regulations.	4.00	1.030	67

14. Employees have received training on handling hazardous materials and medical waste.	4.09	.981	67
15. There are established procedures for reporting workplace hazards.	3.75	.990	67
16. Hr conducts regular safety audits and risk assessments.	3.88	1.008	67
17. Hr has emergency response plans for various hazards, including fire, chemical exposure, and patient aggression.	3.88	.962	67
18. Compensation is provided for injured workers.	3.82	1.058	67
19. The organization has formal safety policies integrated into hr practices.	3.87	1.140	67
20. Employees are well-informed about workplace safety protocols.	3.88	.946	67
21.in-person psychological training and preparation are provided in the department to reduce staff stress and anxiety.	3.94	1.043	67
22. Employees discuss health and safety issues with their supervisors.	3.82	1.029	67
23. Supervisors ensure compliance with guidelines on the use of chemicals and other hazardous substances in the workplace.	3.79	1.008	67
24. Safety documents and emergency protocols are clearly displayed in the workplace.	3.73	1.149	67
25. The organization has clear policies for crisis	3.82	1.086	67

management and disaster preparedness.			
26. Hr utilizes ai-driven monitoring systems to enhance workplace safety.	3.36	1.151	67
27. The organization has safety incentives and recognition programs.	3.54	1.185	67
28. Hr takes proactive steps to promote safety awareness through campaigns.	3.55	1.171	67
29. There is regular communication between employees and management about safety issues.	3.79	.946	67
30. Training on infection control measures is regularly provided.	3.88	1.066	67
31. There are qualified personnel to provide safety training and make safety decisions at the workplace.	3.93	.910	67
32. Hr ensures regular health monitoring programs for employees.	3.91	1.041	67
33. The organization celebrates and appreciates employees for maintaining safety standards.	3.96	.912	67
34. Hr effectively addresses safety complaints and concerns.	4.00	1.030	67
35. Employees actively involved in safety-related decision-making processes.	4.01	1.022	67
36. Employees receive sufficient training, skills, and knowledge to use machinery and tools safely.	4.03	.953	67
37. The disposal of sharps (needles, scalpels, etc.) follows proper	4.13	.886	67

safety protocols.			
38. Hr ensures safety measures are inclusive of gender and disability considerations.	4.00	1.073	67
39. The organization has a regular maintenance and inspection system for workplace equipment.	4.06	.952	67
40. There is an accessible system for raising safety-related concerns.	3.94	.967	67
41. Hr has policies to address workplace harassment and bullying.	3.75	1.283	67
42. Employees are involved in safety decision-making processes.	3.94	.983	67
43. Hr regularly updates safety protocols based on data analytics and incident trends.	3.88	1.038	67
44. The organization takes steps to manage workload and prevent burnout.	3.96	.976	67
45. Employees receive financial or non-financial rewards for adhering to safety protocols.	3.88	1.038	67
46. Flexible work schedules are available to ensure employees get adequate rest.	3.78	1.027	67
47. Hr provides vaccination programs and disease prevention initiatives.	3.84	1.109	67
48. Safety performance is considered in employee appraisals.	3.91	1.041	67
49. The organization promotes a psychologically safe and supportive work	3.93	.958	67

environment.			
50. The organization has sufficient fire warning and evacuation systems.	3.81	1.062	67
51. The organization has established procedures for the proper disposal of biomedical waste and effluents.	4.00	1.015	67
52. Employees have been regularly reminded by managers to practice safe work habits.	3.94	.998	67
53. Hr ensures continuous professional development programs focused on emerging occupational health risks	4.04	.991	67
54. The organization maintains health and safety protocols in its strategic planning.	3.75	1.092	67
55. Incident reporting and hazard identification are managed through digital systems.	3.84	1.067	67
56. Management takes necessary actions to prevent workplace hazards.	3.99	1.007	67
57. Hr provides safety training regularly for all healthcare workers.	3.94	.967	67
58. The organization ensures adequate staffing levels to prevent fatigue and overwork.	3.82	1.114	67
59. Hr policies ensure proper shift rotation to minimize employee burnout.	3.78	1.191	67
60. There are enough trained personnel available for emergency response.	3.72	1.084	67
61. Safe hiring practices, including background checks, are conducted for high-risk roles.	3.90	1.116	67

62. Employees have received information about prevention upon joining the organization.	3.76	1.116	67
63. The organization emphasizes proper use of ppe, with regular training on emergency response.	3.93	1.034	67
64. The organization maintains safety documents that are accessible to all employees.	3.90	1.046	67
65. Management resolves safety concerns raised by workers.	4.00	.969	67
66. The organization ensures that safety considerations are integrated into all hr practices.	3.82	1.100	67
67. Supervisors ensure compliance with safety guidelines regarding chemicals and hazardous substances.	4.04	.928	67
68. Ppe is provided at work as required to safeguard health and safety.	3.90	.956	67
69. The organization's leadership demonstrates a strong commitment to worker safety.	4.01	1.022	67

Descriptive statistics showed that the respondents rated hrm practices for ohs mostly positively, on average from 3.5 to 4.1 (on a five-point scale). The practices receiving the highest scores were compliance-oriented activities such as how sharps were disposed of ($m = 4.13$, $sd = 0.89$), hazardous materials and medical waste training ($m = 4.09$, $sd = 0.98$), ppe availability and enforcement ($m = 4.06$, $sd = 0.80$) and equipment was maintained on a regular basis ($m = 4.06$, $sd = 0.95$). these findings are consistent with (fernández-muñiz et al., 2009), who argued that regulatory compliance measures are often institutionalized as core hrm safety practices in healthcare organizations. For comparison points, relatively lower mean ratings were seen for ai-based monitoring programs ($m = 3.36$, $sd = 1.15$), safety incentives ($m = 3.54$, $sd = 1.19$), and awareness programs ($m = 3.55$, $sd = 1.17$). This implies less priority for motivational and innovative human resource management methods and hence supports findings to reflect employee views regarding safe programs being influenced by active involvement and incentives and not solely through regulation compliance. The middle

ratings for psychological first aid ($m = 3.76$, $sd = 1.16$), supervisor communications involving employees' concerns and feedback to supervisors ($m = 3.82$, $sd = 1.03$), and supportive safety culture ($m = 3.67$, $sd = 1.16$) identify areas for improvement for (hasle & limborg, 2006) participatory practices.

Sampling adequacy and factorability

Kmo and bartlett's test			
Kaiser-meyer-olkin	measure	of sampling	0.867
adequacy.			
Bartlett's	test	of	Approx. Chi-square
sphericity			1335.889
		Df	406
		Sig.	<0.001

The kaiser-meyer-olkin (kmo) measure of sampling adequacy gave a value of 0.867, in the range of "Meritorious" (kaiser, 1974). Moreover, bartlett's test of sphericity was significant at the statistical level ($\chi^2 = 1335.889$, $df = 406$, $p < 0.001$) and thus verified the presence of adequate correlation between the items to support a rationale for the performance of factor analysis. These results reaffirm that the data set is appropriate for exploratory factor analysis (efa) as required in the methodology defined by (hair et al., 2010).

Communalities

The subsequent section of the output comprises a table of communalities that illustrates the extent to which the variance in the variables has been elucidated by the derived factors. In this assessment, the extraction values are predominantly elevated, typically oscillating between 0.70 and 0.88, signifying that a significant proportion of variance associated with each item is elucidated by the factors. For instance, 87.8% of the variance pertaining to "There is a well-established safety culture supported by leadership" Is clarified, whereas 71.8% of the variance related to "The organization celebrates and appreciates employees for maintaining safety standards" Is detailed. Items such as "The organization maintains safety documents accessible to all employees" (88.2%) and "Disposal of sharps follows proper safety protocols" (86.7%) exhibit particularly elevated communalities, indicating robust concordance with the extracted factors. Even the minimum values, exemplified by "In-person psychological training to reduce stress" (70.9%), surpass the widely acknowledged threshold of 0.50, thereby affirming that all variables are aptly represented within the factor solution. Collectively, the communalities imply that the extracted factors adeptly encapsulate much of the information inherent in the observed variables, rendering the data amenable to further interpretation, and the communalities are notably high, ensuring all items are competently represented. The corresponding table of communalities has been included in the appendix 1 for reference.

Total variance explained

The following output describes all the factors obtained through principal component analysis along with their corresponding eigenvalue, percentage of variance explained, and cumulative variance. Following kaiser's criterion (eigenvalue > 1), 14 components were extracted. The first factor explains the highest amount of variance and accounts for 46.91%, followed by the second factor accounting for 5.40% and third factor accounting for 3.42%. The first three components combined explain 55.74% of total variance. As we add further factors to account for cumulative variance, it increases at a cumulative 80.10% through adding the 14th factor. This implies that these 14 extracted components combined explain about 80% of total

variability present in the dataset and is considered a sound representation. The dominance by the first component suggests its key responsibility to capture the common variance among safety-related hrn items and subsequent factors add smaller but nonetheless noticeable proportions to explain variance, next output shows all the factors extracted through principal component analysis, along with their eigenvalues, percentage of variance explained, and cumulative variance. According to kaiser's criterion (eigenvalues > 1), 14 components were extracted. The first factor explains the largest share of variance, accounting for 46.91%, followed by the second factor at 5.40% and the third factor at 3.42%. Together, the first three components explain 55.74% of the total variance. As more factors are added, the cumulative variance increases, reaching 80.10% with the 14th factor. This indicates that these 14 extracted components collectively account for about 80% of the total variability in the dataset, which is considered a strong representation. The dominance of the first component suggests that it plays a particularly important role in capturing common variance among the safety-related hrn items, while the subsequent factors account for smaller but still meaningful proportions of variance.

Table 4: - total variance explained

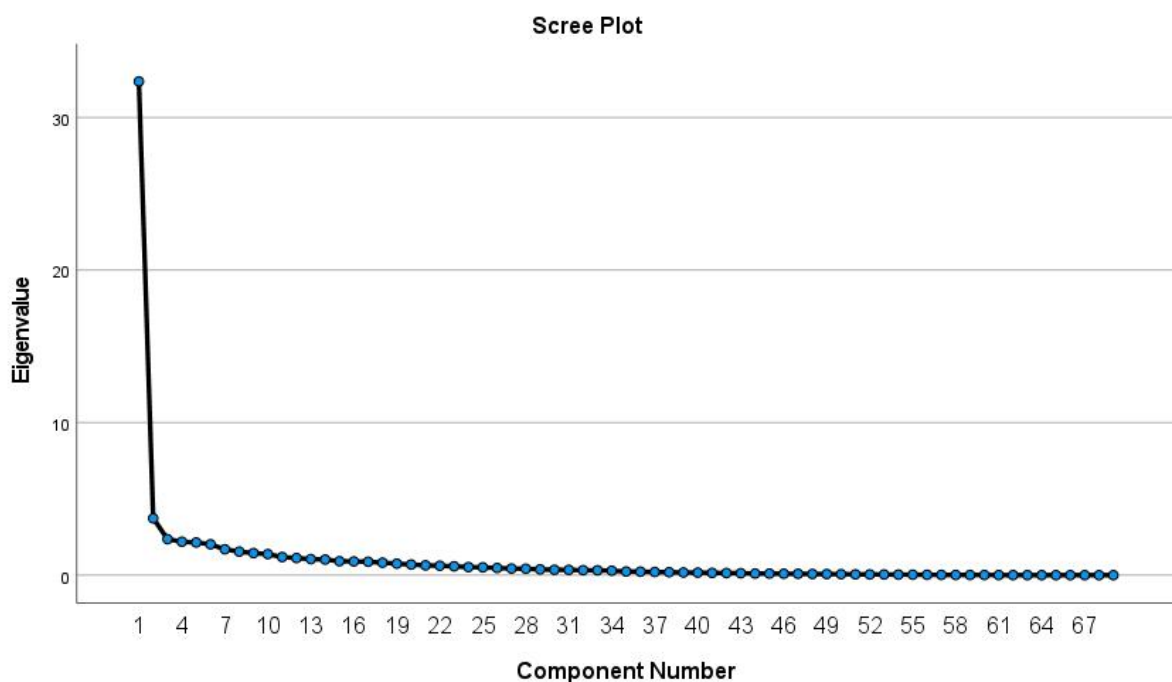
Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	32.370	46.914	46.914	32.370	46.914	46.914
2	3.727	5.402	52.315	3.727	5.402	52.315
3	2.363	3.424	55.740	2.363	3.424	55.740
4	2.192	3.178	58.917	2.192	3.178	58.917
5	2.143	3.106	62.023	2.143	3.106	62.023
6	2.022	2.931	64.954	2.022	2.931	64.954
7	1.696	2.458	67.413	1.696	2.458	67.413
8	1.544	2.237	69.650	1.544	2.237	69.650
9	1.448	2.098	71.748	1.448	2.098	71.748
10	1.379	1.999	73.747	1.379	1.999	73.747
11	1.187	1.720	75.468	1.187	1.720	75.468
12	1.122	1.627	77.094	1.122	1.627	77.094
13	1.053	1.526	78.620	1.053	1.526	78.620
14	1.022	1.481	80.101	1.022	1.481	80.101
15	.915	1.325	81.426			
16	.899	1.303	82.729			
17	.879	1.274	84.004			
18	.819	1.187	85.190			
19	.754	1.093	86.283			
20	.696	1.008	87.292			
21	.644	.934	88.225			
22	.618	.896	89.121			
23	.581	.842	89.963			
24	.528	.766	90.729			
25	.510	.740	91.468			
26	.472	.684	92.152			
27	.432	.626	92.778			
28	.421	.610	93.388			
29	.380	.551	93.940			

30	.351	.508	94.448			
31	.347	.503	94.950			
32	.325	.471	95.421			
33	.316	.458	95.880			
34	.292	.423	96.302			
35	.240	.347	96.650			
36	.229	.333	96.982			
37	.210	.305	97.287			
38	.195	.282	97.570			
39	.174	.253	97.822			
40	.167	.242	98.064			
41	.149	.216	98.280			
42	.138	.200	98.480			
43	.126	.183	98.663			
44	.106	.153	98.817			
45	.103	.150	98.966			
46	.095	.137	99.104			
47	.090	.130	99.234			
48	.076	.111	99.345			
49	.073	.106	99.450			
50	.065	.094	99.544			
51	.053	.077	99.622			
52	.048	.069	99.690			
53	.045	.066	99.756			
54	.037	.053	99.809			
55	.032	.046	99.855			
56	.026	.037	99.892			
57	.019	.028	99.920			
58	.016	.023	99.943			
59	.012	.018	99.961			
60	.011	.015	99.976			
61	.007	.011	99.987			
62	.005	.007	99.994			
63	.003	.004	99.998			
64	.001	.002	99.999			
65	.000	.000	100.000			
66	9.482e-5	.000	100.000			
67	1.352e-16	1.959e-16	100.000			
68	-2.057e-17	-2.981e-17	100.000			
69	-9.334e-17	-1.353e-16	100.000			
Extraction method: Principal component analysis.						

Scree plot

Scree plot is a graphical representation showing eigenvalues versus different factors and is an aid to finding out the optimal number of factors to retain. The graphical display shows a sharp drop after the first factor with a steady levelling off from around the third to fourth factor. This finding points to a threshold beyond which there is diminishing explanatory contribution from further factors added. Though Kaiser's criterion (eigenvalue > 1) suggested 14 factors in total, the scree plot clearly points towards a leaner system. Considering both the inflection point where the curve bends and cumulative variance explained, a final choice of five factors was made which cumulatively explained 62.02% of total variance.

The "Elbow" Point on the scree-plot serves as a method to identify the ideal number of factors to keep during exploratory factor analysis (efa). While the Kaiser criterion recommends retaining all factors that have an eigenvalue exceeding 1, it can lead to the selection of too many factors, particularly when dealing with many items. In our research, the Kaiser criterion indicated that 14 factors should be retained, since each factor's eigenvalue surpassed 1, together accounting for 80.10% of the variance. The scree plot, which displays the eigenvalues in a descending order, offers a visual and more effective method for determining the number of factors to retain. The plot from our analysis indicates a sharp drop after the first factor, followed by a much slower tapering off. The "Elbow" Or inflection point on the curve is where the steep decline begins to noticeably level out. In this instance, the plot clearly shows an "Elbow" At the fifth factor, suggesting that factors 1 through 5 accounts for a significant portion of the variance, whereas the later factors (6 through 14) add only marginally to the total variance explained. By keeping the five factors identified at or before this "Elbow" Point, the analysis effectively captures the most meaningful and substantial dimensions within the data while excluding the weaker, less interpretable factors. This choice is additionally backed by the observation that these five elements together account for 62.02% of the variance, signifying a significant and meaningful interpretation of the dataset. The theoretical consistency of these five elements with recognized theories like the job demands-resources model and social exchange theory enhances the decision, offering both statistical and conceptual credibility for the selected solution.



Justification for factor extraction

Factor extraction was governed by the kaiser criterion (eigenvalue > 1), thus ensuring that components extracted explain a larger amount of variance compared to any one observed variable at a time (kaiser, 1974); (hair et al., 2010). The analysis yielded a solution where there existed five such factors present, and the scree plot further confirmed this finding by expressing an inflection point after the fifth factor (cattell, 1966). The application of both techniques increases the statistical strength of the solution (fabrigar et al., 1999). Conceptually, these five factors align with established theories: Workload and risk prevention with the jd-r model (bakker & demerouti, 2007), technology monitoring with sociotechnical systems theory (trist, 1951), safety policies with safety climate theory (zohar, 1980), leadership commitment with social exchange theory (blau, 1986), and compliance with institutional theory (dimaggio & powell, 1983). Prior hr–ohs research also supports these dimensions (fernández-muñoz et al., 2009); (agumba & haupt, 2018); (hasle & limborg, 2006) Therefore, the maintenance of five factors is backed by theoretical bases as well as by empirical evidence.

Factors extracted from rotated component matrix

Factor	Key items with high loadings	Interpretation / label
Factor 1: Work environment & risk prevention	Flexible work schedules (.789), workload management (.743), safety performance in appraisals (.673), safe hiring practices (.655), safety concern reporting (.646), regular maintenance (.559), adequate staffing (.550), vaccination & disease prevention (.518), hazard prevention by management (.518)	Focuses on organizational practices that reduce workload, prevent burnout, and ensure both physical and psychological safety.
Factor 2: Technology & safety monitoring	Psychological first-aid training (.719), digital safety tools (.708), safety in hr planning (.687), medical records (.664), incident reporting mechanisms (.606)	Represents use of technology-driven systems and structured hr processes for monitoring, reporting, and ensuring safety.
Factor 3: Safety policies & communication	Anti-harassment policies (.684), ai-driven monitoring (.679), safety awareness campaigns (.652), safety incentives (.651), fire/evacuation systems (.614), communication on safety issues (.571)	Emphasizes policies, awareness, and continuous communication between employees and management to build a safety culture.
Factor 4: Leadership commitment & safety training	Enforcing workplace safety standards (.730), safe reporting culture (.689), ppe use (.687), leadership commitment (.586), resolving safety concerns (.513)	Reflects visible leadership support, enforcement of safety protocols, and employee empowerment in raising concerns.
Factor 5: Emergency preparedness & compliance	Compliance with labor laws (.765), hazardous material training (.606), ppe availability (.562), supervisor compliance checks (.598), crisis management & emergency plans (.765, .621), compensation for injured workers (.617)	Captures formal safety compliance, emergency preparedness, and support systems for handling hazards and protecting employees.

Process of naming factors

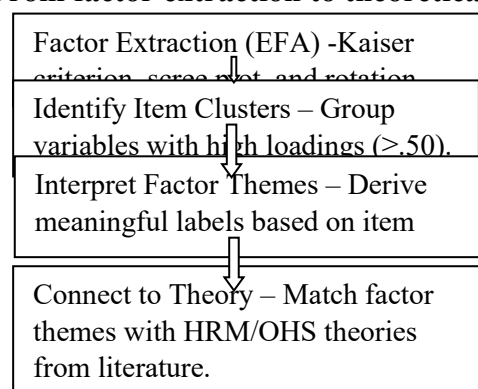
1. Keep variables with highest loadings for each factor (.50 and above).
2. Identify the overriding theme that ties those items together consistently.
3. A concise descriptive tag best representing the shared idea.
4. Recognize theoretical consistency with hrn and occupational health & safety (ohs) literature so that label is not only statistical but conceptually correct.

The five extracted factors were labelled by reviewing items with highest loadings ($\geq .50$) and finding common themes with hrn and occupational health & safety (ohs) literature. Factor 1, work environment & risk prevention, loads items regarding workload management, safe hiring, and staffing practices. Factor 2, technology & safety monitoring, mirrors digital tools' contribution, reporting pathways, and psychological first aids to safety management. Factor 3, safety policies & communication, focuses on policies, awareness campaigns, and communication to achieve a safety culture. Factor 4, leadership commitment & safety training, points to leadership support, enforcement of safety standards, and training. Lastly, factor 5, emergency preparedness & compliance, embodies formal compliance, hazardous materials training, and crisis management. Collectively, these factors present a structured representation of hrn's contribution to protecting occupational health and safety.

Factor-to-theory mapping

To strengthen the conceptual foundation of the study, five extracted factors were interpreted towards known organizational and hrn theories. Factor 1 (work environment & risk prevention) it reflects the practices such as workload management, flexible working hours, and risk avoidance and is imbalance with job demands- resources (jd-r) model (bakker & demerouti, 2007), as it focuses on balancing organizational demands with relevant resources to ensure employee well-being. Factor 2 (technology & safety monitoring), it is characterised by technology -enabled safety tools, incident reporting procedures, and psychological first-aid measures which is based on sociotechnical systems theory (trist, 1951), which ultimately frame human and technical subsystem to ensure efficient safety management. Facotor3 (safety policies & communication), this makes an alignment with safety climate theory (zohar, 1980), which mainly highlighting the safety policies and procedures, awareness programs and communications, as it presumes collective intuition regarding safety norms which determine organizational safety culture. Factor 4 (leadership commitment & safety training) forming an alignment with social exchange theory (blau, 1964), this focuses on leadership commitment and enforcement of safety standards through training, since commitment by leadership would ensure alternative employee cooperation and trust. Lastly, factor 5 (emergency preparedness & compliance), with its coverage through labour law compliance, hazardous materials training and crisis management planning, is aligned with institutional theory (dimaggio & powell, 1983), highlighting conformity to external regulations and institutional norms to ensure legitimacy and resilience.

Figure 2: - process: From factor extraction to theoretical justification



↓
Theoretical Justification – Cite relevant theories (e.g., JD-R, Safety Climate, SET) to ensure alignment.

Limitations of the pilot study

1. A pilot sample of 67 is relatively small, which limits the generalizability of findings to the larger population.
2. With a small number of participants, the study has lower statistical power, making it harder to detect subtle relationships or differences.
3. Kmo (.867) and bartlett's test were adequate; factor analysis usually benefits from larger samples (generally >100–200) for more stable loadings.
4. With 67, there is a chance of overfitting or unstable factor extraction.
5. Diverse organizational, cultural and demographic differences that may impact the people's view of occupational health and safety might not be captured by a small pilot sample.
6. Findings from the pilots are explanatory and preliminary, they are mainly used to refine the questionnaire identify problematic items and test reliability rather than making certain less conclusions

Conclusion

This pilot study mainly focusses on the role played by the human resource management practices based on protection of occupational health and safety in the field of healthcare industry. Five dimensions were derived based on these results- work environment & risk prevention, technology & safety surveillance, safety policies & communication, leadership commitment & safety training, and emergency preparedness & compliance—reflecting the complex nature of hrm's role in workplace safety. According to the suggestion of these findings the workplace incentives happening for some issues such as ppe, hazardous materials training, and equipment servicing are greater than those for innovating, motivational practices, like safety rewards, ai safety systems, and safety promotions. This difference restates the existing literature which suggests the focus of the organization is on adherence above active participations in the development of safety culture. From the present study the development and testing of an instrument was conceptually and empirically valid with high reliability ($\alpha = 0.983$; kmo = 0.867) and reduced the questionnaire to 33 items with high factor loading that can be used by the researcher on a larger scale. Moreover, here the sample size ($n = 67$) is small due to which the pilot study is limited, and it also provides a significant foundation for the upcoming future studies. In short, compliance innovated practices such as participatory and novel enable hrm to transform occupational health and safety (ohs).

Appendix 1: -table for communalities

	Initial	Extraction
1.hr actively enforces workplace safety standards.	1.000	.752
2.the use of masks is mandatory, and there is an emphasis on the correct use of ppe.	1.000	.791
3.there is a well-established safety culture supported by leadership.	1.000	.878

4.there is an effective mechanism for reporting and investigating safety incidents.	1.000	.751
5.employees feel safe reporting safety issues without fear of retaliation.	1.000	.736
6.hr ensures psychological first-aid training for workers dealing with trauma.	1.000	.829
7. The organization uses digital tools to track and improve workplace safety.	1.000	.787
8.management demonstrates a strong commitment to worker safety.	1.000	.795
9.the health and medical records of every worker are maintained.	1.000	.777
10.personal protective equipment (ppe) is readily available, and its usage is strictly enforced.	1.000	.777
11.safety considerations are included in hr's strategic planning.	1.000	.819
12.safety training effectively improves the understanding of ppe usage and emergency response.	1.000	.810
13. Hr complies with labor laws and occupational safety regulations.	1.000	.763
14. Employees have received training on handling hazardous materials and medical waste.	1.000	.831
15. There are established procedures for reporting workplace hazards.	1.000	.730
16. Hr conducts regular safety audits and risk assessments.	1.000	.802
17. Hr has emergency response plans for various hazards, including fire, chemical exposure, and patient aggression.	1.000	.823
18. Compensation is provided for injured workers.	1.000	.838
19. The organization has formal safety policies integrated into hr practices.	1.000	.748
20. Employees are well-informed about workplace safety protocols.	1.000	.818
21. In-person psychological training and preparation are provided in the department to reduce staff stress and anxiety.	1.000	.709
22. Employees discuss health and safety issues with their supervisors.	1.000	.803
23. Supervisors ensure compliance with guidelines on the use of chemicals and other hazardous substances in the workplace.	1.000	.795
24. Safety documents and emergency protocols are clearly displayed in the workplace.	1.000	.799
25. The organization has clear policies for crisis management and disaster preparedness.	1.000	.818
26. Hr utilizes ai-driven monitoring systems to enhance workplace safety.	1.000	.773
27. The organization has safety incentives and recognition programs.	1.000	.879

28. Hr takes proactive steps to promote safety awareness through campaigns.	1.000	.847
29. There is regular communication between employees and management about safety issues.	1.000	.825
30. Training on infection control measures is regularly provided.	1.000	.854
31. There are qualified personnel to provide safety training and make safety decisions at the workplace.	1.000	.738
32. Hr ensures regular health monitoring programs for employees.	1.000	.816
33. The organization celebrates and appreciates employees for maintaining safety standards.	1.000	.718
34. Hr effectively addresses safety complaints and concerns.	1.000	.767
35. Employees actively involved in safety-related decision-making processes.	1.000	.774
36. Employees receive sufficient training, skills, and knowledge to use machinery and tools safely.	1.000	.757
37. The disposal of sharps (needles, scalpels, etc.) follows proper safety protocols.	1.000	.867
38. Hr ensures safety measures are inclusive of gender and disability considerations.	1.000	.873
39. The organization has a regular maintenance and inspection system for workplace equipment.	1.000	.806
40. There is an accessible system for raising safety-related concerns.	1.000	.810
41. Hr has policies to address workplace harassment and bullying.	1.000	.763
42. Employees are involved in safety decision-making processes.	1.000	.738
43. Hr regularly updates safety protocols based on data analytics and incident trends.	1.000	.778
44. The organization takes steps to manage workload and prevent burnout.	1.000	.841
45. Employees receive financial or non-financial rewards for adhering to safety protocols.	1.000	.806
46. Flexible work schedules are available to ensure employees get adequate rest.	1.000	.850
47. Hr provides vaccination programs and disease prevention initiatives.	1.000	.822
48. Safety performance is considered in employee appraisals.	1.000	.833
49. The organization promotes a psychologically safe and supportive work environment.	1.000	.809
50. The organization has sufficient fire warning and evacuation systems.	1.000	.784
51. The organization has established procedures for the proper disposal of biomedical waste and effluents.	1.000	.781
52. Employees have been regularly reminded by managers	1.000	.841

to practice safe work habits.		
53. Hr ensures continuous professional development programs focused on emerging occupational health risks.	1.000	.772
54. The organization maintains health and safety protocols in its strategic planning.	1.000	.861
55. Incident reporting and hazard identification are managed through digital systems.	1.000	.765
56. Management takes necessary actions to prevent workplace hazards.	1.000	.752
57. Hr provides safety training regularly for all healthcare workers.	1.000	.836
58. The organization ensures adequate staffing levels to prevent fatigue and overwork.	1.000	.827
59. Hr policies ensure proper shift rotation to minimize employee burnout.	1.000	.771
60. There are enough trained personnel available for emergency response.	1.000	.774
61. Safe hiring practices, including background checks, are conducted for high-risk roles.	1.000	.805
62. Employees have received information about prevention upon joining the Organization.	1.000	.865
63. The organization emphasizes proper use of ppe, with regular training on emergency response.	1.000	.794
64. The organization maintains safety Documents that are accessible to all employees.	1.000	.882
65. Management resolves safety concerns raised by workers.	1.000	.799
66. The organization ensures that safety considerations are integrated into all hr practices.	1.000	.852
67. Supervisors ensure compliance with safety guidelines regarding chemicals and hazardous substances.	1.000	.750
68. Ppe is provided at work as required to safeguard health and safety.	1.000	.782
69. The organization's leadership demonstrates a strong commitment to worker safety.	1.000	.852

Extraction method: Principal component analysis.

Appendix 2: Structured questionnaire used for the pilot study

I sidhartha dash, a doctoral scholar pursuing my research work leading to phd on the topic “contribution of hrm for safeguarding the occupational health and safety of the healthcare sector” Under the supervision of prof. Biswajit satpathy in the department of business administration, sambalpur university. I would like to request you, being a health care professional, spare sometime and fill up the questionnaire below to help me to get the required information for my study which will be kept confidential and only be utilised for research purpose. I will be very thankful for your participation and cooperation.

Occupational health and safety:

As a healthcare worker, you face exposure to health risks such as virus attacks, contagious diseases, prolonged work hours, physical strain, and the need for constant attentiveness. Ensuring occupational health and safety is essential for your well-being. This questionnaire aims to assess your perception of the safety measures and risk mitigation efforts implemented by your hospital. Your cooperation is highly valued.

Express your level of agreement or disagreement regarding following statements on a scale of 1 to 5, where 1 being strongly disagree, 2 denote disagree, 3 denote neutral, 4 denote agree and 5 denote strongly agree.

Section 1: Personal information

1. Age group:

- 18-25 years ☐
- 26-35 years ☐
- 36-45 years ☐
- 46-55 years ☐
- 56 years and above ☐

2. Gender:

- Male ☐
- female ☐

3. Educational qualification:

- Diploma ☐
- bachelor's degree ☐
- Master's degree ☐
- doctorate (phd) ☐

Section 2: Employment details

4. Current job role:

- Doctor ☐
- nurse ☐
- paramedic ☐
- lab technician ☐
- Administrative staff ☐
- Other (please specify):

5. Work experience in healthcare (in years):

- Less than 1 year ☐
- ☐
- ☐
- ☐
- ☐

1-5 years
6-10 years
11-15 years
more than 15 years

6. Type of healthcare institution:

Government hospital ☐
private hospital ☐
clinic ☐
nursing home ☐
other (please specify): _____ ☐

7. Work shift type: ☐

Shifts jobs ☐
General shifts ☐

8. Employment status: ☐

Full-time ☐
part-time ☐
contractual ☐

Section 2:

Constructs	Items	Sd	D	N	A	Sa
		1	2	3	4	5
1	Hr actively enforces workplace safety standards.					
2	The use of masks is mandatory, and there is an emphasis on the correct use of ppe.					
3	There is a well-established safety culture supported by leadership.					
4	There is an effective mechanism for reporting and investigating safety incidents.					
5	Employees feel safe reporting safety issues without fear of retaliation.					
6	Hr ensures psychological first-aid training for workers dealing with trauma.					
7	The organization uses digital tools to track and improve workplace safety.					
8	Management demonstrates a strong commitment to worker safety.					
9	The health and medical records of every worker are maintained.					
10	Personal protective equipment (ppe) is readily available, and its usage is strictly enforced.					
11	Safety considerations are included in hr's strategic planning.					
12	Safety training effectively improves the understanding of ppe usage and emergency response.					
13	Hr complies with labor laws and occupational safety regulations.					
14	Employees have received training on handling hazardous materials and medical waste.					

15	There are established procedures for reporting workplace hazards.					
16	Hr conducts regular safety audits and risk assessments.					
17	Hr has emergency response plans for various hazards, including fire, chemical exposure, and patient aggression.					
18	Compensation is provided for injured workers.					
19	The organization has formal safety policies integrated into hr practices.					
20	Employees are well-informed about workplace safety protocols.					
21	In-person psychological training and preparation are provided in the department to reduce staff stress and anxiety.					
22	Employees discuss health and safety issues with their supervisors.					
23	Supervisors ensure compliance with guidelines on the use of chemicals and other hazardous substances in the workplace.					
24	Safety documents and emergency protocols are clearly displayed in the workplace.					
25	The organization has clear policies for crisis management and disaster preparedness.					
26	Hr utilizes ai-driven monitoring systems to enhance workplace safety.					
27	The organization has safety incentives and recognition programs.					
28	Hr takes proactive steps to promote safety awareness through campaigns.					
29	There is regular communication between employees and management about safety issues.					
30	Training on infection control measures is regularly provided.					
31	There are qualified personnel to provide safety training and make safety decisions at the workplace.					
32	Hr ensures regular health monitoring programs for employees.					
33	The organization celebrates and appreciates employees for maintaining safety standards.					
34	Hr effectively addresses safety complaints and concerns.					
35	Employees actively involved in safety-related decision-making processes.					
36	Employees receive sufficient training, skills, and knowledge to use machinery and tools safely.					
37	The disposal of sharps (needles, scalpels, etc.) follows proper safety protocols.					
38	Hr ensures safety measures are inclusive of gender and disability considerations.					
39	The organization has a regular maintenance and inspection					

	system for workplace equipment.					
40	There is an accessible system for raising safety-related concerns.					
41	Hr has policies to address workplace harassment and bullying.					
42	Employees are involved in safety decision-making processes.					
43	Hr regularly updates safety protocols based on data analytics and incident trends.					
44	The organization takes steps to manage workload and prevent burnout.					
45	Employees receive financial or non-financial rewards for adhering to safety protocols.					
46	Flexible work schedules are available to ensure employees get adequate rest.					
47	Hr provides vaccination programs and disease prevention initiatives.					
48	Safety performance is considered in employee appraisals.					
49	The organization promotes a psychologically safe and supportive work environment.					
50	The organization has sufficient fire warning and evacuation systems.					
51	The organization has established procedures for the proper disposal of biomedical waste and effluents.					
52	Employees have been regularly reminded by managers to practice safe work habits.					
53	Hr ensures continuous professional development programs focused on emerging occupational health risks					
54	The organization maintains health and safety protocols in its strategic planning.					
55	Incident reporting and hazard identification are managed through digital systems.					
56	Management takes necessary actions to prevent workplace hazards.					
57	Hr provides safety training regularly for all healthcare workers.					
58	The organization ensures adequate staffing levels to prevent fatigue and overwork.					
59	Hr policies ensure proper shift rotation to minimize employee burnout.					
60	There are enough trained personnel available for emergency response.					
61	Safe hiring practices, including background checks, are conducted for high-risk roles.					
62	Employees have received information about prevention upon joining the organization.					
63	The organization emphasizes proper use of ppe, with regular training on emergency response.					

64	The organization maintains safety documents that are accessible to all employees.					
65	Management resolves safety concerns raised by workers.					
66	The organization ensures that safety considerations are integrated into all hr practices.					
67	Supervisors ensure compliance with safety guidelines regarding chemicals and hazardous substances.					
68	Ppe is provided at work as required to safeguard health and safety.					
69	The organization's leadership demonstrates a strong commitment to worker safety.					

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