Original Article

Psychometric evaluation of the Persian version of the stressor scale for emergency nurses

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ARTICLE INFO

ABSTRACT

Background & Aim: Emergency nurses face unique stressors that increase their occupational stress. Most existing tools measure general stress and overlook emergency-specific factors. This study aimed to assess the psychometric properties of the Persian version of the Stressor Scale for Emergency Nurses.

Methods & Materials: This is a cross-sectional study that used the forward-backward method to translate the tool from English to Persian. Face and content validity were assessed by five emergency nurses and five nursing faculty members, respectively. Construct, known-group, and convergent validity were tested in 198 emergency nurses from Saqqez and Sanandaj hospitals (2024). Test-retest reliability was evaluated in 21 nurses over two weeks. Internal consistency was measured using Cronbach's alpha and McDonald's omega. Data were analyzed using Jamovi 2.4.14.

Results: Face and content validity were satisfactory. Exploratory factor analysis identified four factors—conflicts, life and death situations, patients' families' actions and reactions, and technical/formal supports, which explained 60.64% of total variance. Convergent validity showed a correlation of 0.554 between job stress scores based on the Stressor Scale for Emergency Nurses and the Brief Nursing Stress Scale. Known group validity revealed that occupational stress scores were higher in women than men, and there was a significant negative correlation between occupational stress and work experience in the emergency department. Cronbach's alpha and McDonald's omega coefficients were 0.953 and 0.954, respectively; the intraclass correlation coefficient was 0.943.

Conclusion: The Persian version of the stressor scale shows strong psychometric properties and is reliable for assessing occupational stress in emergency nurses.

Introduction

Occupational stress among nurses is a global issue, with many experiencing significant work-related stress (1). This stress varies by environment; for instance, nurses in emergency departments face unique challenges and report higher stress levels than their counterparts in other departments (2). Unannounced patient visits at any hour, sudden patient deaths, inappropriate behavior from patients and relatives, overcrowding, misunderstandings about the triage system, staff shortages, lack of medical equipment, unavailability of doctors, and conflicts with colleagues are significant stressors experienced by nurses in the emergency department (2,3).

Occupational stress can have adverse physical and psychological effects on nurses and the organizations for which they work (4, 5). Various studies have shown that occupational stress is related to physical diseases, mental health decline, depression, and post-traumatic stress disorder (6), and it leads to unfavorable organizational consequences such as employee turnover, intentions to leave their jobs, and absenteeism from the workplace (4). Rugless and Taylor's study found that emergency nurses have

higher absenteeism and sick leave rates than general nurses, potentially leading to a shortage of emergency personnel (7). Stress sources in the emergency department can fluctuate as work organization improves or deteriorates (8). Empirical evidence suggests that occupational stress can be reduced by first identifying and managing the stressors in healthcare settings. Accurately measuring occupational stress in nurses is essential for this process (1).

Although there are various tools available to measure occupational stress in nurses, the two most commonly used instruments in Iran are the Nursing Stress Scale (NSS) and Osipow's Occupational Stress Inventory (9, 10). The NSS has two versions with 57 and 34 questions, and the OSIPOW has 60 questions. The large number of questions may reduce the response rate among nurses. Most existing tools for measuring occupational stress are general, highlighting the need for a valid and reliable scale specifically for emergency nurses. Such a scale is crucial for organizations aiming to improve working conditions in emergency departments and reduce employee turnover.

Currently, the Stressor Scale for Emergency Nurses (SSEN) is the only scale designed specifically to measure occupational stress in emergency nurses (11). Unlike general occupational stress measurement tools, the SSEN is tailored to the unique stressors encountered in emergency nursing. Originally developed in Thailand, the scale was first available in English and has since been translated into Chinese and Turkish, with its psychometric properties evaluated in these languages. However, no psychometric evaluation of this scale has been conducted in Iran. Given that most available tools assess occupational stress in nurses broadly rather than addressing the distinct challenges faced by emergency nurses, they may not accurately capture stress levels in this high-pressure field. Therefore, psychometric evaluation of the SSEN is essential to establish a valid and reliable Persian version, as no suitable tool currently exists for measuring occupational stress in Iranian emergency nurses.

Methods

Study design and setting

This cross-sectional, multimodal, and methodological study aimed to evaluate the psychometric properties of the Persian version of the SSEN (P-SSEN) for emergency nurses in Saghez and Sanandaj hospitals, located in Kurdistan province, western Iran. Sanandaj has three educational hospitals of Tohid, Be'sat, and Kawsar, while Saqqez has two educational hospitals of Imam Khomeini and Shafa. Sampling was conducted in the emergency departments of these five hospitals.

Participants

To estimate the sample size for EFA, two approaches were considered: the smallest total sample size and the sample-to-variable ratio. In the first approach, a sample size of up to 100 is considered poor, 100 to 200 is moderate, and 200 to 300 is good. In the second approach, 5 to 10 participants are required per item. (12, 13). Given the limited access to emergency nurses in these two cities, the selected sample size was appropriate based on these two approaches. It ensured a sufficient number of participants while adhering to established guidelines for exploratory factor analysis (EFA). Given the limited access to emergency nurses in these two cities, the selected sample size was appropriate based on these two approaches. It ensured a sufficient number of participants while adhering to established guidelines for EFA. Considering these constraints, we determined a sample size of 220 and distributed the corresponding number of questionnaires. These participants were selected through convenience sampling. Emergency nurses with at least one year of work experience in the emergency department were included in the study. Incomplete questionnaires were excluded from the analysis.

Measurements

Data were collected using a socio-demographic information form, the SSEN, and the Brief Nursing Stress Scale (BNSS).

Socio-demographic form

The demographic form captured details such as age, gender, marital status, educational degree, and work experience.

Stressor Scale for Emergency Nurses (SSEN)

The SSEN, developed by Yuwanich et al. (2018), measures occupational stress in emergency nurses across four dimensions: life and death situations (6 items), patients' families' actions and reactions (8 items), technical and formal supports (5 items), and conflict (6 items). The factor loadings of the items ranged from 0.65 to 0.92. It consists of 25 items rated on a 6-point Likert scale, ranging from 0 (not at all) to 5 (very high degree), yielding a total score between 0 and 125. A higher score indicates greater occupational stress for emergency nurses. The Cronbach's alpha for each factor ranged from 0.89 to 0.93, and the intraclass correlation coefficient was 0.89, demonstrating strong internal consistency and stability (11).

Brief Nursing Stress Scale (BNSS)

The BNSS, developed and psychometrically evaluated by Sansó et al. (2021), comprises six items adapted from the NSS addressing stressors related to death and dying, conflicts with doctors and nurses, inadequate support, high workload, and treatment uncertainty. Responses were rated on a 4-point Likert scale from 1 (never) to 4 (always), resulting in a final score ranging from 6 to 24, with higher scores indicating increased occupational stress. (14). The factor loadings ranged from 0.467 to 0.724, with item 4 (conflict) having the highest and item 1 (death and dying) the lowest. The EFA extracted one factor that explained 37.84% of the total variance, while the confirmatory factor analysis (CFA) indicated that all fit indices were appropriate

Translation process

To ensure equivalence between the original language and the target language, a forward-backward translation approach was employed. Initially, two independent translators translated the questionnaire into Persian. The research team then compared the two versions to identify ambiguities and discrepancies, and a final version was compiled. In the subsequent phase, two new translators translated the Persian version back into English. After each translation phase, the versions produced by the two translators were compared to ensure consistency, and the final English version was developed after resolving any discrepancies (15).

Face and content validity

To assess face validity, the final Persian version was read aloud by five emergency nurses who identified any ambiguities or awkward phrases. For content validity, the translated version was evaluated by five nursing experts for scoring instructions, item content, and response format regarding conceptual clarity. These experts were selected purposefully (15).

Construct validity

Analysis was conducted using Jamovi software version 2.4.14. Prior to the EFA, item-to-total and item-to-item correlations were evaluated (16). Additionally, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test were utilized to determine sample adequacy and suitability. KMO values exceeding 0.9 were considered excellent indicators of validity (17). To evaluate construct validity, EFA utilized the maximum likelihood method with Oblimin rotation, which offers more generalizable and reproducible results (18). Latent factors were identified through parallel analysis, and items with a factor loading below 0.4 were excluded. This study utilized Horn's parallel analysis and exploratory graph analysis methods to determine the number of extracted factors (19). The analysis determined the factor structure by calculating eigenvalues, which represent the variance in each item accounted for by the factor. The percentage of total variance explained by each factor was calculated by dividing the eigenvalue by the total number of items (20). Eigenvalues greater than 1, communalities greater than 0.2, and

factor loadings greater than 0.3 were considered to determine the factorability of the data (21). The overall mean score of the SSEN was compared across demographic variables to assess known-groups validity, ensuring that the scale could distinguish between groups expected to experience different levels of occupational stress. Additionally, to evaluate convergent validity, the correlation between the scores of the SSEN and BNSS was computed. The BNSS is a brief six-item questionnaire designed to measure nurses' occupational stress. Compared to the SSEN, it is a more general tool for assessing job stress among nurses.

Reliability

Reliability was assessed through internal consistency using Cronbach's alpha and McDonald's omega coefficients (22). The test-retest sample consisted of 21 emergency nurses, and test-retest reliability was evaluated using the intraclass correlation coefficient (ICC) with a two-way mixed-effects model and absolute agreement, along with its 95% confidence intervals (23).

Ethical consideration

This research is part of a larger study approved by the university's ethics committee, focusing on the evaluation and reporting of BNSS's psychometric properties (ID: IR.MUK.REC.1403.065). We confirm that all study methods were performed in accordance with the relevant guidelines and regulations. All the individuals approached during recruitment were given verbal and written explanations. They were given an information document detailing the study's objectives, procedures, and data confidentiality assurance. All study participants gave their informed consent to the study. As part of this study, the Persian version of the SSEN was used to assess the convergent validity of BNSS. The psychometric properties of the SSEN, evaluated in this process, represent a secondary finding of the main study and are reported in this section.

Results

Of all the distributed questionnaires, 198 that were fully completed were included in the analysis (response rate: 90%). The average age of the participants was 31.38 years in age (SD=5.76). The majority were male (54.5%), single (52%), and held a bachelor's degree (88.9%). Participants had an average of 7.05 years of experience as nurses and 4.21 years as emergency nurses.

Face and content validity

The simplicity and brevity of the items resulted in no change to their face or content validity.

Construct validity

The mean score for the Persian version of the SSEN was 3.06 (SD = 0.982), with a range of 2.22 to 3.75, indicating that higher scores reflect greater stress. The corrected item-to-total correlations varied from 0.544 (item 5) to 0.752 (item 20) (Table 1).

Table 1. Items and Item Statistics for the Persian Version of the SSEN (N = 198)

Items: To what extent is this stressful for me:	Mean (SD)	Item correlation with	
		Total scale score	Subscale score
Subscale: Conflicts			
21. When a nurse colleague in the emergency department criticizes or blames me?	2.30 (1.59)	0.746	0.885
24. When I have a conflict with the physician responsible for the patient?	2.22 (1.43)	0.693	0.831
20. When a physician criticizes or blames me?	2.48 (1.55)	0.755	0.871
25. When I feel uncomfortable working with the attending physician?	2.30 (1.38)	0.690	0.836
22. When a supervisor or head nurse criticizes or blames me?	2.73 (1.51)	0.697	0.806
23. When I feel uncomfortable working with a colleague in the emergency department?	2.43 (1.53)	0.647	0.783
14. To receive complaints about my performance from a patient or their family members?	2.51 (1.50)	0.728	0.768
18. When is there no support from the supervisor or head nurse in the emergency department?	3.10 (1.45)	0.675	0.737
Subscale: Life and death situation			
1. To perform cardiopulmonary resuscitation (CPR) on a patient experiencing cardiac arrest?	3.20 (1.39)	0.554	0.844
2. To face death and care for a dying patient?	3.19 (1.45)	0.594	0.853
4. To provide nursing care to disaster victims?	3.35 (1.25)	0.594	0.839

Items: To what extent is this stressful for me:	Mean (SD)	Item correlation with	
		Total scale score	**Subscale score**
3. To deliver emergency nursing care to a critically ill or severely injured patient?	3.32 (1.32)	0.652	0.852
5. To care for multiple patients involved in an accident?	3.15 (1.39)	0.549	0.787
6. To provide emergency care to a patient who has attempted suicide?	3.04 (1.39)	0.589	0.753
Subscale: Patients' families' actions and reactions			
10. To experience physical assault from a patient or their family member?	3.74 (1.33)	0.695	0.883
9. To see colleagues being physically attacked by patients or their family members	3.71 (1.29)	0.706	0.886
8. To see colleagues being verbally attacked by patients or their family members?	3.50 (1.37)	0.725	0.901
7. To experience verbal assault from a patient or their relative?	3.75 (1.29)	0.681	0.870
11. To handle high-performance demands or expectations from a patient or their family members?	3.42 (1.40)	0.669	0.793
Subscales: Technical and formal supports			
17. When is essential medical equipment unavailable for patient treatment?	3.19 (1.37)	0.543	0.808
15. When medical equipment is malfunctioning and unusable?	3.23 (1.39)	0.668	0.885
16. When is there no clear care policy for treating a patient?	2.88 (1.31)	0.700	0.836
19. When is there no support from the organization manager or director?	3.42 (1.48)	0.642	0.792
13. When a patient and/or relative lacks understanding of the triage process at the ED?	3.19 (1.49)	0.701	0.772

To verify the construct's validity, EFA was conducted using the maximum likelihood method with Oblimin rotation. The KMO index was 0.928, and Bartlett's test was significant at the 0.001 level. The EFA identified four factors-conflict, life and death conditions, patients' families' actions and reactions, and technical and formal support-that together accounted for 60.64% of the total variance. Despite the rearrangement of items in the factors, the subscale names were retained from the original version to preserve their interpretability and meaning. This instrument reflects the intended structures by its designers, ensuring that, even with changes in factor structure, the subscales remain aligned with the original concept of occupational stress in nurses. In the Persian version, item #12 (Photo and/or video recording posted in a negative way on social media) was not placed in any factor (Table 2). The correlation between these factors varied between 0.47 and 0.72 (Figure 1).

Table 2. Factor Loadings for Items Loaded on Four Factors with Oblimin Rotated Factor Matrix in the Persian Version of the SSEN (N = 198)

Factor	Item	h^2	Factor loading	% Variance	Internal Consistency
Conflicts	21	0.208	0.879	20.8	α=0.927 Ω= 0928
	24	0.307	0.822		
	20	0.236	0.821		
	25	0.340	0.796		
	22	0.395	0.669		
	23	0.443	0.609		
	14	0.422	0.521		
	18	0.454	0.424		
Life and death situation	1	0.279	0.894	15.8	α=0.903 Ω= 0.905
	2	0.294	0.832		
	4	0.353	0.796		
	3	0.306	0.778		
	5	0.486	0.649		
	6	0.539	0.533		
Patients' families' actions and reactions	10	0.160	0.896	14.7	α= 0.916 Ω= 0.919
	9	0.164	0.892		
	8	0.277	0.723		
	7	0.362	0.668		
	11	0.541	0.441		
Technical and formal support	17	0.381	0.792	13.3	α= 0.875 Ω= 0.879
	15	0.248	0.790		
	16	0.358	0.587		
	19	0.415	0.567		
	13	0.460	0.423		

h^2: communality

Table 3 compares the Persian and English versions of SSEN items across four factors. The factor names align with the English version, as the item grouping in the Persian version closely resembles that of the English version.

Table 3. Comparison between the English and Persian versions of the SSEN items loaded on several factors

Subscale	English version		Persian version	
	Number of items	Item loaded	Item loaded	Number of items
Conflicts	6	**20, 21, 22, 23, 24, 25**	**21, 24, 20, 25, 22, 23,** 14, 18	8
Life and death situation	6	**1, 2, 3, 4, 5, 6**	**1, 2, 4, 3, 5, 6**	6
Patients' families' actions and reactions	8	**7, 8, 9, 10, 11,** 12, 13, 14	**10, 9, 8, 7, 11**	5
Technical and formal support	5	**15, 16, 17,** 18, 19	**17, 15, 16, 19,** 13	5

Note. Items in bold were matched in the subscales between the English and Persian versions of the SSEN.

The mean score correlation of BNSS and SSNT was 0.554 (r = 0.554, p <0.001), confirming convergent validity. The results indicated a significant negative correlation between the mean score of SSNE and experience in the emergency department (r = -0.149, p = 0.038). Additionally, female nurses reported significantly higher occupational stress than their male counterparts (80.38 ± 22.24 vs. 67.51±23.43, p <0.001).
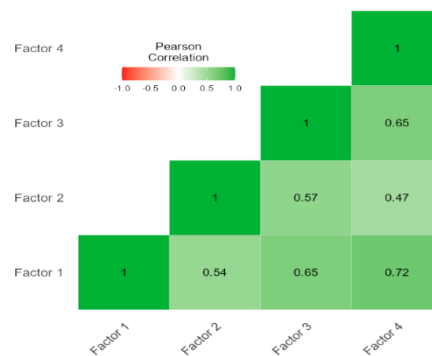

Figure 1. Correlation heatmap of extracted factors

Reliability

Test-retest reliability

To assess the intra-class correlation coefficient, the final Persian version of the SSEN was piloted with 21 emergency nurses. The overall ICC was 0.943 (95% CI: 0.899-0.97) at a two-week interval. The test-retest reliabilities for the four subscales were as follows: 0.948 (95% CI: 0.909-0.975) for conflict factors, 0.928 (95% CI: 0.873-0.966) for life and death situations, 0.929 (95% CI: 0.871-0.967) for patient and family interactions, and 0.836 (95% CI: 0.704-0.925) for official and technical support (Table 1).

Internal consistency reliability

The internal consistency of the Persian version, measured by Cronbach's alpha and McDonald's omega coefficients, was 0.953 and 0.954, respectively.

Discussion

This study evaluated the psychometric properties of the Persian version of the SSEN, confirming its factorial structure and conceptual integrity. For the content and face validity assessment, no meaningful changes were made to any of the items due to their simplicity and comprehensibility. This ensured that the core concepts were accurately retained in the Persian version and remained consistent with the original version's meaning. Exploratory Factor Analysis (EFA) identified four factors, consistent with the original version, explaining 60.64% of the total variance. Although this proportion is slightly lower than that reported for the Turkish version (69.19%), it still falls within an acceptable range, indicating that the Persian version effectively captures key aspects of occupational stress in emergency nurses (24). Furthermore, 20 out of the 25 items in the Persian version

aligned with the factors of the original tool, indicating strong conceptual equivalence. While minor variations were observed in the factor order, the subscale names remained unchanged, as the items retained their original conceptual meanings. This suggests that the translation process was successful in preserving the integrity of the original constructs. Such consistency highlights the cross-cultural applicability of the SSEN, reinforcing its validity as a tool for assessing stress among Persian-speaking emergency nurses. However, future studies should further explore these factor structures in diverse nursing populations to ensure their stability and generalizability.

The factor of "conflict" in the Persian version of the SSEN originally included items 20 to 25, as in the original tool. However, two additional items—item 14, which asks, "To what extent is this stressful for me to receive complaints about my performance from a patient or their family members?" and item 18, "To what extent is this stressful for me when there is no support from the supervisor or head nurse in the emergency department?"—were also incorporated into the conflict factor. In the original version, item 14 was associated with the factor concerning patients' families' actions and reactions, while item 18 was linked to technical and formal support. Upon analyzing the correlations, it was found that item 14 had a higher correlation with the conflict factor (0.768) than with the patients' families' actions and reactions (0.580), and item 18 showed a higher correlation with the conflict factor (0.737) than with the technical and formal support factor (0.674). This suggests that these items are more closely aligned with the conflict factor.

Interestingly, the conflict factor in this study had the lowest average scores compared to other stressors, suggesting that Iranian nurses perceive conflict as less significant in their overall occupational stress. While this may seem counterintuitive, as conflict is typically a significant contributor to stress in nursing practice, it is possible that other factors, such as workload and emotional demands, are seen as more pressing in this specific context. Despite this lower perceived significance, conflict has

consistently been shown to contribute to occupational stress in nurses. Both the Nursing Job Stressor Scale and the NSS include subscales that focus on conflict between nurses and physicians, aligning with the findings of this study (9, 25). Nurses often engage in close interdisciplinary collaboration with healthcare professionals, especially doctors and specialists. While this teamwork is crucial for effective patient care, it can occasionally lead to conflicts due to differing professional perspectives, objectives, and expectations (26). Moreover, conflicts in nursing practice can arise from the competing demands of patient care and time constraints, which often prevent nurses from addressing all the concerns of patients and their families (27). In the context of this study, conflict also aligns with broader themes found in existing tools, such as the Nurses' Occupational Stressor Scale, which identifies work-family conflict as a significant stressor. This dimension specifically focuses on how work pressures, including shift work and long hours, can interfere with nurses' family responsibilities, thereby compounding their overall stress levels (28).

The "life and death situation" factor, like the original version, consists of six items (items 1 to 6). Unlike other occupational stress instruments, these items specifically address high-stress scenarios such as caring for suicidal patients and victims of accidents or disasters, which enhances the instrument's sensitivity in measuring stress in emergency settings (9). This focus on critical situations allows the tool to effectively capture stressors unique to high-pressure environments, increasing its relevance for emergency nursing practice (29). Additionally, the NSS includes a dimension—death and dying—that corresponds to this factor (9).

The original factor of patients' families' actions and reactions consisted of eight items (items 7 to 14), but the Persian version excluded items 12, 13, and 14. Item 12, which pertains to photo and/or video recordings posted negatively on social media, was not assigned to any factor in the Persian version, as it is considered a crime in Iran under the country's strict privacy laws and cultural norms.

In the Persian version, item 13, which asks, 'To what extent is this stressful for me when patients and/or relatives lack understanding of the triage process at the ED?' was categorized under technical and formal support, a decision that aligns with the emphasis on communication issues and the need for adequate explanation of the triage process in the emergency department. Item 14 was moved to the conflict factor due to its closer alignment with issues of interpersonal conflict within the work environment. The correlation between item 13 and the technical and formal support factor (0.772) was stronger than with the factor of patients' families' actions and reactions (0.582), reflecting the crucial role that proper communication and formal procedures play in mitigating stress related to patients' and their families' misunderstanding. This dimension also highlights the violence that patients and their families may inflict on nurses, a significant issue in nursing globally and particularly in Iran. A meta-analysis revealed that 74% of Iranian nurses experienced verbal violence, while 28% faced physical violence (30), underscoring the urgent need for more support systems and training for nurses to handle such stressful interactions effectively.

Workplace violence is one of the factors of Nurses' Occupational Stressor Scale, which refers to physical, mental and sexual violence and bullying against nurses (28). Items related to violence against nurses are missing from older, yet still valid, occupational stress instruments (9, 10). Violence has recently emerged as a stressor in the nursing profession. The factor of technical and formal supports in the original version of the SSEN contained five items (15 to 19). In the Persian version, item 18 was moved to the conflict factor, while item 13 was added to the factor of technical and formal support. In the original version, item 13 was related to the factor of patients' and families' actions and reactions. However, in the Persian version, the correlation of item 13 with the conflict factor was stronger than its correlation with the factor of patients' families' actions and reactions, indicating its appropriate categorization in this factor. A lack of staff support was one dimension of NSS, aligning

with this factor (9). Other instruments have subscales named insufficient support from coworkers or caregivers and lack of support, which, similar to the present instrument, indicate a lack of support (9, 28).

In known group validity, female nurses reported higher mean occupational stress scores than male nurses, aligning with previous studies. The results of this study aligned with those of previous research (32). Our study found that nurses with more experience in the emergency department had lower occupational stress scores. This finding is due to their high skill and competence, mental resilience, and greater familiarity with hospital policies and environments.

Limitation

This study had some limitations. First, due to the limited number of emergency nurses in the studied hospitals, conducting a confirmatory factor analysis (CFA) with an independent sample was not feasible. Future studies should validate the factor structure using larger and more diverse samples from multiple healthcare centers. Second, the psychometric evaluation was conducted only in Kurdistan Province, which may limit the generalizability of findings to the broader Iranian nursing population. Differences in organizational structures, workloads, and cultural factors across regions could influence how emergency nurses experience occupational stress. Future research should validate the Persian version of the SSEN in a more diverse sample across different provinces and healthcare settings. Lastly, the original SSEN had only been translated into Turkish and Chinese, with no other validated versions available for comparison. This made it difficult to assess the consistency of findings across different populations. Future studies should focus on translating and validating this tool in various languages and cultural contexts to enhance its global applicability.

Conclusion

The Persian version of the SSEN demonstrated acceptable internal consistency, indicating strong correlations among its items.

Additionally, the test-retest reliability of the scale and its dimensions was satisfactory, confirming its stability over time. Overall, the Persian version exhibited acceptable validity and reliability, making it a suitable instrument for future research. Given its specificity in measuring occupational stress among emergency nurses, it serves as a specialized tool designed to capture the unique stressors encountered in emergency settings. It can be used alongside other tools to provide a more precise assessment of this concept.

Author contributions

All authors conceptualized and designed the study. NPM coordinated the sampling in hospitals. RGG and FD drafted the manuscript and contributed to its editing. HSN conducted the data analysis, drafted the manuscript, and edited the final version. All authors read and approved the final manuscript.

Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of interest

The authors declare no conflict of interest.

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