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Indirect exposure to healthcare violence through social media and its impact on healthcare workers' anxiety: a cross-sectional study

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Abstract

Aim This cross-sectional study aimed to assess the relationship between indirect exposure to healthcare violence through social media and anxiety levels among physicians and nurses in Turkey.

Methods Data were collected between September and December 2024 from 301 healthcare professionals (61 physicians, 240 nurses) employed in three private hospitals. The Healthcare Violence Anxiety Scale–Social Media (HVAS-SM), developed and validated within this study, was used. Construct validity was evaluated using exploratory factor analysis, and internal consistency was assessed with Cronbach's α. Group differences and associations were analyzed using t-tests, ANOVA/Kruskal–Wallis tests, and correlation analyses.

Results The HVAS-SM demonstrated strong psychometric properties (α = 0.928) with a five-factor structure explaining 71.8% of variance. A total of 79.1% of participants reported experiencing anxiety when exposed to healthcare violence news on social media. Anxiety was significantly higher among nurses, single participants, and those with prior exposure to violence. Age, work experience, and job satisfaction were negatively correlated with anxiety.

Conclusion Indirect exposure to healthcare violence through social media is a measurable psychosocial risk. Institutional strategies that focus on building resilience and improving media literacy are therefore necessary.

Keywords Healthcare violence, Social media, Anxiety, Indirect trauma, Occupational health, Physicians, Nurses, Türkiye

1 Introduction

Violence against healthcare professionals is a persistent and complex public health challenge. Global evidence indicates that verbal and physical assaults ar disproportionately common in high-pressure environments, such as emergency departments and primary care units [1]. In Turkey, numerous studies have highlighted the widespread prevalence

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of workplace violence against healthcare professionals, particularly in emergency and clinical settings [2–5]. These findings emphasise that violence is a systemic issue within the healthcare system. However, the potential harms of indirect exposure have received far less scholarly attention.

Media coverage also plays a significant role in shaping public perceptions of violence in healthcare. Social media platforms such as Twitter, Facebook, and Instagram facilitate the rapid dissemination of violent incidents and amplify narratives of legal inadequacy, institutional inaction, and societal indifference [6]. Repeated exposure to such content can heighten the perceived risk of violence and provoke strong emotional responses. Even without direct victimization, this can contribute to sustained anxiety among healthcare workers. This "digital proximity" to violence blurs the line between first-hand trauma and vicarious experience, creating a novel form of occupational hazard. Previous studies have shown that negative portrayals in the media can exacerbate tensions between patients and healthcare staff [7, 8].

While Existing research has primarily examined direct workplace violence [9–11], leaving a critical gap remains in our understanding of the psychological effects of indirect exposure via social media. Existing studies often treat media-mediated exposure as a secondary variable. They rarely differentiate between traditional mass media and interactive, algorithm-driven platforms. Social media differs substantially from conventional media in its capacity to personalise, intensify, and repeatedly expose users to violent content.

Another key limitation of the current evidence base is its geographical and cultural narrow focus. Most studies originate from high-income Western countries, whose healthcare systems, media landscapes, and professional norms differ markedly from those in middle-income countries such as Turkey. Cultural attitudes towards violence, patterns of social media usage and occupational hierarchies may influence the psychological impact of indirect exposure, thereby limiting the generalisability of previous findings.

The role of demographic and occupational factors in media-related anxiety is not well understood. Professional role, marital status, and prior exposure to violence are factors that may shape individuals' psychological responses. Institutional variables, including communication training, organisational support systems, and reporting mechanisms, have also received limited attention in this context.

From a methodological standpoint, the absence of validated, context-specific measurement tools has further constrained research in this area. Existing scales for workplace violence or trauma rarely capture the distinctive features of exposure mediated by social media. This type of exposure differs from in-person events in terms of its frequency, emotional intensity, and perceived realism.

Taken together, these gaps highlight the urgent need for research that is both targeted and sensitivite to context, focusing on indirect exposure to healthcare violence via social media. Closing this gap is essential for developing effective institutional policies and bespoke mental health interventions. It will also help to inform ethical media strategies that protect the well-being of healthcare professionals. The primary objective of this study was therefore to examine the association between social media exposure to healthcare violence and anxiety levels among physicians and nurses in Turkey. A secondary

objective was to identify demographic and occupational factors that may influence this association.

Digital platforms are increasingly shaping the occupational experiences and perceptions of violence of healthcare professionals. To this end, the present study employed the context-specific Healthcare Violence Anxiety Scale–Social Media (HVAS-SM), which was developed to measure anxiety related to exposure to healthcare violence via social media. By doing so, the study makes an original contribution to the literature on occupational mental health.

2 Materials and methods

2.1 Study design and setting

This descriptive, cross-sectional study examined anxiety levels among physicians and nurses exposed to healthcare violence-related news on social media. The study was conducted between September 1 and December 31, 2024 in three private hospitals of the Lokman Hekim Health Group in Ankara, Turkey (Akay, Etlik, and Sincan Hospitals). These hospitals were selected because the researchers either work at these hospitals or at Lokman Hekim University. The research results are expected to inform the development of personnel policies addressing violence in healthcare facilities by Lokman Hekim Health Group managers. Furthermore, selecting these hospitals enabled the researchers to obtain administrative permissions and access study data quickly.

The study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines to ensure methodological transparency and the SAGER (Sex and Gender Equity in Research) guidelines to address gender considerations.

2.2 Participants and sampling

The target population comprised 498 physicians and nurses employed in these hospitals. The sample size has now been determined in line with methodological recommendations for exploratory factor analysis, which stipulate that there should be 5–10 participants per scale item. With 27 items, the minimum target was therefore 270 participants. The final sample size of 301 participants ensured sufficient statistical power. All physicians and nurses meeting the inclusion criteria at the three hospitals were invited to participate. A census approach was used rather than random sampling, and participation was entirely voluntary without incentives.

The inclusion criteria for physicians and nurses were: (a) active employment at the hospital, (b) at least one year of clinical experience, and (c) provision of informed consent. The exclusion criterion was a self-reported diagnosis of any psychiatric disorder, as this could create a confounding effect in the assessment of anxiety levels. No follow-up period was applicable, as the study employed a cross-sectional design.

2.3 Ethical approval and consent

Ethical approval was obtained from the Lokman Hekim University Scientific Research Ethics Committee (Approval No. 2024/174; 19 August 2024). Institutional permissions were granted by the hospital administrations. Participation was voluntary, and informed digital consent was obtained prior to data collection. No personally identifiable information was recorded. All procedures complied with the Declaration of Helsinki and relevant national research ethics regulations. All collected data were stored on

password-protected computers accessible only to the research team. Identifiers were not recorded, and anonymized datasets will be securely retained for five years according to institutional data protection policy.

2.4 Instruments

(a) Sociodemographic and occupational information form: A structured questionnaire was used to collect demographic (e.g., age, gender, marital status, education) and occupational (e.g., profession, department, years of experience, job satisfaction, communication training) data.

(b) Healthcare Violence Anxiety Scale in the Context of Social Media (HVAS-SM)

The HVAS-SM was developed to specifically assess anxiety related to exposure to healthcare violence content on social media. The HVAS-SM was originally developed and validated in Turkish within this study; therefore, no translation or back-translation was required. The development process followed recommended best practices for scale design and validation and proceeded in four stages:

1. *Item generation*: An initial pool of 42 items was generated based on a systematic literature review, thematic analysis of healthcare violence narratives on social media, and existing workplace violence scales. The review focused on constructs including perceived risk, emotional impact, behavioral avoidance, and coping strategies.
2. *Content validation:* The item pool was reviewed by an expert panel of five professionals (two psychiatric nurses, one psychiatrist, one healthcare management academic, and one clinical psychologist). Experts rated each item for relevance, clarity, and representativeness on a 4-point scale. The Content Validity Index (CVI) was calculated for each item, with a minimum acceptable CVI of 0.80. Items failing to meet this threshold were revised or removed, resulting in a refined pool of 32 items.
3. *Pilot testing:* The 32-item version was pilot-tested with a convenience sample of 50 healthcare professionals to assess comprehension, clarity, and response burden. Feedback led to minor wording adjustments and the removal of four items that were deemed redundant or ambiguous, producing a 28-item preliminary scale.
4. *Exploratory factor analysis and reliability testing:* Using the study's main sample ($n = 301$), an EFA with principal component extraction and varimax rotation identified five factors: Awareness, Impact, Cause, Effect, and Precaution. One reverse-coded item ("I think news reports of violence in healthcare are exaggerated") showed low item-total correlation (−0.115) and was removed, improving the overall Cronbach's α from 0.921 to 0.928. The final HVAS-SM contained 27 items, explaining 71.8% of the variance, with subscale reliabilities ranging from $\alpha = 0.844$ to $\alpha = 0.905$.

The HVAS-SM is scored on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with higher scores indicating greater anxiety related to social media exposure to healthcare violence. The scale is designed for use in both research and occupational health assessment settings, with potential applications in intervention evaluation and workplace risk assessment.

2.5 Data collection procedure

Data were collected via structured, face-to-face interviews conducted by trained researchers in private, designated spaces within the hospitals to ensure confidentiality

and minimize social desirability bias. Each session lasted approximately 15 min. All interviewers were trained in standardized survey administration, confidentiality assurance, an impartial communication. Regular audits and pilot testing ensured consistency across data collectors.

2.6 Statistical analysis

Data were analyzed using IBM SPSS Statistics v29 and AMOS v24. Descriptive statistics (means, standard deviations, frequencies, percentages) were computed. Scale reliability was assessed via Cronbach's α coefficients. Construct validity was evaluated with EFA using principal component extraction and varimax rotation. EFA was selected because the HVAS-SM was newly developed, and the factor structure had not been previously established. Sampling adequacy was determined by the Kaiser–Meyer–Olkin (KMO) measure, and Bartlett's test of sphericity was used to assess factorability. Normality was evaluated using skewness and kurtosis values (acceptable range ± 1.5). Between-group differences were assessed using independent samples t-tests or Mann–Whitney U tests (two groups) and one-way ANOVA or Kruskal–Wallis tests (multiple groups). Post hoc analyses employed Bonferroni correction. Pearson's and Spearman's correlation coefficients were calculated to assess associations between continuous variables. A significance threshold of $p < 0.05$ (two-tailed) was applied.

3 Results

3.1 Participant characteristics

A total of 301 healthcare professionals participated in the study, comprising 61 physicians (20.3%) and 240 nurses (79.7%). The mean age was 32.43 years (SD = 11.09). Of the participants, 76.7% ($n = 231$) were female and 48.2% ($n = 145$) were married. Among physicians, 59.0% were specialists, while 40.4% of nurses held a high school diploma. Nearly half of the participants (49.2%) worked in surgical sciences, and 45.2% had 1–5 years of healthcare experience. Overall, 44.9% ($n = 135$) reported being satisfied with their profession, and 66.1% ($n = 199$) had received communication training in the previous year (Table 1).

3.2 Scale validity and reliability

Exploratory factor analysis supported a five-factor structure of the HVAS-SM—Awareness, Impact, Cause, Effect, and Precaution—explaining 71.8% of the variance. The Kaiser–Meyer–Olkin measure was 0.895, and Bartlett's test of sphericity was significant ($\chi^2 = 4897.09$, $p < 0.001$). Cronbach's α values indicated high internal consistency for the total scale (α = 0.928) and for each subscale (α = 0.844–0.905). One item was removed due to low item-total correlation, which increased the overall reliability (Table 2).

3.3 Exposure to healthcare violence

More than half of the participants (57.2%, $n = 172$) reported encountering news about violence in healthcare most frequently on social media. Nearly half (46.8%, $n = 141$) had personally experienced violence, most commonly verbal abuse (56.9%, $n = 80$). Additionally, 64.1% ($n = 193$) had witnessed violence directed toward healthcare personnel.

Table 1 Sociodemographic and occupational characteristics of participants ($n = 301$)

Variable	Category	*n*	%
Age	32,43 ± 11,09		
Gender	Female	231	76.7
	Male	70	23.3
Marital status	Married	145	48.2
	Single	156	51.8
Profession	Physician	61	20.3
	Nurse	240	79.7
Title (Physicians)	Professor	6	9.8
	Associate professor	7	11.5
	Assistant professor	7	11.5
	Specialist	36	59.0
	Assistant	1	1.6
	Practicing	4	6.6
Education (Nurses)	High school	97	40.4
	Associate degree	77	32.1
	Bachelor's degree	61	25.4
	Postgraduate	5	2.1
Department	Surgical sciences	148	49.2
	Internal sciences	134	44.5
	Basic sciences	19	6.3
Work experience	1–5 years	136	45.2
	6–10 years	59	19.6
	11–15 years	34	11.3
	16–20 years	32	10.6
	> 20 years	40	13.3
Job satisfaction	Not at all satisfied	10	3.3
	Not satisfied	18	6.0
	Somewhat satisfied	89	29.6
	Satisfied	135	44.9
	Very satisfied	49	16.3
Communication training (last year)	Yes	199	66.1
	No	102	33.9

Percentages are based on valid responses

Table 2 Subscale scores and reliability coefficients of the healthcare violence anxiety scale in the context of social media (HVAS-SM) ($n = 301$

Subscale	Mean ± SD	Median	Skewness	Kurtosis	Cronbach's α
Awareness	4.05 ± 0.96	4.33	−1.604	2.18	0.905
Impact	3.19 ± 1.02	3.28	−0.157	−0.66	0.896
Cause	2.9 ± 1.05	3.0	0.034	−0.623	0.844
Effect	3.35 ± 1.15	3.5	−0.31	−0.885	0.875
Precaution	3.11 ± 1.2	3.0	−0.2	−0.894	0.897
Total HVAS-SM	3.39 ± 0.8	3.5	−0.911	1.162	0.928

HVAS-SM = Healthcare Violence Anxiety Scale in the Context of Social Media

3.4 Anxiety levels related to social media exposure

The mean total HVAS-SM score was 3.39 (SD = 0.80), indicating moderate-to-high anxiety. The highest-rated items were:

- "I think violence against healthcare workers is increasing" (M = 4.26, SD = 1.09),
- "I think violence against healthcare workers is a great injustice" (M = 4.19, SD = 1.19), and.

Table 3 Correlations between demographic variables, subscales, and total HVAS-SM scores

Variable	Awareness	Impact	Cause	Effect	Precaution	Total HVAS-SM
Age	−0.062	−0.187**	−0.098	−0.084	0.032	−0.09
Work experience	−0.066	−0.131*	−0.07	−0.091	−0.006	−0.08
Job satisfaction	−0.016	−0.280***	−0.08	−0.105	0.120*	−0.150**

Pearson's r coefficients are reported; p < 0.05 (*), p < 0.01 (**), p < 0.001 (***)

- "Violence in healthcare news makes me anxious" (M = 4.13, SD = 1.16).

3.5 Correlation analysis

Significant positive correlations were found between the total HVAS-SM score and all subscales ($p < 0.001$). Age, work experience, and job satisfaction were negatively correlated with the Impact subscale. Job satisfaction was positively correlated with the Precaution subscale (Table 3).

3.6 Group differences by demographic and professional characteristics

Following the analysis of the demographic and occupational characteristics of the study population,

- *Marital status:* Single participants scored significantly higher than married participants on both the total HVAS-SM (M = 3.52, SD = 0.82 vs. M = 3.21, SD = 0.76; $p < 0.05$) and the Impact subscale (M = 3.33, SD = 0.98 vs. M = 3.01, SD = 0.87; $p < 0.05$).
- *Profession:* Nurses scored higher than physicians on the Cause subscale (M = 3.12, SD = 0.97 vs. M = 2.71, SD = 0.88; $p < 0.05$). No other subscale differences reached statistical significance.
- *Exposure to violence:* Participants who had witnessed violence scored higher on both the Awareness subscale (M = 4.19, SD = 0.94 vs. M = 3.84, SD = 0.91; $p < 0.05$) and the Impact subscale (M = 3.32, SD = 1.02 vs. M = 3.00, SD = 0.95; $p < 0.05$).
- *Communication training:* Those who had received communication training in the past year scored significantly higher on the Precaution subscale compared to those who had not (M = 3.25, SD = 1.18 vs. M = 2.85, SD = 1.21; $p < 0.05$).
- *Age differences:* Participants who had witnessed violence were older on average (M = 33.47, SD = 11.21) than those who had not (M = 30.49, SD = 10.67; $p < 0.05$).
- *Other variables:* No significant group differences were observed for gender, work experience, or educational background.

4 Discussion

This study examined the relationship between social media exposure to healthcare violence on social media and anxiety levels among physicians and nurses in Turkey. The findings suggest that indirect exposure to such content on digital platforms is associated with elevated anxiety levels, even in the absence of direct victimisation. This is consistent with emerging evidence that experiences of violence mediated by the media may function as an occupational stressor with measurable psychological consequences [7, 12].

A key finding was that single healthcare professionals reported significantly higher anxiety levels than married participants on both the total HVAS-SM (M = 3.52 vs. 3.21, $p < 0.05$) and the Impact subscale (M = 3.33 vs. 3.01, $p < 0.05$). This finding lends support to buffering hypothesis proposed by Cohen and Wills [16], which emphasises the protective role of social and family support against stress. Similar findings have been

observed in other studies from Turkey and abroad, highlighting that marital status may moderate the psychological impact of workplace violence [17].

On the Cause subscale, nurses demonstrated higher anxiety scores than physicians (M = 3.12 vs. 2.71, $p < 0.05$). This aligns with international literature indicating that nurses are disproportionately affected by workplace violence [13, 14]. Reasons for this may include their close and continuous contact with patients, their lower hierarchical status, and their higher exposure to emotionally demanding work environments. These findings highlight the need for institutional interventions targeted at nurses, such as enhanced psychosocial support and resilience programmes.

Participants who had witnessed violence also scored higher on the Awareness (M = 4.19 vs. 3.84, $p < 0.05$) and Impact (M = 3.32 vs. 3.00, $p < 0.05$) subscales. These results resonate with the concept of vicarious trauma, which posits that indirect exposure to violence can generate psychological consequences similar to those experienced by direct victims [15]. This highlights the need for institutional support to be extended not only to victims, but also to staff who witness violence.

Healthcare professionals who had received communication training in the previous year reported significantly higher precaution scores (M = 3.25 vs. 2.85, $p < 0.05$). While this finding may reflect an increased sensitivity to potential risks, it also suggests that such training enhances awareness and preparedness. Previous studies have demonstrated that communication and de-escalation training can enhance healthcare staff's ability to recognise and manage threatening situations [18, 19]. However, future interventions might incorporate resilience-building modules to ensure that greater awareness does not lead to increased anxiety.

Finally, participants who had witnessed violence tended to be older on average than those who had not (M = 33.47 vs. 30.49, $p < 0.05$). This pattern may reflect cumulative exposure, given that healthcare workers with longer professional experience are more likely to have encountered violent incidents. Conversely, younger professionals may underreport incidents due to a lack of confidence or awareness. Further studies are needed to clarify how age and experience interact with reporting behaviours and anxiety outcomes.

These findings directly address the study's objective of the study, which was to identify the psychological impact of exposure to healthcare violence on social media. The results confirm that demographic and occupational factors significantly influence this association, thus validating the theoretical premise of the sutdy. Therefore, institutional policies should therefore consider both individual and systemic factors when designing preventive and supportive interventions.

5 Limitations and future research

This study has several limitations that should be acknowledged. First, its cross-sectional design does not allow causal inferences between social media exposure to healthcare violence and anxiety; the findings should therefore be interpreted as associations rather than causal effects. Second, the fact that the study was conducted in three private hospitals in a single city limit the generalizability of the results to broader healthcare populations. Although the study was conducted in three private hospitals in Ankara, the sample included both physicians and nurses from different departments, providing insight into multiple professional contexts. However, as social media usage habits, organisational

culture, and rates of exposure to violence in the workplace may vary across regions and healthcare systems, the results should be generalised with caution. Third, although the Healthcare Violence Anxiety Scale in the Context of Social Media (HVAS-SM) demonstrated strong psychometric properties, it has not yet been validated in other contexts, compared against established instruments, or applied internationally. Fourth, self-selection bias may have influenced the findings, as individuals more sensitive to the topic may have been more willing to participate.

Future research should apply longitudinal designs to test causal mechanisms, use stratified random sampling across public and private sectors, and integrate qualitative interviews to explore emotional processing of social media exposure. Developing and validating brief screening tools derived from the HVAS-SM could also support occupational health monitoring.

6 Conclusion

This study suggests that indirect exposure to healthcare violence through social media is associated with elevated anxiety among physicians and nurses in Turkey. Higher anxiety levels were observed particularly among nurses, younger and single professionals, and those with prior experiences of violence, indicating that demographic and occupational factors may shape these associations. Witnessing violence, even without direct victimization, was also linked to greater awareness and perceived impact, consistent with the concept of vicarious trauma.

The findings highlight the potential need for healthcare institutions to explore preventive measures, such as media literacy training, resilience-building programs, and psychological support mechanisms, to safeguard staff well-being. While these results cannot establish causality, they offer preliminary evidence that indirect media exposure should be considered as a possible psychosocial occupational hazard. Further research is warranted to validate these findings across diverse settings and to test intervention strategies aimed at mitigating anxiety related to social media–mediated violence.

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Author contributions
MK was the principal investigator and was responsible for the study concept, design, data collection, and overall project supervision. ZBS contributed to the research design, supported the data analysis process, and assisted in the interpretation of results. IS was responsible for drafting the manuscript, editing the text, and implementing revisions based on critical feedback. All authors read and approved the final version of the manuscript.

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

Declarations

Ethical approval and consent to participate
This study was conducted in accordance with the Declaration of Helsinki and received ethical approval form the Lokman Hekim University Scientific Research Ethics Committee (Approval No: 2024/174; 19 August 2024). All participants provided informed consent prior to participation in the research.

Consent for publication
Yes.

Competing interests
The authors declare no competing interests.

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