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Screens of suffering: how Gaza war news impacts students' minds and motivation

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Abstract

Background The ongoing war in Gaza has intensified media coverage of violence and human suffering, which may indirectly affect the psychological well-being and academic engagement of university students. This study investigates how tracking news of the Gaza assault impacts the mental health and academic motivation of Palestinian university students. Specifically, it examines whether depression and anxiety mediate the relationship between media exposure and motivation, identifies overall levels of these variables, and explores demographic influences.

Methods This sequential mixed-methods study involved Palestinian university students. The qualitative phase included semi-structured Zoom interviews with 15 students to explore their engagement with news about the Gaza assault. Thematic analysis identified key themes used to develop the Tracking Gaza Assault News Scale (TGANS). In the quantitative phase, a cross-sectional survey was administered to 624 students using stratified sampling.

Results Tracking Gaza assault news (TGANS) significantly predicted higher depression and anxiety levels, which in turn negatively affected academic motivation. Both depression ($\beta = -0.206$, $p < .05$) and anxiety ($\beta = -0.232$, $p < .05$) mediated the relationship between TGANS and motivation. TGANS also had a direct negative effect on motivation ($\beta = -0.172$, $p < .01$), with a significant total effect ($\beta = -0.422$, $p < .001$). Students reported moderate TGANS (M = 3.00), high depression (M = 3.84), low anxiety (M = 2.86), and high motivation (M = 4.08). Females reported higher depression and anxiety than males. Humanities students had higher TGANS, while science students showed greater motivation. Advanced academic years correlated with worse mental health and lower motivation. Students from camps and those bereaved by martyrdom reported higher TGANS, distress, and lower motivation. Watching news for over an hour daily was linked to elevated TGANS and anxiety.

Conclusion Media coverage of the Gaza war constitutes a secondary form of trauma for many Palestinian university students, contributing to deteriorating mental health and academic disengagement. These findings underscore the need for mental health support and resilience-based interventions in university settings during ongoing conflict.

Keywords Palestine, University students, Gaza war, Media exposure, Mental health, Academic motivation, Trauma, Resilience

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Background

In times of conflict, staying informed about unfolding events becomes a civic and moral responsibility, particularly for Palestinians who live under continuous threat. Following the outbreak of war in Gaza on October 7, 2023, Palestinians across the region have turned to news media to track developments, grieve losses, and advocate for justice. However, constant exposure to graphic and distressing news has profound psychological consequences, especially for young adults such as university students.

In times of conflict, staying informed about unfolding events becomes a civic and moral responsibility, particularly for Palestinians who live under continuous threat (Tatour, 2021 [1]). Following the outbreak of war in Gaza on October 7, 2023, Palestinians across the region have turned to news media to track developments, grieve losses, and advocate for justice (Al Jazeera, 2023 [2]; United Nations OCHA, 2024 [3]). A national survey found that over 85% of Palestinians relied on social and broadcast media for real-time updates during the war (PCBS, 2024 [4]). However, constant exposure to graphic and distressing news has been linked to heightened anxiety, sleep disturbances, and symptoms of secondary trauma among young adults, including university students (Thabet & Vostanis, 2020 [5]; APA, 2023 [6]).

Research consistently shows that watching traumatic events through media coverage can exacerbate preexisting psychological wounds, leading to heightened symptoms of anxiety, depression, and post-traumatic stress disorder (PTSD) [1–3]. In the context of Palestine, where communities already endure prolonged occupation and socio-political violence, repeated exposure to war news intensifies emotional distress and creates a vicious cycle of trauma [4, 5]. Studies conducted in conflict zones, including Palestine, Syria, and Yemen, demonstrate that media consumption during periods of violence is closely linked to deteriorating mental health outcomes [6, 7].

This mental health deterioration has direct consequences for academic achievement. University students are particularly vulnerable, as they must balance the cognitive demands of higher education with the emotional burden of living through war [8, 9]. Previous research on Palestinian and Syrian students has found that stress, anxiety, and depression impair concentration, motivation, and academic performance, leading to higher dropout rates and lower academic satisfaction [10, 11]. Nursing students, in particular, face compounded challenges, as their professional training exposes them to caregiving roles that further heighten emotional exhaustion [12].

While the psychological toll of war on students has been widely documented, several gaps remain. Few studies have specifically investigated how exposure to war news—rather than direct violence alone—shapes students' mental health and academic trajectories. Moreover, the role of resilience as a protective factor remains underexplored, especially among discipline-specific groups such as nursing students who carry both academic and caregiving burdens [13, 14].

A growing body of research has explored the profound psychological toll of war on students and healthcare workers in conflict zones. For instance, studies from Palestine and other war-affected regions such as Ukraine and Yemen have documented high levels of anxiety, depression, PTSD, and stress among university students and healthcare professionals during times of conflict [1–4, 9, 12]. Research focusing on Palestinian students specifically highlights the psychological vulnerability of this group, with war exacerbating existing stressors related to academic and clinical responsibilities [2, 4, 5, 13]. Additional studies emphasize the roles of resilience and social support as critical protective factors that help mitigate the psychological consequences of trauma in conflict-affected populations [8, 10]. However, these investigations primarily concentrate on the *direct* impact of war—such as exposure to violence or living under siege—while largely overlooking the *indirect* but potent influence of continuous media coverage and war-related news exposure.

To date, little is known about how repeated exposure to war-related news—rather than direct violence—impacts the mental health and academic motivation of students living in conflict zones. This study addresses that gap by exploring how following news of the Gaza assault affects Palestinian university students' psychological well-being and educational drive. Specifically, it investigates whether symptoms of depression and anxiety mediate the relationship between media exposure and academic motivation (Q1), examines the overall levels of depression, anxiety, news tracking, and motivation in this population (Q2), and assesses the influence of demographic factors on these variables (Q3). By highlighting mediated trauma as a key but underexamined consequence of prolonged conflict, the study provides vital insights for developing targeted interventions—such as trauma-informed counseling and media literacy programs—to support student resilience and academic success during ongoing crises.

Theoretical framework

The theoretical framework guiding this study is rooted in Cognitive Appraisal Theory [15], which asserts that individuals' emotional and behavioral reactions to external stimuli are fundamentally shaped by how they cognitively appraise those stimuli. This perspective is especially pertinent in contexts of indirect or mediated trauma, such as persistent exposure to war-related news. Within this model, individuals evaluate whether a given situation is

personally threatening (primary appraisal) and whether they have the resources to cope with it (secondary appraisal). In the present study, students' reported feelings of fear, helplessness, and identification with victims are understood as indicators of their appraisal processes—reflecting how they perceived the news about Gaza as either a direct threat to their own lives or as an uncontrollable situation beyond their coping capacity.

When applied to the context of prolonged media exposure to violence—such as news about the ongoing Gaza assault—this framework helps explain how students may interpret such exposure as a chronic psychological threat, especially when they identify with the victims or perceive a sense of helplessness. Repeated exposure to emotionally disturbing content has been shown to activate stress responses, even in the absence of direct physical danger. Several studies demonstrate that such vicarious or secondary trauma can result in heightened symptoms of anxiety, depression, and emotional exhaustion [16, 17]. Thus, the theory provides a lens for interpreting how cognitive evaluations (e.g., "this could happen to me" or "there is nothing I can do") translate into affective and motivational consequences.

These affective disruptions may impair students' cognitive functions—such as attention, working memory, and executive control—which are vital for sustained academic motivation and achievement [18]. The framework thus supports the idea that depression and anxiety may serve as mediators, translating the emotional burden of media exposure into reduced academic engagement and drive. In this context, media exposure functions as an environmental stressor, while the psychological consequences—manifested as depression and anxiety—constitute internal mediating mechanisms that directly influence educational outcomes. Prior research supports this chain of influence. For example, studies in conflict-affected regions have linked war-related media consumption with elevated psychological distress and compromised school performance [19]. Moreover, adolescents and young adults exposed to traumatic content via news and social media often report higher levels of hopelessness, fatigue, and decreased goal orientation, all of which correlate with declining academic motivation [20].

Research questions

The present study is guided by Cognitive Appraisal Theory, which posits that individuals' emotional and behavioral responses are shaped by how they evaluate external stimuli. In the context of persistent exposure to news about the Gaza assault, students' appraisals—such as perceiving the events as personally threatening or assessing their ability to cope—may influence their psychological states and academic behaviors. Based on this theoretical perspective, the study investigates the following research questions:

1. Do depression and anxiety mediate the impact of tracking Gaza assault news on academic motivation among Palestinian university students? This question explores the cognitive appraisal mechanism, examining whether emotional responses (depression and anxiety) act as mediators between perceived threat from news exposure and academic outcomes.
2. What are the levels of depression, anxiety, tracking Gaza assault news, and academic motivation among Palestinian university students? This question assesses the baseline psychological and behavioral responses to news exposure, providing descriptive evidence of the outcomes predicted by Cognitive Appraisal Theory.
3. Do demographic variables influence depression, anxiety, tracking Gaza assault news, and academic motivation among Palestinian university students? This question examines contextual factors that may shape students' appraisals and subsequent emotional and motivational responses, highlighting variability across subgroups.

Methods

Study design and overview

The authors utilized large language models (e.g., ChatGPT and DeepSeek) to assist with editing, language improvement, and translation of survey instruments and interview materials. This study employed a sequential mixed-method design, beginning with a qualitative phase to explore how Palestinian university students track news about the Gaza assault, followed by a quantitative phase to validate the findings and examine psychological and academic outcomes.

Qualitative methods

The qualitative phase involved semi-structured interviews with 15 Palestinian university students from An-Najah National University (ANNU) in Nablus and the Arab American University (AAUP) in Jenin, both located in the northern West Bank. Participants were recruited using a convenience sampling approach, ensuring diversity in academic disciplines, geographic location, and demographic characteristics. Interviews were conducted virtually via Zoom, allowing participants to share their experiences safely and conveniently. The aim of this phase was to explore students' engagement with news about the Gaza assault, including emotional, cognitive, and behavioral responses.

Quantitative methods

Following the qualitative phase, a cross-sectional survey was administered to evaluate levels of depression, anxiety, academic motivation, and engagement with Gaza assault news among Palestinian university students. A stratified sampling approach was used to ensure balanced representation across universities, genders, and faculties. The quantitative sample consisted of 624 students: 380 from ANNU and 244 from AAUP; 284 males and 340 females; 364 from natural sciences and 260 from humanities. Approximately half of the sample was used to conduct Exploratory Factor Analysis (EFA) to identify the factorial structure of the study scales, while the remaining 324 students completed the study scales for Structural Equation Modeling (SEM) to examine the mediating roles of depression and anxiety in the impact of tracking Gaza assault news on academic motivation.

Table 1 Participant characteristics in the qualitative study sample ($n = 15$)

Categorical Variable		Frequencies	Percentages
University	ANNU	9	60%
	AAUP	6	40%
	Total	15	100%
Gender	Male	7	46.7%
	Female	8	53.3%
	Total	15	100%
Faculty	Natural Sciences	8	53.3%
	Humanities	7	46.7%
	Total	15	100%
Academic Year	First Year	7	46.7%
	Second Year	5	33.3%
	Third Year	2	13.3%
	Fourth or Fifth Year	1	6.7%
	Total	15	100%
Place of Residence	1948 Territories	2	13.3%
	West Bank Cities	3	20.0%
	West Bank Villages	10	66.7%
	West Bank Camps	0	0%
	Total	15	100%
Daily Watching News	≥ One Hour	12	80%
	< One Hour	3	20%
	Total	15	100%
Do you have an imprisoned parent or sibling?	Yes	2	13.3%
	No	13	86.7%
	Total	15	100%
Do you have a martyred parent or sibling?	Yes	1	6.7%
	No	14	93.3%
	Total	15	100%

Participants

Qualitative phase

A convenience sample of 15 bachelor's degree students (9 from ANNU, 6 from AAUP) representing various disciplines (medicine, nursing, science, engineering, economics, Shariah, education, psychology, art, and social work) was recruited. Efforts were made to ensure geographic diversity, including participants from the West Bank and areas occupied in 1948. Participant characteristics are summarized in Table 1.

Quantitative phase

A stratified sampling approach ensured balanced representation across universities, genders, and faculties. The quantitative sample included 624 students: 380 from ANNU and 244 from AAUP; 284 males and 340 females; 364 from natural sciences and 260 from humanities. Approximately half the sample ($n = 300$) was used for Exploratory Factor Analysis (EFA) to identify the factorial structure, while the remaining 324 participants were used for Structural Equation Modeling (SEM) to test the mediating roles of depression and anxiety in the relationship between TGANS and academic motivation. The mean age across both phases was 20.4 years (± 1.9). The EFA and SEM samples were demographically comparable across all variables—university, gender, faculty, academic year, and place of residence—with no significant differences ($p > .05$) except for the proportion of participants who reported having an imprisoned parent or sibling (10.7% vs. 19.1%; $p < .01$).

Instrumentation

Tracking Gaza Assault News Scale (TGANS)

TGANS was developed using prior research and established instruments [21–24]. Three semi-structured interview questions guided its creation:

1. In recent times, how would you describe your tracking of the news about the Israeli assault on Gaza?
2. How has your tracking of the news about the Israeli assault affected your daily activities?
3. When you are unable to follow the news, how do you feel, and how do you cope with that?

Thematic analysis

The qualitative interview data were analyzed using thematic analysis following Braun and Clarke's (2006) six-step procedure. First, interviews were transcribed verbatim and read repeatedly to ensure familiarity. Second, initial codes were generated from participants' responses to capture significant features of news-tracking behaviors. Third, codes were grouped into potential themes reflecting patterns across narratives. Fourth,

themes were refined and reviewed against the entire data set for coherence. Fifth, each theme was clearly defined and named, including both explicit content and latent meanings, capturing cognitive, emotional, and behavioral aspects of news engagement. Sixth, a thematic map was created to illustrate relationships among major themes and sub-themes, which guided the development of TGANS items. For example, codes related to constant monitoring, fear of missing out, and compulsive news consumption informed TGANS dimensions.

In designing the TGANS questionnaire, principles of effective question formulation and clarity were followed to ensure comprehensibility and reliability [29]). TGANS initially included 14 items, reduced to 10 after validation, and measured on a five-point Likert scale (1 = never, 5 = always). The validated scale is provided in Appendix A.

Depression and anxiety

Derived from the DASS-21 [25, 27, 28], the study included only the depression and anxiety subscales. Reliability and factorial validity were confirmed in the current sample (see Appendix B).

Academic motivation

The Short Academic Motivation Scale (SAMS) [26]) was adapted to a five-point Likert scale and translated into Arabic using Pan & De La Puente's (2005) five-step process [30]. Reliability and validity were verified in the Palestinian context (Appendix C).

Data analysis

Quantitative data were analyzed using descriptive statistics, exploratory factor analysis (EFA), structural equation modeling (SEM), and other inferential methods. Frequencies, percentages, means, and standard deviations were calculated for all instruments.

EFA (principal component analysis with promax rotation) assessed the underlying factor structures of TGANS, DASS, and SAMS. Prior to testing the structural (mediation) model, a full measurement model was evaluated to confirm the factorial validity of these constructs. Factor loadings, average variance extracted (AVE), composite reliability, and model fit indices (CFI, TLI, RMSEA, SRMR) were examined to ensure that the latent constructs were adequately measured. This step effectively served as a confirmatory factor analysis (CFA), providing confidence in the construct validity of the instruments before examining the hypothesized mediation paths.

SEM was then used to examine the mediating effects of depression and anxiety on the relationship between TGANS and academic motivation. Maximum Likelihood estimation with bootstrapping (2,000 resamples) was employed to account for violations of normality and to generate bias-corrected confidence intervals for parameter estimates [31]. Preliminary diagnostics ensured appropriate estimation for SEM, including assessment of univariate and multivariate normality and detection of outliers using z-scores and Mahalanobis distances.

Additional analyses included t-tests and MANOVA to explore demographic differences across relevant variables. This integrated approach ensured both the construct validity of the instruments and the robustness of the structural model examining TGANS, depression, anxiety, and academic motivation.

Results

Instrument validity and reliability

TGANS

EFA was conducted on 300 students to examine the underlying structure of this scale. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.914, indicating excellent suitability of the data for factor analysis. Furthermore, Bartlett's Test of Sphericity was significant ($\chi^2(45) = 1122.18$, $p < .001$), supporting the appropriateness of conducting EFA. The analysis yielded a one-factor solution (see Table 2). Items with eigenvalues less than 1, factor loadings below 0.40, or significant cross-loadings were excluded from the final model. As a result, 10 items from the original 14 were retained. The extracted factor accounted for 48.35% of the total variance, supporting the scale's validity. Communalities for the retained items ranged from 0.34 to 0.57, indicating a moderate to good level of shared variance explained by the factor. Cronbach's alpha was 0.875, demonstrating high internal consistency.

Depression and anxiety scale

The EFA of this scale showed strong evidence of validity. The Kaiser-Meyer-Olkin (KMO) measure was 0.929, reflecting excellent sampling adequacy for factor analysis. Additionally, Bartlett's Test of Sphericity was significant ($\chi^2(91) = 1915.49$, $p < .001$), confirming the appropriateness of the data for factor analysis. The analysis yielded a two-factor solution (see Table 2), retaining all 14 original items. Together, these two factors explained 57.05% of the total variance, supporting the construct validity of the scale. The first factor accounted for 45.20% of the variance, while the second explained 11.85%. Item communalities ranged from 0.41 to 0.70, reflecting a moderate to strong level of shared variance. Both factors demonstrated very good internal consistency, as indicated by their respective Cronbach's alpha values.

- *Factor 1*: Anxiety, consisting of seven items ($\alpha = 0.889$).

Table 2 The factor loadings for each item in their respective scales; TGANS, DASS, and SAMS ($n_1 = 300$)

TGANS			
Items	**Components**		
	1 (TGANS)		
3	0.755		
8	0.740		
1	0.736		
2	0.718		
7	0.716		
4	0.710		
9	0.678		
5	0.676		
6	0.622		
10	0.583		
Eigenvalue	4.834		
Percent variance	48.35%		
DASS			
Items	**Components**		
	1 (Anxiety)		**2 (Depression)**
9	0.849		
8	0.815		
13	0.808		
11	0.796		
10	0.778		
14	0.691		
12	0.670		
4			0.851
2			0.822
6			0.750
1			0.734
5			0.605
7			0.605
3			0.478
Component	Anxiety		Depression
Eigenvalue	6.328		1.659
Percent variance	45.20%		11.85%
SAMS			
Items	**Components**		
	1 (IIM)	**2 (PDM)**	**3 (IM)**
13	− 0.834		
4	0.804		
6	0.804		
9	0.590		
5	0.471		
7		0.773	
12		0.771	
8		0.691	
10		0.567	
11		0.491	
1			0.936
3			0.829
2			0.626
Component	IIM	PDM	IM
Eigenvalue	4.795	1.873	1.00
Percent variance	36.89%	14.41%	7.71%

- *Factor 2*: Depression, consisting of seven items ($\alpha = 0.840$).

SAMS

A conceptual analysis of the factors revealed a structure broadly consistent with the SDT framework used in the original SAMS developed by [32]. The first factor, labeled Integrated/Identified Motivation (IIM), included items that emphasized the perceived importance of education for the future, self-affirmation, and one negatively worded item reflecting a lack of meaning. This factor aligns with the concept of identified regulation which an internalized form of extrinsic motivation. While SAMS typically includes such regulation under the broad category of extrinsic motivation, it does not explicitly differentiate between its subtypes (e.g., introjected vs. identified regulation), suggesting that the present findings provide a more nuanced interpretation of motivational types.

The second factor captured what may be described as Pressure-Driven Motivation (PDM), incorporating items related to guilt, fear of failure, the need to satisfy others (e.g., parents or teachers), and striving for good grades or future employment. This factor corresponds clearly to extrinsic motivation and represents a more emotionally charged form of external regulation. The emergence of this factor as distinct from other extrinsic motivations highlights the diversity of external influences and internal pressures that can shape academic behavior especially within specific sociocultural contexts like Palestinian context. The third factor reflected Intrinsic Motivation (IM), characterized by enjoyment of learning, satisfaction derived from mastering material, and interest in complex topics. This aligns closely with the intrinsic motivation dimension found in the original SAMS, where learning is pursued for its inherent satisfaction rather than for external rewards or obligations.

Notably, in contrast to the original SAMS framework, an item reflecting amotivation (a state of lacking intention or motivation to act) did not emerge as a distinct factor in the Palestinian sample. This may indicate cultural or interpretive differences among participants, potentially influenced by contextual factors such as educational expectations or social pressures.

Testing mediating effect

In Phase 2 ($n_2 = 324$), the data were examined for normality and the presence of outliers. violations of both univariate and multivariate normality. Several variables had skewness and kurtosis values with critical ratios surpassing ± 1.96, suggesting notable departures from a normal distribution. Additionally, Mardia's multivariate kurtosis statistic (70.851, c.r. = 17.355) confirmed multivariate non-normality. Using the standard threshold of 3, twelve univariate outliers were identified, while the Mahalanobis distance test revealed six multivariate outliers in the sample ($n_2 = 324$, $p < .001$). These multivariate outliers represented about 2% of the sample (6 out of 324), which is considered minimal. To preserve the validity of the dataset and obtain meaningful findings, the researchers decided to retain all data points, including the outliers. In SEM, one recommended method for addressing non-normality in observed variables is bootstrapping, which can provide more reliable maximum likelihood estimates [33].

Path analysis, a specialized form of SEM, was chosen for this study based on its capacity to test complex relationships among observed variables, including direct and indirect effects within a theoretically driven model [34]. The hypothesized model posits that Tracking Gaza Assault News (TGAN) which a behavioral indicator of prolonged exposure to distressing political violence through media, specifically referring to the continuous following of news related to the Israeli aggression against Gaza since October 7, 2023 that acts as a predictor variable influencing students' academic motivation, the outcome of interest.

A growing body of literature suggests that repeated media exposure to traumatic events can significantly affect individuals' psychological well-being, particularly through elevated symptoms of depression and anxiety [35–38]. In turn, poor mental health characterized by such symptoms has been consistently linked to a decline in academic motivation among adolescents and university students [26, 39, 40]. Therefore, depression and anxiety were modeled as mediating variables, allowing for the examination of indirect effects through these psychological pathways.

Using path analysis allows for empirical validation of the theoretical assumptions underpinning the proposed relationships, including the mediating role of internal psychological states in the relationship between media exposure (TGAN) and academic motivation. This analytic strategy also permits assessment of the model's overall fit to the data, enhancing the rigor and interpretability of the results. Thus, the hypothesized model is both theoretically grounded and methodologically appropriate for addressing the study's central research question. The proposed conceptual model is illustrated in Fig. 1.

In the current study, the fit between the hypothetical model and the observed data was evaluated using several indices: relative chi-square [CMIN/df], Bentler-Bonnett normed fit index [NFI], non-normed (Tucker-Lewis) fit index [TLI], comparative fit index [CFI], goodness of fit index [GFI], adjusted goodness of fit index [AGFI], root mean square error of approximation [RMSEA], and root mean square residual [RMR]. Given the violations of normality detected in the dataset, the bootstrapping method (with 2,000 resamples) was employed to generate

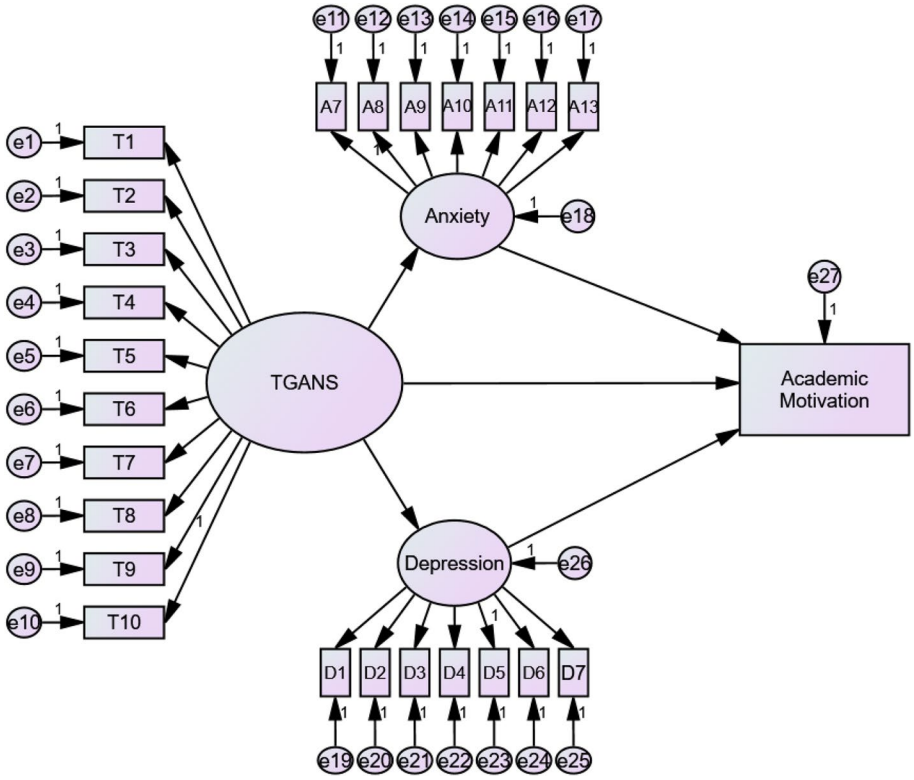

Fig. 1 Conceptualized model for TGANS, depression, anxiety, and academic motivation among Palestinian university students

bias-corrected 95% confidence intervals (CIs) and more robust maximum likelihood estimates. To further assess the overall model fit under non-normal conditions, the Bollen-Stine bootstrap test was also conducted. This test evaluates the null hypothesis that the model fits the data well, adjusting the chi-square statistic for non-normality.

The fit indices for the conceptualized model were as follows: the relative χ^2 (CMIN/df) = 3.11, which slightly exceeded the recommended threshold of 3.0; NFI = 0.822, TLI = 0.857, IFI = 0.878, CFI = 0.871, GFI = 0.814, and AGFI = 0.777 are all falling below the commonly accepted cutoff value of > 0.90. These results indicated a poor model fit. Additionally, the RMSEA = 0.081 and RMR = 0.127, both of which exceeded the recommended maximum of 0.08, further supported the conclusion that the initial model did not adequately fit the data. The Bollen-Stine bootstrap p-value was < 0.05, indicating that the model's fit was significantly different from a well-fitting model, consistent with the other fit indices.

To improve model fit, modification indices were examined, suggesting the addition of covariance between certain error terms within each construct. In addition, covariance was added between the error terms of the latent constructs' anxiety and depression, based on their conceptual overlap and high correlation. Additionally, a second covariance was added between the error terms of two individual items (A9 in the anxiety scale and D7 in the depression scale) that due to empirical indications of shared variance not explained by their respective latent variables. After applying these modifications and re-estimating the model using the bootstrapped data, fit indices indicated that the conceptualized model had acceptable goodness of fit. The fit indices for the modified model were: the relative χ^2 (CMIN/df) = 2.35, NFI = 0.868, TLI = 0.909, IFI = 0.920, CFI = 0.919, GFI = 0.940, AGFI = 0.928, RMSEA = 0.065, and RMR = 0.07. The Bollen-Stine bootstrap p-value for the modified model remained < 0.05, suggesting that although the model fit had improved significantly, it still exhibited some degree of misfit when compared to a perfectly specified model.

Despite the Bollen-Stine bootstrap p-value remaining below the conventional threshold (p <.05), the substantial improvements across multiple fit indices (CMIN/df, CFI, TLI, IFI, RMSEA, RMR) indicate that the modified model achieved an acceptable and theoretically coherent fit. This supports the validity of the added covariances and enhances the model's interpretability. Byrne (2010) notes that although a significant bootstrap p-value suggests potential misfit under non-normality, model fit should be evaluated holistically using various indices. Kline (2023) similarly emphasizes that no single index is definitive and that small deviations can be acceptable when supported by theory [31]. Hu and Bentler (1999) advocate for using multiple fit indices over sole reliance on chi-square or

bootstrap results [41]. Nevitt and Hancock (2001) add that bootstrapping should be complemented by other diagnostics for a comprehensive evaluation. Therefore, the current model is considered adequate and accepted (see Fig. 2) [42].

Differences in TGANS, depression, anxiety, and academic motivation due to categorical factors

To examine differences in the means of TGANS, depression, anxiety, and academic motivation across categorical variables (university, gender, faculty, academic year, place of residence, daily news watching, and having an imprisoned or martyred parent or sibling), a multivariate analysis of variance (MANOVA) was conducted. The results are presented in Table 3.

No significant differences were observed in any variables based on university affiliation or having an imprisoned parent or sibling. Regarding gender, females reported significantly higher depression ($F(1, 322) = 18.05$, $p < .001$, $\eta^2 = 0.055$) and anxiety ($F(1, 322) = 34.72$, $p < .001$, $\eta^2 = 0.100$), while TGANS and academic motivation did not differ significantly.

For faculty, small but significant differences emerged: students in humanities reported slightly higher TGANS ($F(1, 322) = 4.01$, $p = .046$, $\eta^2 = 0.013$), whereas natural sciences students showed slightly greater academic motivation ($F(1, 322) = 5.16$, $p = .024$, $\eta^2 = 0.016$). No significant differences appeared in depression or anxiety.

Academic year differences indicated that fourth- and fifth-year students had higher depression ($F(3, 320) = 2.85$, $p = .037$, $\eta^2 = 0.027$) and anxiety ($F(3, 320) = 2.81$, $p = .040$, $\eta^2 = 0.026$), and lower academic motivation ($F(3, 320) = 3.17$, $p = .025$, $\eta^2 = 0.030$), while TGANS differences were not significant.

Regarding place of residence, students from the 1948 Territories reported lower TGANS, depression, and anxiety, with effect sizes ranging from small to moderate. Students from camps showed higher TGANS, depression, and lower academic motivation compared to other groups.

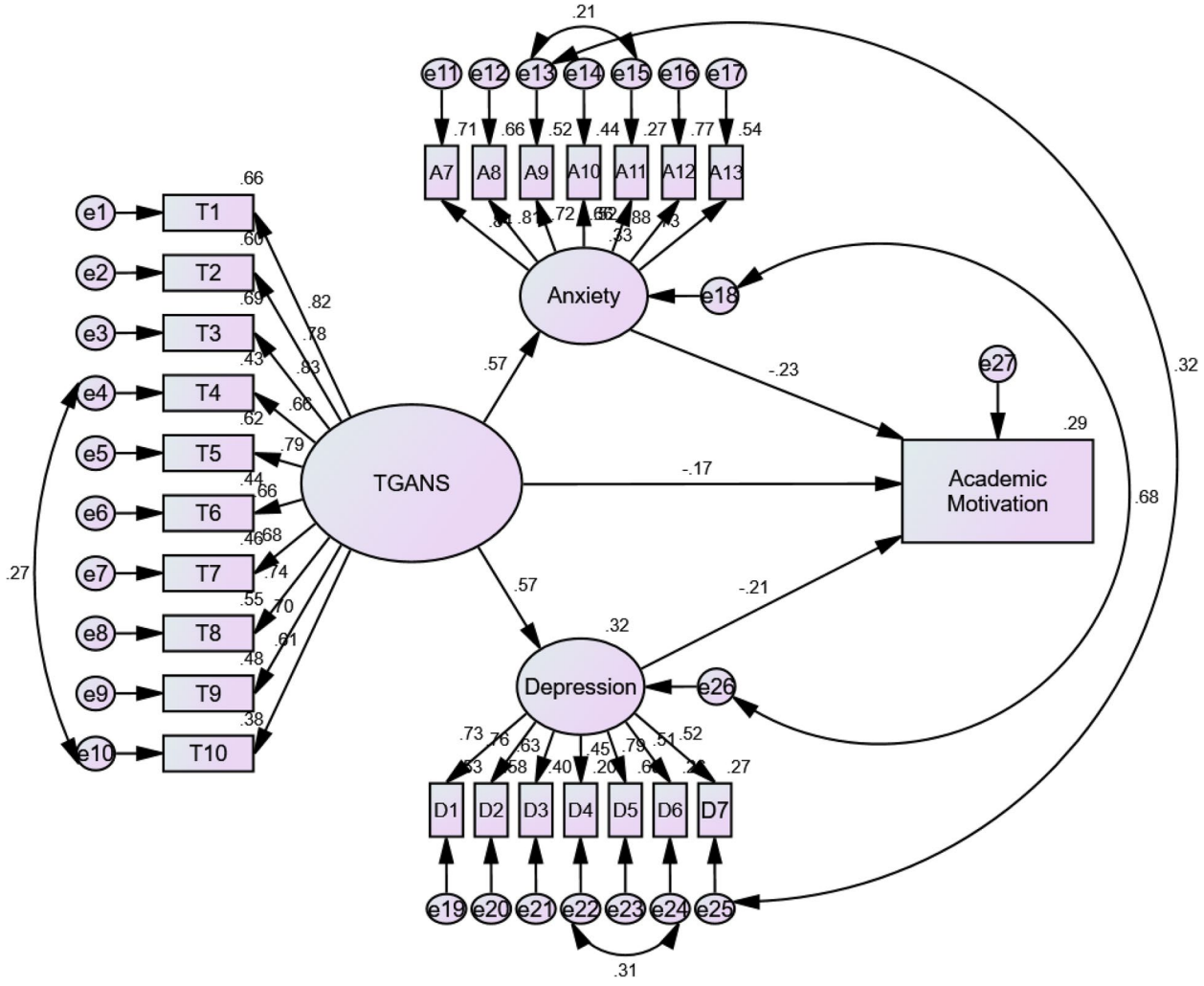

Fig. 2 Estimates of conceptualized model for TGANS, depression, anxiety, and academic motivation among Palestinian university students

Table 3 Results of MANOVA test for study variables ($n_2 = 324$)

Source	Dependent variable	SS	DF	MS	F	*P*	η^2
University	TGANS	0.109	1	0.109	0.311	0.577	0.001
	Depression	0.065	1	0.065	0.123	0.726	0.000
	Anxiety	0.146	1	0.146	0.224	0.636	0.001
	Motivation	0.697	1	0.697	1.522	0.218	0.005
Gender	TGANS	1.285	1	1.285	3.667	0.056	0.012
	Depression	9.504	1	9.504	18.045	< 0.001**	0.055
	Anxiety	22.640	1	22.640	34.716	< 0.001**	0.100
	Motivation	0.820	1	0.820	1.788	0.182	0.006
Faculty	TGANS	1.405	1	1.405	4.009	0.046*	0.013
	Depression	0.741	1	0.741	1.407	0.236	0.005
	Anxiety	0.717	1	0.717	1.099	0.295	0.004
	Motivation	2.365	1	2.365	5.160	0.024*	0.016
Academic year	TGANS	1.645	3	0.548	1.564	0.198	0.015
	Depression	4.509	3	1.503	2.854	0.037*	0.027
	Anxiety	5.500	3	1.833	2.811	0.040*	0.026
	Motivation	4.360	3	1.453	3.171	0.025*	0.030
Place of residence	TGANS	11.744	3	3.915	11.170	< 0.001**	0.097
	Depression	22.205	3	7.402	14.053	< 0.001**	0.119
	Anxiety	11.435	3	3.812	5.845	< 0.001**	0.053
	Motivation	4.701	3	1.567	3.419	0.018*	0.032
Daily watching news	TGANS	9.576	1	9.576	27.325	< 0.001**	0.081
	Depression	1.167	1	1.167	2.215	0.138	0.007
	Anxiety	5.094	1	5.094	7.810	0.006*	0.024
	Motivation	1.478	1	1.478	3.225	0.074	0.010
Imprisoned parent/sibling	TGANS	1.253	1	1.253	3.575	0.060	0.011
	Depression	1.429	1	1.429	2.713	0.101	0.009
	Anxiety	0.253	1	0.253	0.387	0.534	0.001
	Motivation	0.191	1	0.191	0.416	0.519	0.001
Martyred parent/sibling	TGANS	2.549	1	2.549	7.273	0.007*	0.023
	Depression	5.810	1	5.810	11.032	0.001*	0.034
	Anxiety	7.010	1	7.010	10.749	0.001*	0.033
	Motivation	2.550	1	2.550	5.563	0.019**	0.018

*$p < .05$, **$p < .001$

For daily news exposure, students watching more than one hour per day had higher TGANS ($F(1, 322) = 27.33$, $p < .001$, $\eta^2 = 0.081$) and anxiety ($F(1, 322) = 7.81$, $p = .006$, $\eta^2 = 0.024$).

Finally, having a martyred parent or sibling was associated with higher TGANS ($F(1, 322) = 7.27$, $p = .007$, $\eta^2 = 0.023$), depression ($F(1, 322) = 11.03$, $p = .001$, $\eta^2 = 0.034$), anxiety ($F(1, 322) = 10.75$, $p = .001$, $\eta^2 = 0.033$), and lower academic motivation ($F(1, 322) = 5.56$, $p = .019$, $\eta^2 = 0.018$). These findings highlight the psychological burden linked to bereavement and prolonged exposure to conflict-related media.

Results of SEM measurement model

Prior to testing the mediation model, a full measurement model was evaluated to confirm the factorial validity of TGANS, DASS, and SAMS. Factor loadings, average variance extracted (AVE), composite reliability, and model fit indices (CFI, TLI, RMSEA, SRMR) were examined, effectively serving as a confirmatory factor analysis (CFA). This step ensured that the latent constructs were adequately measured before examining the hypothesized mediation paths.

During SEM evaluation, modification indices suggested correlating the error terms of certain items to improve model fit. Specifically, errors were correlated between items that were conceptually similar and likely to share variance beyond the latent construct (e.g., TGANS items reflecting compulsive news-tracking behaviors). These correlations were theoretically justified, reflecting shared method variance rather than substantive overlap of constructs. Incorporating these correlations improved overall model fit, yielding satisfactory indices: CMIN/df = 2.35, NFI = 0.868, TLI = 0.909, IFI = 0.920, CFI = 0.919, GFI = 0.940, AGFI = 0.928, RMSEA = 0.065, SRMR = 0.07.

All standardized path coefficients were statistically significant, indicating that depression and anxiety mediated the effect of TGANS on academic motivation. As shown

Table 4 Results of the SEM analysis for the conceptualized model of TGANS, Depression, Anxiety, and Academic Motivation among Palestinian university students ($n_2 = 324$)

Endogenous variables	Exogenous variables	Standardized regression weights (β)	*P*	SMC*	Indirect effect (*p*)	Total effect (*p*)
Motivation	TGANS	-.172	<.01	.287	-.25(p<.001)	-.422(p<.001)
	Depression	-.206	<.05		---	
	Anxiety	-.232	<.05		---	
Depression	TGANS	.565	<.001	.319	---	.565 (p<.001)
Anxiety	TGANS	.573	<.001	.328	---	.573 (p<.001)

CMIN/df	NFI	TLI	IFI	CFI	GFI	AGFI	RMSEA	SRMR
2.35	.868	.909	.920	.919	.940	.928	.065	.07

**SMC* squared multiple correlations

Table 5 Results of the one-sample t-test for differences between the means of study constructs and the hypothetical mean of 3 ($n_2 = 324$)

Constructs	Means	Standard Deviations	t-value	*P*-value
TGANS	3.00	0.70	0.02	0.984
Depression	3.84	0.84	18.15	< 0.001**
Anxiety	2.86	0.93	−2.79	0.006*
Motivation	4.08	0.72	27.00	< 0.001**

*$p < .05$, **$p < .001$

in Table 4., TGANS had a significant positive direct effect on both depression (β = 0.565, $p < .001$) and anxiety (β = 0.573, $p < .001$), with squared multiple correlations (SMCs) of 0.319 and 0.328, respectively. In turn, both depression (β = −0.206, $p < .05$) and anxiety (β = −0.232, $p < .05$) had significant negative effects on academic motivation. TGANS also directly affected academic motivation negatively (β = −0.172, $p < .01$), with an SMC of 0.287. The indirect effect of TGANS on academic motivation through depression and anxiety was significant and negative (β = −0.25, $p < .001$), resulting in a total standardized effect of TGANS on academic motivation of β = −0.422 ($p < .001$). These results demonstrate the mediating role of depression and anxiety in the relationship between TGANS and academic motivation.

Levels of TGANS, depression, anxiety, and academic motivation

To assess the levels of TGANS, depression, anxiety, and academic motivation among Palestinian university students, the scores for each construct were compared to an appropriate cutoff value. This cutoff was determined as the midpoint between the minimum and maximum possible scores. Since the constructs in this study were measured using a five-point Likert scale, the scores ranged from 1 to 5, with a midpoint of 3 serving as the hypothetical mean. A one-sample t-test was conducted to evaluate whether the sample means for TGANS, depression, anxiety, and academic motivation significantly deviated from this midpoint. The results of the one-sample t-test are summarized in Table 5.

As shown in Table 4, the results of the one-sample t-test revealed no significant difference between the mean score of TGANS and the hypothetical mean of 3 (M = 3.00, $p = .984$), indicating a moderate level of tracking Gaza assault news among Palestinian university students. In contrast, the mean score of depression was significantly higher than the hypothetical mean (M = 3.84, $p < .001$), suggesting that students experienced elevated levels of depressive symptoms. On the other hand, the mean score of anxiety was significantly lower than the hypothetical mean (M = 2.86, $p = .006$), indicating a relatively low level of anxiety. Furthermore, a significant positive difference was observed between the mean score of academic motivation and the hypothetical mean (M = 4.08, $p < .001$), reflecting a high level of academic motivation among the students.

Discussion

High levels of depression and anxiety among students tracking Gaza news

The finding that Palestinian university students exhibit high levels of depression and anxiety due to repeated exposure to war news aligns strongly with previous literature (Abed Alah, 2024 [1]; Abuejheisheh et al., 2024 [2]; Amro, 2024 [4]; Marie et al., 2020 [7]). Similar to these studies, our participants reported psychological exhaustion from witnessing recurring trauma through media, despite not being directly exposed to violence. This supports Garfin et al. (2020) [16], who noted that media coverage can act as a trauma amplifier, especially during ongoing crises. Our results extend this body of work by showing that even indirect exposure through news tracking—rather than only firsthand violence—can have equivalent mental health consequences. This is underexplored in prior studies, which often focus on direct trauma (e.g., Seleznova et al., 2023 [3]; Yousef et al., 2021 [12]). Recent Palestinian studies also confirm these findings, highlighting the psychological toll of the Gaza War and the role of media exposure in shaping students' resilience and life meaning (Saeedi, Jabali& Khalili, 2025 [43]).

Media exposure is positively associated with psychological distress

Consistent with the Cognitive Appraisal Theory (Lazarus & Folkman, 1984 [15]), our participants interpreted war-related news as a chronic psychological threat, activating persistent stress responses. This aligns with Appiah-Kusi et al. (2017) [17] and Owens et al. (2012) [18], who note that exposure to emotionally disturbing stimuli (like traumatic news) triggers maladaptive appraisals and cognitive disruption. Our study supports Hanan et al. (2021) [19], who observed a similar link between media coverage of violence and youth anxiety, and Khalaf et al. (2023) [20], who found that digital media exacerbates depression among adolescents and young adults. In line with these findings, studies among Palestinian students also highlight the contribution of media tracking to burnout and psychological distress, particularly in academic contexts (Jabali et al., 2025 [44]). The Palestinian context appears to magnify these effects due to ongoing identification with the victims and perceived helplessness—factors absent in most Western-based studies.

Depression and anxiety significantly mediate the relationship between news exposure and academic motivation

This mediating effect mirrors findings from Owens et al. (2012) [18], who show that psychological distress reduces working memory and focus, impacting academic performance. While earlier studies among Palestinian students (Ahmead et al., 2024 [10]; Shawahna et al., 2020 [13]) found high rates of depression and anxiety, they did not statistically model the mediating impact on educational outcomes. Thus, our study fills a crucial gap in the literature by empirically demonstrating this psychological mediation and linking it specifically to indirect trauma. This nuance is largely missing from studies such as Abuejheisheh et al. (2024 [2]) and Amro (2024 [4]), which focus on direct violence or clinical trauma among nursing students. Recent mixed-method studies further support the connection between virtual exposure to conflict-related content and academic motivation disruption among Palestinian students (Jabali, Saeedi & Hamamra, 2025 [45]).

Conclusion

This study investigated the psychological and academic consequences of constant exposure to Gaza war-related news among Palestinian university students. The findings reveal a significant relationship between media tracking of war events and elevated levels of anxiety and depression. These psychological effects, in turn, were closely linked to decreased academic motivation and cognitive disengagement. Students described persistent feelings of helplessness, sadness, and emotional exhaustion, especially those living in refugee camps or exposed to economic hardship. The data suggest that for many students, war-related news serves as an indirect but powerful source of trauma, disrupting their mental health and educational performance even in the absence of direct physical violence.

These findings are consistent with prior studies highlighting the toll of political violence on Palestinian youth (Marie et al., 2020; Shawahna et al., 2020) [7, 13], and they echo international evidence from similar conflict settings such as Ukraine and Syria (Seleznova et al., 2023; Yousef et al., 2021) [3, 12]. Furthermore, this study builds upon and extends existing literature by focusing not only on the emotional consequences of war media exposure, but also on its academic and motivational repercussions. The data show how media saturation can create a cycle of psychological distress and academic dysfunction, shaped by gender, living environment, and year of study.

However, several limitations must be acknowledged. First, the study employed a cross-sectional design, which limits the ability to infer causal relationships between media exposure, psychological distress, and academic motivation. It is unclear whether mental health issues are the cause or the consequence of academic disengagement. Second, all data were self-reported, which may introduce bias due to social desirability, emotional overload, or inaccurate recall—especially when discussing politically sensitive or traumatic experiences. Third, while the study included students from a range of disciplines and backgrounds, the sample was relatively small and may not represent the full diversity of Palestinian university students, particularly those in Gaza, whose exposure and experiences are likely even more severe. Additionally, the study did not explore in depth the protective or moderating factors such as resilience, faith, or social support, which may influence how students respond to media exposure. Finally, the study did not differentiate between types of media (e.g., television, social media, online news platforms), though previous research indicates that different platforms can have varying psychological effects.

In light of these findings, several implications for future research and practice emerge. First, longitudinal studies, such as latent growth curve modeling (LGCM), are needed to assess the long-term mental health and academic outcomes of students who are chronically exposed to conflict-related media. Such research could help clarify whether and how symptoms of distress accumulate or change over time. Second, future studies should consider controlling for demographic characteristics (e.g., gender, academic year, faculty, family background) when testing path models, to ensure that observed relationships are not confounded by these variables. Additional research should also explore the roles of coping mechanisms, resilience, family support, and institutional resources in

buffering the effects of indirect trauma. In particular, it would be valuable to examine the impact of media literacy and emotional regulation programs in helping students manage their exposure to distressing content. Furthermore, educational institutions in Palestine should develop trauma-informed strategies and mental health services tailored to the realities of conflict zones. These may include academic accommodations, psychological counseling, peer support groups, and campus-wide awareness campaigns aimed at promoting well-being during times of national crisis.

Supplementary Information

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Supplementary Material 1.

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Informed consent
All participants provided informed consent after being fully informed of the study's purpose, procedures, and their rights, including the right to withdraw at any time without penalty.

Confidentiality measures
Participants' privacy was protected through anonymization, secure data storage, and restricted access to research materials, ensuring confidentiality throughout the study.

Authors' contributions
Fakher Khalili designed the study and performed all data analyses. Munther Saeedi and Shaden Jabali conducted data collection. Oqab and Shaden Jabali contributed to interpretation of results. Oqab and Munther wrote the initial draft and finalized the manuscript. All authors read and approved the final version. All authors participated in drafting and revising the manuscript and approved the final version for publication.

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Data availability
Quantitative survey responses are provided as a supplementary file. Qualitative interview data are not publicly available due to confidentiality agreements but can be requested from the corresponding author on reasonable grounds.

Declarations

Ethics approval and consent to participate
Ethical approval for this study was obtained from the Institutional Review Board (IRB) of An-Najah National University (Approval No. Hum. Nov. 2024/25). The research involved minimal risk activities, specifically structured interviews with participants. The approval covered all aspects of participant recruitment, data collection, and analysis. All procedures were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Consent for publication
All participants provided explicit consent for the publication of anonymized excerpts from their interviews. No identifying personal or clinical details, images, or information that could compromise participant anonymity are included in this manuscript. Written consent to publish de-identified quotations was obtained from all participants in accordance with Institutional Review Board (IRB) requirements.

Competing interests
The authors declare no competing interests.

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