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Post-Traumatic Stress Symptoms and Positive PTSD Screening among Adults with Cancer in Iraq: A Cross-Sectional Study

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ABSTRACT

Objective: This study assessed post-traumatic stress symptom burden and positive PTSD screening among adults with cancer in Al-Diwaniyah, Iraq, and examined differences across sociodemographic and cancer-stage categories.

Methods and Materials: A descriptive cross-sectional study recruited 236 adults with confirmed cancer diagnoses through purposive sampling at Al-Diwaniya Teaching Hospital, Iraq, between December 2025 and January 2026. PTSD symptoms were assessed through structured interviews using an Arabic version of the 20-item PTSD Checklist for DSM-5 (PCL-5). Scores ≥33 indicated positive screening. Data were analyzed using descriptive statistics, Mann–Whitney U tests, and Kruskal–Wallis tests.

Findings: The mean PCL-5 score was 33.14 ± 13.12, and 60.6% of participants screened positive for probable PTSD. Based on study-defined descriptive score bands, 67 participants (28.4%) scored 0–26, 157 (66.5%) scored 27–53, and 12 (5.1%) scored 54–80. Symptom endorsement was reported for intrusion (89.4%), avoidance (75.0%), negative alterations in cognition and mood (80.5%), and alterations in arousal and reactivity (81.4%). No significant differences in PCL-5 scores were detected by sex (p = .894), age (p = .625), marital status (p = .964), parental status (p = .161), education (p = .423), or cancer stage (p = .301).

Conclusion: Substantial post-traumatic stress symptom burden was observed among adults receiving cancer care. Positive screening warrants further clinical evaluation but does not establish a PTSD diagnosis.

Keywords: Cancer, Post-Traumatic Stress Symptoms, PTSD Screening, Oncology, Iraq.

Introduction

Cancer diagnosis and treatment can be accompanied by intrusive recollections, avoidance, heightened arousal, and other forms of psychological distress. These responses vary across patients and over the course of illness. Early conceptual work and subsequent reviews emphasize that cancer-related stress symptoms require careful assessment because symptom burden, screening-defined probable PTSD, and a clinical diagnosis are different outcomes (Cordova et al., 2017; Kangas et al., 2002). A cancer diagnosis alone does not establish that all diagnostic requirements for PTSD have been met.

Estimates of PTSD after cancer differ across studies because populations, timing, measures, and diagnostic methods differ. Meta-analytic evidence documents substantial heterogeneity, making direct comparisons between questionnaire thresholds and structured diagnostic interviews problematic (Swartzman et al., 2017). Prospective research also illustrates the importance of examining symptom trajectories rather than assuming that distress is fixed after diagnosis (Lebimoyo & Sanni, 2023). Local assessment is therefore useful, provided its sampling and measurement limits are explicit.

Iraqi oncology research has examined chemotherapy-related anxiety, psychological distress, and coping, supporting attention to emotional needs alongside medical treatment (Al-Jubouri et al., 2021; Khalifa, 2022; Mohammed Alsdfan et al., 2025). Emotional expression and cancer-related fatigue may also be relevant to treatment engagement, although these constructs should not be treated as interchangeable with PTSD (Bashiri-Nejadian et al., 2024). An integrated approach to chronic illness care connects biological treatment with psychological and social assessment (Seyed Alitabar, 2025).

The present study assessed post-traumatic stress symptom burden among adults receiving cancer care at the Oncology Center of Al-Diwaniya Teaching Hospital, Iraq. Its objectives were to describe the proportion screening positive on the PTSD Checklist for DSM-5 (PCL-5), summarize symptom scores and study-defined score bands, and compare total scores across selected sociodemographic and cancer-stage categories. The study estimates proportions within the recruited sample rather than population prevalence for Iraq.

Methods and Materials

Design, Setting, and Participants

A descriptive cross-sectional study was conducted at the Oncology Center of Al-Diwaniya Teaching Hospital in Al-Diwaniyah City, Iraq. Data were collected from 22 December 2025 to 24 January 2026. Non-probability purposive sampling yielded 236 patients receiving oncology treatment or follow-up care.

Eligible participants were aged 18 years or older, had a confirmed cancer diagnosis, and were aware of that diagnosis. Patients with uncontrolled or unstable disease during data collection and those whose diagnosis had not been disclosed to them were excluded. The questionnaire was administered through structured interviews to all participants, allowing assistance regardless of reading ability and maintaining a common administration format. The sampling approach did not provide a representative sample of all patients with cancer in the region.

Measures and Data Collection

The questionnaire recorded sex, age, marital status, whether participants had children, educational level, and cancer stage. PTSD symptoms were assessed with the 20-item PCL-5 (Weathers et al., 2013). Each item is rated from 0 to 4, giving a total score of 0–80; higher scores indicate greater symptom burden. The instrument covers intrusion, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity. Developmental research supports its use as a symptom and screening measure (Blevins et al., 2015).

The Arabic questionnaire was prepared using forward and back translation, with review by mental health nursing experts for linguistic and conceptual appropriateness. Structured interviews were used to clarify item wording and record participants' responses. Prior work supports the feasibility of assisted PCL-5 administration in Arabic-speaking populations in Iraq, but it does not establish the validity of this study's translation or threshold in an oncology sample (Ibrahim et al., 2018).

A total score ≥33 defined a positive screen for probable PTSD. This threshold is supported by PCL-5 validation research in other populations, but screening performance depends on population and context (Bovin et al., 2016). Positive screening was interpreted as a need for further assessment, not a confirmed diagnosis. Item scores ≥2 indicated symptom endorsement. Cluster percentages were summarized descriptively. Study-defined total-score bands were 0–26, 27–53, and 54–80; these are descriptive score ranges rather than validated clinical categories of PTSD severity.

Data Analysis

Data were analyzed with IBM SPSS Statistics. Frequencies and percentages summarized categorical characteristics and screening indicators; means and standard deviations summarized continuous scores. The Kolmogorov–Smirnov test was used to assess distributional assumptions, and nonparametric comparisons were selected because the score distribution was reported as non-normal. Mann–Whitney U tests compared sex and parental-status groups; Kruskal–Wallis tests compared age, marital-status, education, and cancer-stage groups. Statistical significance was set at $p \leq .05$. Means and standard deviations are presented descriptively alongside the rank-based tests; those tests should not be interpreted as tests specifically of mean differences.

Ethical Considerations

Approval was obtained from the Scientific Research Ethics Committee at the College of Nursing, and official permissions were obtained from the hospital administration. All participants provided informed consent before data collection. Participation was voluntary, and participants could withdraw without consequences. Responses were recorded confidentially, and identifying information was protected during data collection, analysis, and reporting.

Findings and Results

Participant Characteristics

The sample comprised 236 patients, including 115 men (48.7%) and 121 women (51.3%). Mean age was 46.8 years (SD = 18.0), and the largest age category was ≥50 years (106 patients; 44.9%). Most were married (166; 70.3%) and had children (173; 73.3%). Sixty-six participants (28.0%) held a diploma or bachelor's degree. Stage III was the most frequent cancer stage

(86; 36.4%), followed by stage II (59; 25.0%), stage IV (49; 20.8%), and stage I (42; 17.8%). Full characteristics are presented in Table 1.

Table 1

Participant characteristics

Characteristic	Category	n	%
Sex	Male	115	48.7
	Female	121	51.3
Age (years)	≤19	13	5.5
	20–29	35	14.8
	30–39	41	17.4
	40–49	41	17.4
	≥50	106	44.9
Marital status	Single	48	20.3
	Married	166	70.3
	Divorced	9	3.8
	Widowed	13	5.5
Children	Yes	173	73.3
	No	63	26.7
Education	Read/write	52	22
	Primary school	48	20.3
	Secondary school	64	27.1
	Diploma/Bachelor	66	28
	Postgraduate	6	2.5
Cancer stage	First	42	17.8
	Second	59	25
	Third	86	36.4
	Fourth	49	20.8

Note. N = 236. Mean age = 46.8 years (SD = 18.0). Percentages may not total 100 because of rounding. Eligibility required age ≥18 years.

Symptom Endorsement and Positive Screening

The reported cluster percentages were 89.4% for intrusion, 75.0% for avoidance, 80.5% for negative alterations in cognition and mood, and 81.4% for alterations in arousal and reactivity (Table 2). Overall, 60.6% of participants screened positive at the PCL-5 total-score threshold of ≥33. Cluster percentages are overlapping indicators and should not be added or interpreted as independent diagnoses.

Table 2

Reported symptom-cluster percentages and positive PCL-5 screening

Cluster / indicator	Domain / definition	%
B	Intrusion	89.4
C	Avoidance	75.0
D	Negative alterations in cognition and mood	80.5
E	Alterations in arousal and reactivity	81.4
Positive screening	PCL-5 total score ≥33	60.6

Note. N = 236. PCL-5 = PTSD Checklist for DSM-5. Item ratings ≥2 indicated endorsement. Cluster-specific aggregation rules were not specified. Cluster percentages overlap and do not establish clinical diagnoses. Positive screening uses the total-score threshold ≥33.

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Distribution of Total Scores

Mean PCL-5 total score was 33.14 (SD = 13.122). Using the study-defined descriptive bands, 67 participants (28.4%) had scores of 0–26, 157 (66.5%) had scores of 27–53, and 12 (5.1%) had scores of 54–80 (Table 3; Figure 1). The middle band spans scores both below and above the screening threshold of 33. Its 66.5% proportion therefore measures a different feature of the distribution from the 60.6% positive-screening proportion; it is not a measure of subthreshold PTSD.

Table 3

Distribution across study-defined PCL-5 score bands

Study-defined band	PCL-5 total score	n	%
Lower score	0–26	67	28.4
Middle score	27–53	157	66.5
Higher score	54–80	12	5.1
Total	0–80	236	100.0

Note. N = 236. Overall M = 33.14, SD = 13.122. Bands are descriptive subdivisions of the possible 0–80 range and are not validated clinical severity categories.

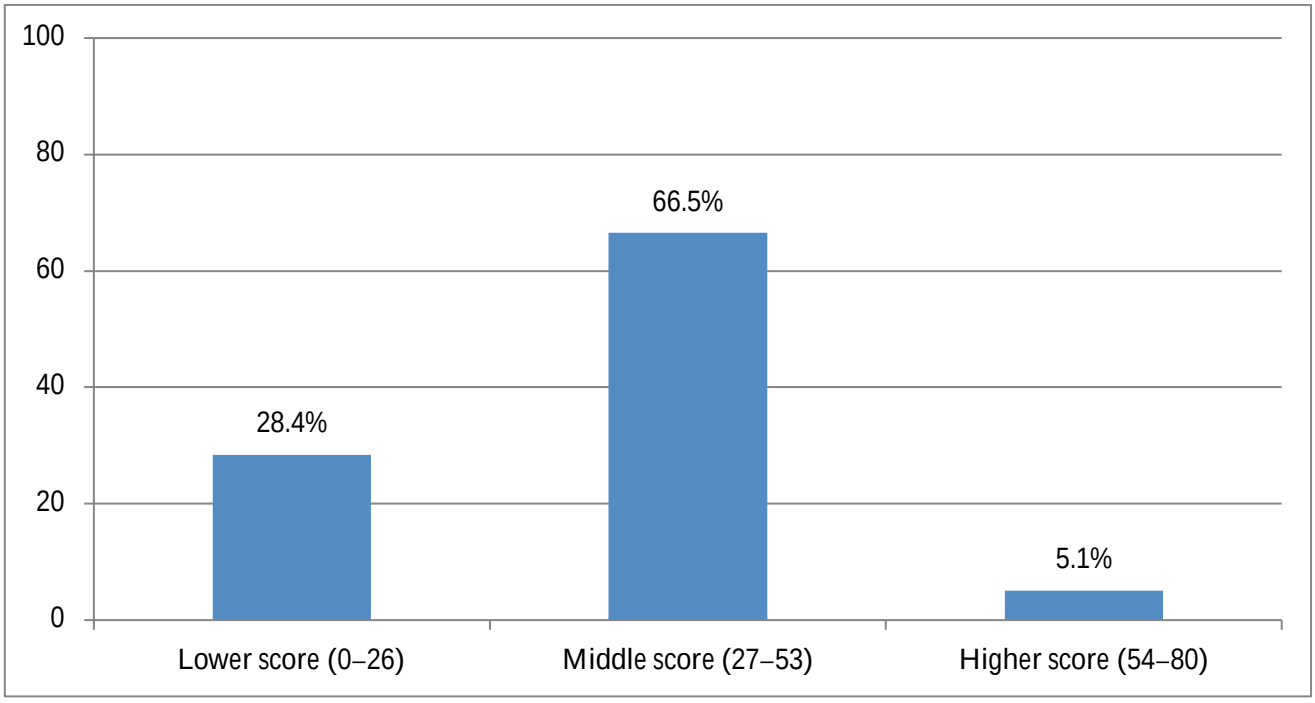


Figure 1

Distribution of PCL-5 total scores across study-defined descriptive bands (N = 236).

Note. Percentages correspond to 67, 157, and 12 participants. The score bands are not validated clinical severity categories and differ from the positive-screening threshold of ≥33.

Group Comparisons

PCL-5 total scores did not differ statistically across the examined categories: sex (p = .894), age (p = .625), marital status (p = .964), having children (p = .161), education (p = .423), or cancer stage (p = .301). Descriptive group scores and tests are presented in Table 4. These results indicate that the analyses did not detect group differences at the specified significance level; they do not demonstrate equivalence among groups or exclude clinically relevant differences.

Table 4

PCL-5 total scores by sociodemographic and cancer-stage categories

Characteristic	Category	M ± SD	Test	p
Sex	Male	32.99 ± 12.441	Mann–Whitney U	.894
	Female	33.29 ± 13.787		
Age (years)	≤19	29.00 ± 15.204	Kruskal–Wallis	.625
	20–29	36.66 ± 12.278		
	30–39	33.10 ± 11.560		
	40–49	33.32 ± 12.741		
	≥50	32.44 ± 13.806		
Marital status	Single	33.63 ± 13.266	Kruskal–Wallis	.964
	Married	32.69 ± 13.037		
	Divorced	35.67 ± 12.796		
	Widowed	35.38 ± 14.914		
Children	Yes	32.45 ± 12.980	Mann–Whitney U	.161
	No	35.05 ± 13.424		
Education	Read/write	32.54 ± 12.363	Kruskal–Wallis	.423
	Primary school	33.48 ± 15.955		
	Secondary school	31.81 ± 11.804		
	Diploma/Bachelor	35.21 ± 12.617		
	Postgraduate	27.17 ± 13.732		
Cancer stage	First	28.62 ± 15.468	Kruskal–Wallis	.301
	Second	35.02 ± 11.586		
	Third	34.66 ± 10.743		
	Fourth	32.10 ± 15.638		

Note. N = 236. M = mean; SD = standard deviation. Tests compare rank distributions; means and SDs are descriptive. One p value applies to each characteristic. Statistical significance was set at p ≤ .05. Test statistics and effect sizes were not reported.

Discussion and Conclusion

Interpreting the Symptom Burden

A substantial proportion of this purposively recruited oncology sample screened positive for probable PTSD, and the mean total score was close to the chosen threshold. These findings identify a need for further psychosocial assessment in the study setting. They do not establish the prevalence of clinically diagnosed PTSD or show that cancer caused the reported symptoms. A positive questionnaire score requires assessment of trauma exposure, symptom

duration, impairment, and alternative explanations (Cordova et al., 2017).

The screening proportion should be compared cautiously with published oncology research. Meta-analytic estimates vary according to assessment method, sample characteristics, and timing, while prospective studies examine changes after diagnosis that a cross-sectional assessment cannot capture (Lebimoyo & Sanni, 2023; Swartzman et al., 2017). Treatment-related symptoms, prior trauma, and pre-existing psychological difficulties may contribute to questionnaire responses. This study did not establish the onset of symptoms relative to cancer or isolate cancer-specific effects.

The choice of screening threshold also matters. A cutoff used successfully in one population need not have the same sensitivity and specificity in another. PCL-5 validation in Kurdish and Arab displaced populations in Iraq identified a context-specific optimal cutoff lower than 33, illustrating the need for local diagnostic evaluation rather than automatic transfer of thresholds (Bovin et al., 2016; Ibrahim et al., 2018). Diagnostic accuracy and the suitability of ≥33 in Iraqi oncology patients require evaluation against a structured clinical interview.

The three descriptive bands should likewise be separated from clinical judgments. Equal subdivisions of a scale's possible range do not, by themselves, establish mild, moderate, or severe PTSD. The middle range includes positive and negative screens, and its frequency cannot be used to infer how many participants had subthreshold symptoms. Reporting the continuous score and the screening threshold alongside the descriptive bands preserves these distinctions.

Sociodemographic and Cancer-Stage Comparisons

None of the six reported group comparisons reached statistical significance. This pattern does not establish that demographic characteristics and disease stage are unimportant, nor does it show that cancer is a universal stressor with equivalent effects. Some categories were small, including the postgraduate group (n = 6) and the divorced group (n = 9), limiting precision. The absence of effect sizes, confidence intervals, and adjusted analyses further constrains interpretation of the observed differences. In contrast, research with hospitalized patients with cancer has reported higher symptom burden among younger and female patients, emphasizing that associations may vary with population and clinical setting (Nipp et al., 2018).

Subjective threat, coping, social support, psychiatric history, and treatment experiences are plausible topics for future investigation, but they were not measured here as explanations of the findings. Research on distress and coping among Iraqi patients with cancer provides a relevant basis for examining these dimensions prospectively (Khalifa, 2022; Mohammed Alsdfan et al., 2025). The present null comparisons cannot determine which unmeasured factors are more influential than demographic or clinical characteristics.

Implications for Oncology Care

The findings support offering accessible assessment of distress within oncology care and arranging further evaluation when screening results or clinical concerns indicate substantial needs. Assessment should distinguish PTSD from adjustment difficulties, anxiety, depression, and distress associated with ongoing medical problems (Cordova et al., 2017). Referral pathways should be responsive to symptoms and

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functional difficulties rather than restricted to a particular age, sex, educational level, or cancer stage on the basis of these analyses.

Psychological support should complement medical treatment and account for patients' physical symptoms, coping resources, family context, and treatment demands (Seyed Alitabar, 2025). Emotional expression and fatigue may be relevant to engagement with cancer care, but adherence was not measured in this study and cannot be inferred from PCL-5 scores (Bashiri-Nejadian et al., 2024). Coordination between oncology staff and mental health professionals could help identify individual support needs and appropriate follow-up.

Supportive interventions should be matched to an assessed problem. Mindfulness-based approaches have been studied for mental pain, distress tolerance, and psychological hardiness in breast cancer, offering a possible direction for supportive care rather than proof of treatment for PTSD in this sample (Seyed Alitabar & Zadhasn, 2023). Similarly, Iraqi research on chemotherapy-related anxiety supports attention to psychological symptoms during treatment without establishing an intervention's effect on PTSD (Al-Jubouri et al., 2021). Prospective evaluation is needed before attributing clinical benefit to a local screening or support program.

Limitations and Future Research

The cross-sectional design does not establish temporal ordering or causality. Purposive recruitment at one center limits generalizability, and exclusion of patients with unstable disease or undisclosed diagnoses may have introduced selection bias. Cancer types, treatment modalities, time since diagnosis, prior trauma, psychiatric history, and functional impairment were not characterized in the reported analyses. Differences in these factors could influence the observed symptom distribution.

The study used an interviewer-administered symptom checklist without a structured diagnostic interview. Criterion A trauma exposure, symptom duration, and diagnostic impairment were not established, so results remain screening-based. Translation review supports linguistic suitability but does not substitute for psychometric validation in Iraqi oncology patients. Sample-specific reliability and diagnostic accuracy were not reported. The precise aggregation rule underlying each cluster percentage was not specified, limiting interpretation of the cluster results.

Means and standard deviations summarize score distributions but do not fully characterize their skewness. Test statistics, effect sizes, confidence intervals, and multivariable estimates were unavailable, and the study-defined score bands have no demonstrated clinical validity. Future studies should use transparent scoring rules, locally evaluated screening thresholds, diagnostic interviews, broader clinical and psychosocial measures, and longitudinal follow-up. Larger multisite samples would also improve precision and allow assessment of potentially important differences between patient groups.

Conclusion

Among 236 adults receiving cancer care at a single center in Al-Diwaniyah, 60.6% screened positive at a PCL-5 threshold of ≥33, and the mean score was 33.14. No statistically significant score differences were detected across the examined sociodemographic or cancer-stage categories. The findings support attention to post-traumatic stress symptoms and accessible psychosocial assessment in oncology care. Positive

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screening and descriptive score bands require cautious interpretation and cannot replace clinical diagnosis.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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