STROBE Statement—Checklist of items that should be included in reports of **cohort studies**

	Item No	Recommendation
Title and abstract	1	(*a*) The title indicates a cohort study. Impact of Tinnitus on Anxiety, Depression, and Sleep Disorders in Military Personnel with Blast Injuries
		(*b*) The abstract includes introduction, methods, key results and conclusions.
Introduction		
Background/rationale	2	Blast injuries in military personnel often lead to various complications, including tinnitus, which may affect mental health and sleep quality.
Objectives	3	This study aims to determine the correlation between the presence of tinnitus and the levels of anxiety, depression, and the quality of sleep in military personnel with blast injuries.
Methods		
Study design	4	We designed a prospective cohort study to analyze the characteristics of sleep and adaptation disorders in military personnel who have suffered blast injuries. (Page 3)
Setting	5	This study involved a systematic collection of data from military personnel treated at the University Clinic of Odesa National Medical University from October 2023 to April 2024 (Page 3).
Participants	6	(*a*) The study surveyed 35 military personnel with blast injuries, aged between 22 and 56 years. We included only individuals who had sustained mild Traumatic Brain Injury (TBI) and were in the acute phase of their recovery. Patients who had sleep disorders before their injury were excluded from the study (Page 3).
		(*b*) N/a
Variables	7	We measured anxiety, depression, and sleep quality. These were assessed using the Hospital Anxiety and Depression Scale (HADS) and the modified Pittsburgh Sleep Quality Index (PSQI) (Page 3).
Data sources/ measurement	8*	HADS used to assess the levels of anxiety and depression. Consists of 14 items, 7 for anxiety and 7 for depression, rated on a 4-point scale. PSQI includes individual items, combined into seven "component" scores that are summed to produce a global score (Page 3).
Bias	9	Selection Bias: Participants with pre-existing sleep disorders were excluded to avoid pre-bias. Information Bias: We used validated instruments (HADS and PSQI) to measure outcomes uniformly across all groups (Page 3).
Study size	10	Given the specific timeframe (October 2023 to April 2024) and the resources available, a cohort of 35 allowed for thorough data collection (Page 3).
Quantitative variables	11	Participants were grouped based on their injury and condition: Group 1 - BI with TBI, barotrauma, and tinnitus; Group 2 - BI with TBI without tinnitus; Group 3 - BI without TBI (control group). Descriptive statistics (mean, standard deviation) and inferential statistics (ANOVA, post-hoc tests) were used to compare these scores across groups (Page 4).
Statistical methods	12	(*a*) We used the Shapiro-Wilk test to assess the normality of the distribution of each variable and ANOVA was used to compare mean scores of anxiety, depression, and sleep quality across the three groups. Post-hoc Tukey tests were applied to identify specific group differences (Page 4-5).
		(*b*) ANOVA to understand how these factors jointly influence outcomes (Page 4).
		(*c*) N/a
		(*d*) N/a
		(*e*) N/a

Results

Participants	13*	(a) 35 participants were finally included in the study after ensuring they met all criteria and after obtaining informed consent.
		(b) Military personnel with different types of injuries were not examined as they were identified as not meeting the injury-type criteria based on preliminary screening.
		(c) N/a
Descriptive data	14*	(a) The participants' ages ranged from 22 to 56 years, with a mean age of 31 years. All participants were male. Injury Type: 14 participants had blast injuries with TBI and without tinnitus, and 5 participants had blast injuries with TBI, barotrauma, and tinnitus. 16 participants were in the control group with blast injuries but no TBI (used as a comparative baseline). Severity of TBI: All participants with TBI had mild TBI, assessed by a Glasgow Coma Scale score of 13-15. No significant previous medical history that met the exclusion criteria, except the noted exclusions (Page 4).
		(b) N/a
		(c) 7 months
Outcome data	15*	N/a
Main results	16	(*a*) Group 1: mean HADS anxiety: 11.60. SD: 5.37 range: 3 – 17 p-value = 0.502 mean HADS depression: 15.20. SD: 2.39 range: 13 – 19 p-value = 0.294 mean PSQI: 14.8 SD: 1.30 range: 13 – 16 p-value = 0.421
		Group 2: mean HADS anxiety: 8.00 SD: 3.55 range: 3 – 13 p-value = 0.192 mean HADS depression: 9.07 SD : 3.85 range : 1 – 15 p-value = 0.909 mean PSQI: 11.3 SD: 2.71 range : 5 – 15 p-value = 0.091
		Group 3: mean HADS anxiety: 6.50 SD: 2.92 range: 2 – 12 p-value = 0.114 mean HADS depression: 6.81 SD: 3.47 range: 0 – 12 p-value = 0.628 mean PSQI: 6.69 SD: 2.15 range: 3 – 11 p-value = 0.896. (Page 4).
		(*b*) A sleep quality score of 0-7 points was considered satisfactory. Those scoring above 7 points were categorized as having poor sleep quality. On the HADS scale, scores above 11 were considered significant and indicative of clinical manifestations of adaptation disorder.
		(*c*) N/a
Other analyses	17	ANOVA: HADS Anxiety: F-statistic: 3.92, p-value: 0.030 HADS Depression: F-statistic: 10.85 p-value: 0.00025 PSQI: F-statistic: 29.27 p-value: 5.92e-08
		Post-hoc test: Group 1 vs Group 2: HADS anxiety: mean Difference = 3.60, p(Tukey) = 0.145 HADS depression: mean Difference = 6.13, p(Tukey) = 0.006 PSQI: mean Difference = 3.44, p(Tukey) = 0.020
		Group 1 vs Group 3 HADS anxiety: mean Difference = 5.10, p(Tukey) = 0.023 HADS depression: mean Difference = 8.39, p(Tukey) = <0.001 PSQI: mean Difference = 8.11, p(Tukey) = <0.001 Group 2 vs Group 3: HADS anxiety: mean Difference = 1.50, p (Tukey) = 0.492. HADS depression: mean Difference = 2.26, p (Tukey) = 0.201. PSQI: mean

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		Difference = 4.67, p(Tukey) = <0.001 (page 5)
Discussion		
Key results	18	A statistically significant difference in the level of anxiety was found between Group 1 and Group 3, where Group 1 exhibited higher levels of anxiety. Significant differences in depression levels were observed between Group 1 and both Group 2 and Group 3. Group 1 displayed higher levels of depression. As for sleep quality, it varied significantly among all three groups. Group 1 had the poorest sleep quality compared to the other two groups, while the control group exhibited better sleep quality when compared to Groups 1 and 2(page 5) .
Limitations	19	The main limitation of our study is the relatively small sample size (n = 35) and the inclusion of only men in the study group, which may affect the generalizability and the accuracy of the estimate (page 5).
Interpretation	20	The presented results confirm that the presence of tinnitus correlates with a significant increase in levels of anxiety, depression and sleep quality. Tinnitus can be considered an independent factor in worsening sleep quality and adaptation (page 5).
Generalisability	21	The findings are most directly applicable to male military personnel who have experienced mild blast injuries. Future research should aim to include populations that are more diverse.
Other information		
Funding	22	The publication of this article has not received funding.
Ethics statement		This study involves human participants and was approved by Local Ethics Committee in the Odessa National Medical University N 0842/27 dated 14.Mar 2024

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