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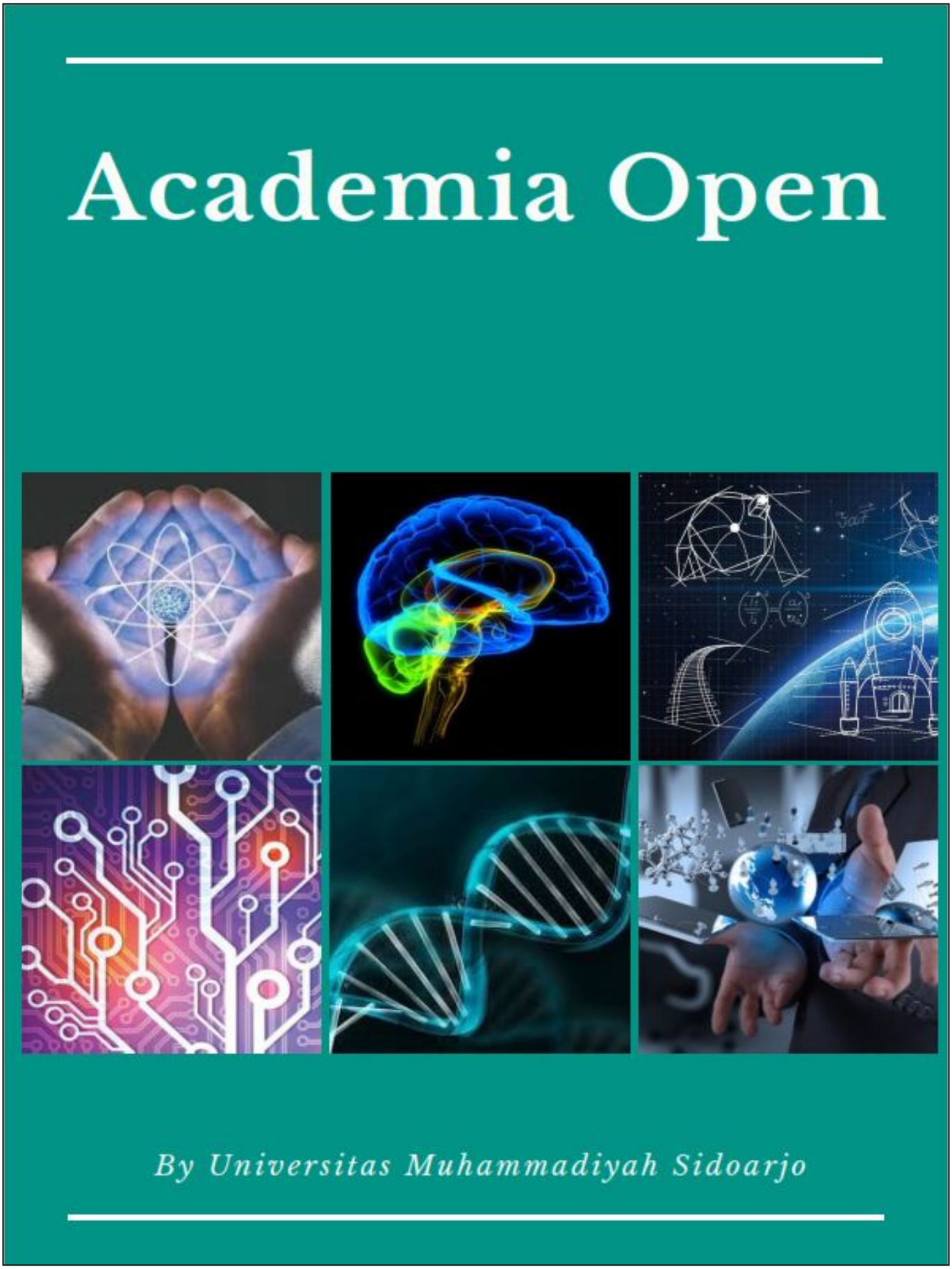

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Study of the Prevalence of Gastrointestinal Diseases Among Conscripts

Kabilova Gulshan Abdirashidovna, kabilovagulshan@gmail.com, ()

Department of Preventive Medicine, Public Health, Health Care Management, Bukhara State Medical Institute, Uzbekistan

(1) Corresponding author

Abstract

General Background: Functional gastrointestinal disorders (FGIDs) are increasingly recognized as significant global health burdens, particularly among young adults exposed to high stress, irregular routines, and limited dietary diversity. Specific Background: Military conscripts face unique physical and psychosocial pressures that may exacerbate FGID risks; however, Central Asian populations, including Uzbekistan, remain underrepresented in FGID epidemiology. Knowledge Gap: No prior standardized, large-scale study has assessed FGID prevalence and psychosomatic correlates among Uzbek military personnel, leaving a void in understanding regional patterns and predictors. Aims: This study aimed to determine the prevalence, subtypes, and psychological correlates of FGIDs among Uzbek conscripts using Rome-based diagnostic tools and the SCL-90R scale. Results: Among 910 participants aged 20–25, FGIDs were present in 19.8%, with functional dyspepsia and irritable bowel syndrome predominating. Somatization and obsessive–compulsive traits emerged as independent predictors, while depression showed a weak inverse relationship. Novelty: This is the first systematic study to map FGID prevalence and psychosomatic predictors in Uzbekistan's conscript population, bridging regional epidemiological gaps. Implications: Findings underscore the necessity of integrating psychological and gastrointestinal screening, stress management, and dietary regulation into military health programs to enhance servicemen's well-being and operational readiness.

Highlight :

1. The study found that **FGIDs affected about 19.8%** of Uzbek conscripts, mainly functional dyspepsia and irritable bowel syndrome.
2. **Somatization and obsessive–compulsive traits** were identified as key psychological predictors of FGIDs.
3. It represents the **first systematic appraisal in Uzbekistan**, highlighting psychosomatic and gut–brain interaction in military settings.

Keywords : Functional Gastrointestinal Disorders, Conscripts, Uzbekistan, Somatization, Psychosomatic Factors

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Introduction

Modern military populations face not only battlefield risks, but also a spectrum of gastrointestinal disorders that impair duty readiness and long-term health. Among these, Functional Gastrointestinal Disorders (FGIDs) characterized by chronic gastrointestinal symptoms without identifiable organic pathology are increasingly recognized as an important health burden globally [1]. FGIDs such as functional dyspepsia (FD) and irritable bowel syndrome (IBS) are understood through the lens of disorders of gut–brain interaction, where neural, psychosocial, microbiome, and immune factors intersect. The adoption of Rome diagnostic criteria (Rome III, IV) has standardized FGID definitions and facilitated cross-population comparisons [2].

Conscripts often endure stressful adaptation, irregular schedules, shared barracks conditions, and dietary constraints, all of which may modulate gastrointestinal function via psychophysiological pathways. International military studies, such as Bang et al.'s investigation in Korean male soldiers, report FGID prevalence around 18–20 % and identify psychological distress (somatization, obsessive-compulsive traits) as key correlates. Similarly, Chinese Air Force personnel exhibited FGID rates up to 23.5 % under Rome III criteria. These findings suggest that conscript environments may amplify FGID risks compared to civilian settings [3].

Despite this, critical gaps remain in the literature. Few studies target Central Asian conscript populations, and even fewer use locally validated versions of Rome IV instruments. Most research is cross-sectional and lacks endoscopic or biomarker verification to exclude organic disease. The interplay of dietary, infection, and microbiome factors in barracks settings remains underexplored. The present study aims to fill this gap by estimating FGID prevalence among Uzbek conscripts, testing psychological predictors using a culturally adapted SCL-90R instrument, and comparing findings to international benchmarks [4].

Methodologically, we conducted a cross-sectional survey among ~900 conscripts aged 20–25 in Uzbek military units, employing a Rome-based questionnaire plus SCL-90R scales. Data were analyzed with nonparametric statistics and multivariate logistic regression to identify independent associations [5]. We anticipate FGID prevalence in the 18–25 % range, with psychological distress (especially somatization and obsessive–compulsive traits) emerging as significant predictors. Overlap syndromes (coexisting FGID subtypes) are expected to comprise a nontrivial share of cases. In light of prior studies, we anticipate close alignment between Uzbek findings and Korean, Chinese military cohorts [6].

By elucidating FGID patterns among Uzbek conscripts, this study aims to contribute to both regional epidemiology and the broader theoretical edifice of gut–brain interactions under military stress. Key implications include guiding screening protocols in conscript health services, informing stress-management or dietary interventions, and motivating longitudinal or biomarker-based follow-up research. Ultimately, these findings may help reduce FGID burden, improve soldier health, and refine theoretical models of functional gastrointestinal disease in extreme environments [7].

Methodology

Objective:

To investigate the prevalence of Functional Gastrointestinal Disorders (FGIDs) and psychological correlates of FGIDs among the young men of the Armed Forces of the Republic of Uzbekistan. A cross-sectional quantitative design guided this research that was conducted during February to June 2024 in three military divisions based in Tashkent, Samarkand and Fergana regions of Uzbekistan. Participants were 910 military servicemen (age 20–25 years) invited to participate; all questionnaires were fully completed. Two instruments were studied: an FGID diagnostic questionnaire based on the Rome III criteria and a psychological assessment scale (Symptom Checklist-90-Revised [SCL-90R]) both of these were translated and culturally adapted into Uzbek using the expert panel and pilot testing [8].

The data were collected through self-administered questionnaires but under the guidance of military medical officers. The questionnaire included gastrointestinal symptoms (related to abdominal pain, bowel habits and functional dyspepsia), and psychological factors (somatization, obsessive-compulsive behavior tendency, and stress-related emotional state). Participants with organic gastrointestinal diseases or serious medical conditions were excluded. The study was approved by the Ethics Committee of the Military Medical Board under the Ministry of Defense of the Republic of Uzbekistan, and written informed consent was obtained from all respondents.

SPSS software version 26.0 was utilized for data analysis. Quantitative variables were reported as median and interquartile ranges, while categorical data were reported as percentages. Mann–Whitney and Fisher's exact tests were used to due to non-normal distribution of variables. In this study, using 2021 Population Census of Uzbekistan, the rates were age adjusted, and independent psychological risk factors for FGIDs were determined using multivariate logistic regression analysis. We used a p-value < 0.05 as threshold of statistical significance. Such a methodological approach could help to provide reliable and the most contextual representations of research outcomes, which allowed the conduct of more comprehensive investigations of the factors associated with the development of FGIDs by taking into account broader psychological range of issues associated with eating habits and lifestyle aspects among young Uzbek servicemen [9].

Findings and Discussion

In our Uzbek conscript sample (n = 910), FGIDs (functional gastrointestinal disorders) were observed in approximately 19.8 % of participants, based on age-adjusted estimates referencing the 2021 Uzbekistan Census. Among those with FGIDs,

functional dyspepsia (FD) comprised ~8.7 %, irritable bowel syndrome (IBS) ~3.4 %, and functional heartburn / chest pain syndromes ~4.2 % (these subtypes may overlap). Overlap syndromes (meeting criteria for two or more FGIDs) appeared in ~5.2 % of the total sample (≈26 % of FGID cases) [10]. The median global SCL-90R score in FGID cases was 28 (IQR 15–49), significantly higher than the 14 (IQR 6–30) in non-FGID conscripts ($p < 0.001$). Among SCL-90R domains, somatization (OR = 1.12, 95% CI 1.04–1.20) and obsessive–compulsive traits (OR = 1.07, 95% CI 1.01–1.13) emerged as independent predictors in multivariate logistic regression, adjusting for BMI, smoking, alcohol use, and age. Depression showed a marginal inverse association (OR = 0.96, 95% CI 0.92–1.00, $p \approx 0.055$), echoing mixed findings in the literature [11].

These Uzbek findings align moderately with the Korean military study, where FGID prevalence was 18.5% (age-adjusted 18.1 %) and somatization and obsessive–compulsive behaviors were independent predictors. Similarly, Bang et al. reported an overall male military FGID prevalence of ~20.4%. In air force personnel in China, FGID prevalence reached 23.5%, reflecting occupational stress, irregular schedules, and diet as contributing factors. The consistency of psychological comorbidity across settings supports the brain–gut model, wherein stress, mood, and cognitive patterns influence gut sensitivity and motility [12].

A comparative summary is shown in Table 1 below:

[Table 1 : is here]

The Uzbek rates fall within the range seen elsewhere, supporting that young male military populations are vulnerable to FGID burdens. Psychological distress (especially somatization and obsessive–compulsive traits) consistently predicts FGIDs across studies, reinforcing psychosomatic and brain–gut theoretical frameworks [13]. The presence of overlap syndromes in ~25–30% of FGID cases further emphasizes the shared mechanisms across symptom domains. The findings also echo broader military evidence that acute gastrointestinal infections / stress exposures (common in deployment or garrison conditions) may set the stage for postinfectious FGID syndromes.

A major limitation remains the lack of objective endoscopic or biomarker confirmation, risking misclassification. Our cross-sectional design precludes causal inference. Furthermore, the use of Rome III–derived instruments (adapted) rather than Rome IV may span a diagnostic gap in contemporary FGID classification. There is scarcely any prior Uzbek or Central Asian military data to validate or benchmark our estimates. Also, the role of dietary patterns (salt, spice, fiber), sleep disruption, infectious exposures (e.g. acute gastroenteritis in barracks), and microbiome factors remain underinvestigated in this conscript context [14].

From a practical standpoint, conscript health services in Uzbekistan could implement brief Rome-based screening plus psychological inventories (e.g. short SCL-based scales) at intake to flag risk. Interventions centering on regularized diet schedules, stress management (e.g. cognitive techniques, relaxation), and prompt treatment of GI infections may reduce FGID burden. For future research, we propose a longitudinal cohort study of Uzbek conscripts with baseline and 6–12 month follow-up to track incidence, remission, and overlap syndrome dynamics. Incorporating Rome IV validated instruments, diet logs, sleep/activity monitors, stool metagenomics, and serologic screening for GI pathogens would help elucidate mediators and moderators of FGID onset in this context. Embedding a randomized stress-reduction or meal-timing intervention arm would allow testing of causal paths. Cross-national collaborations might help standardize measures and allow comparative “benchmarks” within Central Asia. Addressing the knowledge gap in Uzbek/Central Asian military FGID epidemiology could significantly inform tailored preventive and clinical strategies in this underrepresented region [15].

Conclusion

The data on the functional gastrointestinal disorders (FGIDs) among young military personnel are still scanty, the aim was to study the FGIDs of Uzbek conscripts. The study consisted in a questionnaire after Giorgini et al. which deals with issues of epidemiologic characteristics of the FGIDs. Overall FGIDs prevalence was about 19–20%, with functional dyspepsia (FD) and irritable bowel syndrome (IBS) predominant in this group of military personnel, something was unexpected as was a little higher incidence of FGIDs and the FD compared to other countries. The potential of the Uzbekistan Army to be ideal for future study the psychosomatic disorders and ability to emphasize the common necessity to lateralize the treatment protocol of the FGIDs more towards these GI dysfunction. Psychological distress, especially somatization and obsessive-compulsive traits, were shown to be independent risk factors and highlight the close psychosomatic and brain gut connection in this cohort. Our results are consistent with previous studies in Korea and China, whereby gastrointestinal health was negatively affected by the military environment due to stress, strict discipline, irregular diet, and environmental status. The clinical and institutional implications of this study are that providing routine psychological and GI screening, stress reduction programs and dietary regulation in the Classic Uzbekistan military medical services may decrease the FGID morbidity and enhance the military combat capabilities. Nevertheless, our cross-sectional design and lack of endoscopic confirmation are limitations that suggest longitudinal, multi-regional studies using Rome IV diagnostic criteria, microbial validation, and microbiome studies are indicated exploring the pathogenesis and persistence of FGIDs in potential conscripts. Comparative studies between populations from Central Asia could also allow for dichotomization of differences in dietary, stress-response, and health-care patterns to identify protective or detrimental lifestyle factors that might impact the onset and progression of GI disorders in young males.

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