

THE EFFECTIVENESS OF ASSESSING THE QUALITY OF LIFE OF OBESE MILITARY PERSONNEL USING THE SF-36 QUESTIONNAIRE

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ABSTRACT

This study aimed to evaluate the quality of life (QoL) of obese military personnel using the SF-36 questionnaire. A total of 228 participants from diverse military units, including combat, medical, and educational institutions, were assessed across eight health domains. Results revealed significant disparities in QoL scores between obese and non-obese personnel. Combat units exhibited the highest physical (54.3 ± 1.8) and mental (56.2 ± 1.9) health scores, while communication units and educational institutions scored lower. Obese personnel demonstrated notably reduced physical (44.2 ± 1.3) and mental (49.4 ± 1.6) well-being. The findings emphasize the need for targeted health interventions to address obesity-related challenges in military populations.

Key words: Quality of Life; Obesity; Military Personnel; SF-36 Questionnaire; Physical Health; Mental Health; Health Interventions; Military Units.

INTRODUCTION

Obesity poses a significant challenge in military settings, directly affecting physical readiness, operational efficiency, and mental resilience. In high-stress environments typical of military service, obesity may exacerbate the risks of comorbidities (e.g., hypertension, diabetes) and impair task performance. Despite this, the QoL of obese military personnel remains understudied, particularly in the context of variations across unit types. The study's relevance is underscored by the global rise in obesity prevalence, including within military populations, necessitating targeted preventive and rehabilitative programs. The use of the

validated SF-36 tool provides objective data to justify interventions aimed at improving health and enhancing combat readiness. The findings hold practical implications for military healthcare providers, command staff, and health policymakers focused on optimizing service conditions and preserving human resources in armed forces.

Research Objective: The objective of this study was to assess the quality of life (QoL) of obese military personnel using the SF-36 questionnaire and compare their scores with non-obese counterparts. The research aimed to identify disparities in physical and mental health across different military units (combat units, medical institutions, educational institutions) and determine the impact of obesity on functional capabilities and psychological well-being among service members.

Methods: The SF-36 questionnaire was administered to evaluate eight health domains: Physical Functioning (PF), Role Physical (RP), Bodily Pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Emotional (RE), and Mental Health (MH). Each domain is scored from 0 to 100, with higher scores indicating better health. The data were analyzed to compare the QoL of obese military personnel with non-obese personnel and across different military units. A total of 228 military personnel from various categories participated in the survey to assess the quality of life of service members. In analyzing these questionnaires, we first evaluated the overall quality of life of all military personnel who took part in the study (Table 6.1). In the next stage, we deemed it necessary to assess these service members based on their service conditions, examining them in the context of military medical institutions, military higher education institutions, combat units, combined arms units, and communication units. At the final stage, we separately analyzed the quality of life indicators of military personnel suffering from obesity among service members across all groups.

Results: The study involved 228 military personnel from various units, including combat units, military medical institutions, and educational institutions, under different climatic and service conditions. During the assessment of the quality of life of military personnel suffering from obesity, we decided to choose the SF-36 questionnaire, which is considered the most optimal method for assessing the quality of life necessary for our scientific research [8,4]. Typically, standardized questionnaires for assessing health and quality of life are based on creating a profile of population health status and quality of life. The SF-36 questionnaire consists of 36 questions combined into a total of 8 scales and 2 complementary indicators, such as physical and mental health. The SF-36 questionnaire allows for an assessment of quality of life across four domains:

physical health, psychological quality of life, social quality of life, and the state of the environment surrounding a person [3,8,9]. The SF-36 questionnaire presents a mixed description of a person's overall condition and satisfaction with their condition (e.g., vitality, health), an assessment of health-related difficulties, as well as its dynamics, i.e., how much their mental state has changed over the year.

The results revealed significant differences in QoL scores between obese and non-obese military personnel, as well as across different military units. Below are the detailed findings presented in tables and analyzed. It has been found that in general groups of military personnel, quality of life indicators and their physical condition are better compared to the general population.

In specific groups, the highest physical health (PH) scores were observed among the personnel of combat units, averaging 54.3 ± 1.8 points, while the lowest scores were recorded among the personnel of communication units, reaching 48.4 ± 1.4 points.

Regarding mental health (MH), the highest scores were observed in combat units at 56.2 ± 1.9 points, while the lowest scores were 49.1 ± 1.6 points among professors and teachers of military educational institutions, indicating that these indicators should be slightly improved in communication units, military educational institutions, and military medical facilities.

In military personnel suffering from obesity, the integral scores for the physical (PH) and mental (MH) components were 44.2 ± 1.3 points and 49.4 ± 1.6 points respectively, indicating that these military personnel had limited physical activity and a relatively low level of mental well-being.

Conclusions. The study highlights the significant impact of obesity on the quality of life of military personnel. While overall QoL scores are relatively high, obese personnel face substantial physical and mental health challenges. Combat units, despite their physically demanding roles, maintain high QoL scores, likely due to their rigorous training and physical fitness. In contrast, military educational and communication units, as well as obese personnel, require targeted interventions to improve their health outcomes.

The SF-36 questionnaire (Short Form-36) is an internationally recognized tool used to assess various factors affecting quality of life [10,9]. The use of this questionnaire in military personnel suffering from obesity allows for the determination of the influence of obesity on their physical and mental health [3]. The SF-36 questionnaire, the Medical Outcomes Study Short-Form 36 (SF-36), consists of standardized questions commonly used among the population to study quality of life, with scores for each question taken into account in the questionnaire and analyzed separately on each scale [1,2].

Specifically, the 36 questions of the special questionnaire, in turn, were summarized into eight scales, which included indicators such as physical activity, role-playing activity, physical pain, general health, survival, emotional state, and mental health. The scores on the scales range from 0 to 100, with 100 indicating a state of complete health [5,6]. These scales shape mental and physical well-being, and the results of the survey are calculated in points on 8 scales. The higher the total number of points collected based on the questionnaire, the higher the quality of a person's life [8,9,10].

Table 1.

Overall Quality of Life Scores for All Military Personnel (n=228)

SF-36 Scale Components	Average Score (M)
Physical Functioning (PF)	84.1 ± 3.0
Role Physical (RP)	80.9 ± 2.7
Bodily Pain (BP)	87.3 ± 3.1
General Health (GH)	66.6 ± 2.2
Vitality (VT)	79.8 ± 2.7
Social Functioning (SF)	83.4 ± 2.9
Role Emotional (RE)	79.5 ± 2.6
Mental Health (MH)	81.4 ± 2.8
Physical Component (PH)	50.4 ± 1.6
Mental Component (MH)	52.9 ± 1.8

The overall QoL scores for military personnel were relatively high, with Physical Functioning (PF) and Bodily Pain (BP) scoring the highest at 84.1 and 87.3, respectively. However, General Health (GH) scored lower at 66.6, indicating potential health risks. The Physical Component (PH) and Mental Component (MH) scores were 50.4 and 52.9, respectively, suggesting that while physical health is relatively good, there is room for improvement in mental health (Table 1).

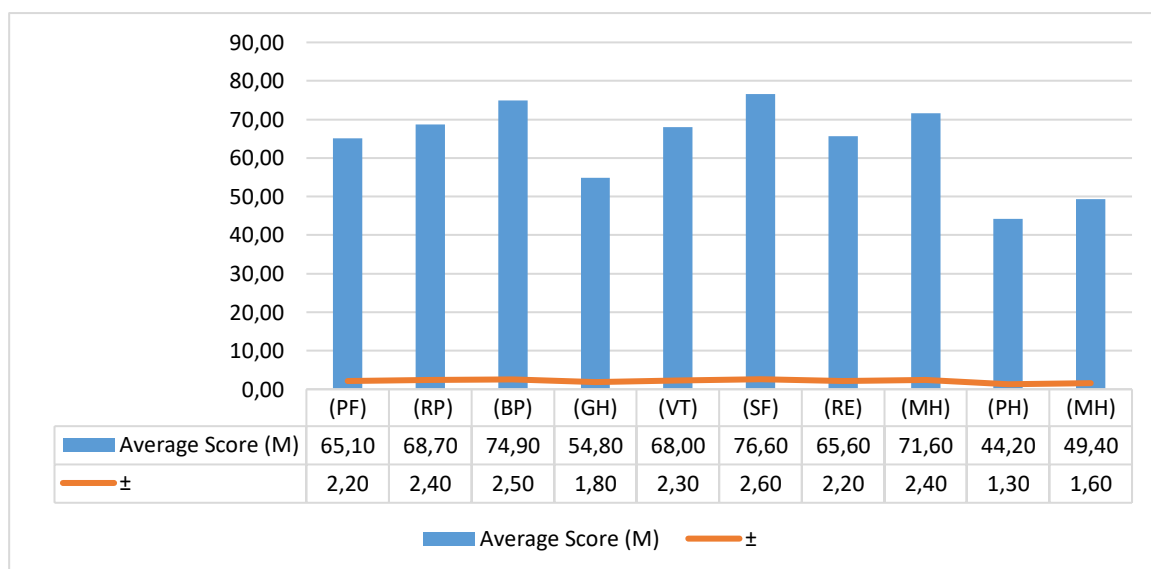
Combat units consistently scored the highest across all domains, particularly in Physical Functioning (PF) at 92.0 and Bodily Pain (BP) at 96.8, indicating minimal physical limitations and pain. In contrast, military educational institutions scored the lowest in General Health (GH) at 53.6, suggesting higher stress and health-related issues. Communication units also showed lower Physical Functioning (PF) scores at 77.8, likely due to less physically demanding roles.

Table 2.
Quality of Life Scores by Different Military Groups (n=228)

SF-36 Scale Components	Military Medical Institutions	Military Educational Institutions	Combat Units	General Military Units	Communication Units
PF	82.0 ± 2.9	81.2 ± 2.8	92.0 ± 3.1	81.5 ± 2.8	77.8 ± 2.4
RP	75.5 ± 2.4	77.0 ± 2.6	83.2 ± 2.6	80.4 ± 2.7	87.1 ± 3.0
BP	81.4 ± 2.8	84.8 ± 2.9	96.8 ± 3.3	83.0 ± 2.9	85.4 ± 2.9
GH	64.3 ± 2.1	53.6 ± 1.7	84.8 ± 2.8	58.4 ± 1.9	57.0 ± 1.8
VT	71.4 ± 2.3	69.6 ± 2.3	90.2 ± 3.1	79.7 ± 2.5	78.1 ± 2.5
SF	78.5 ± 2.6	82.0 ± 2.7	86.5 ± 3.0	85.0 ± 2.9	82.5 ± 2.8
RE	79.7 ± 2.7	73.3 ± 2.5	85.5 ± 2.9	73.9 ± 2.4	80.9 ± 2.7
MH	75.5 ± 2.5	72.8 ± 2.4	90.5 ± 3.0	80.3 ± 2.6	79.6 ± 2.6
PH	49.1 ± 1.5	48.7 ± 1.4	54.3 ± 1.8	48.8 ± 1.5	48.4 ± 1.4
MH	50.7 ± 1.6	49.1 ± 1.6	56.2 ± 1.9	52.4 ± 1.7	53.1 ± 1.8

Obese military personnel exhibited significantly lower QoL scores compared to the general military population. Physical Functioning (PF) was notably lower at 65.1, indicating reduced physical capabilities due to obesity. General Health (GH) scored the lowest at 54.8, reflecting higher risks of obesity-related conditions such as hypertension and diabetes. Mental Health (MH) was also lower at 71.6, suggesting psychological impacts such as stress and low self-esteem.

Figure 1.
Quality of Life Scores for Obese Military Personnel (n=68)



The general health indicators (GH - General Health) of military personnel suffering from obesity are 54.8 ± 1.8 points, which indicates a low level of these indicators and the presence of a risk of obesity-related diseases (hypertension, diabetes, blood pressure).

Conclusions.

1. The study highlights the significant impact of obesity on the quality of life of military personnel. While overall QoL scores are relatively high, obese personnel face substantial physical and mental health challenges. Combat units, despite their physically demanding roles, maintain high QoL scores, likely due to their rigorous training and physical fitness. In contrast, military educational and communication units, as well as obese personnel, require targeted interventions to improve their health outcomes.

2. It has been found that in general groups of military personnel, quality of life indicators and their physical condition are better compared to the general population.

3. In specific groups, the highest physical health (PH) scores were observed among the personnel of combat units, averaging 54.3 ± 1.8 points, while the lowest scores were recorded among the personnel of communication units, reaching 48.4 ± 1.4 points.

4. Regarding mental health (MH), the highest scores were observed in combat units at 56.2 ± 1.9 points, while the lowest scores were 49.1 ± 1.6 points among professors and teachers of military educational institutions, indicating that these indicators should be slightly improved in communication units, military educational institutions, and military medical facilities.

5. In military personnel suffering from obesity, the integral scores for the physical (PH) and mental (MH) components were 44.2 ± 1.3 points and 49.4 ± 1.6 points respectively, indicating that these military personnel had limited physical activity and a relatively low level of mental well-being.

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