SELF-ESTEEM IN MEDICAL STUDENTS

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ABSTRACT

The notion of self-esteem is remarkably prominent in the modern era. The aim was to assess the level of self-esteem by Rosenberg's scale amongst medical students of the Tbilisi State Medical University. A cross-sectional study was conducted. The study was anonymous and participation was voluntary. Cluster random sampling was used. The number of participants was 223 (70% female, mean age 22.5±1.25). Data were collected via Google Forms and analyzed in Stata 14.0. The mean self-esteem score was 26.4 (95% CI 25.7-27.1), indicating a satisfactory level with no significant gender or faculty differences. Higher self-esteem correlated with positive body image, supportive family relations, hobbies, and academic satisfaction, whereas lower self-esteem was linked to obesity, depressive symptoms, poor parent relations, and low physical activity. Cronbach's alpha 0.87 confirmed internal consistency. Findings highlight the multifactorial nature of self-esteem among medical students and suggest that promoting healthy lifestyles and social support could enhance emotional well-being.

Keywords: Self-esteem, Rosenberg Scale, medical students, Georgia, students

INTRODUCTION

The concept of self-esteem is prevalent in our current culture. High self-esteem is often associated with success across various domains, including education, sports, and music. Fostering high self-esteem and mitigating low self-esteem are crucial societal goals that necessitate comprehensive interventions to shape life outcomes effectively (Orth, U. et al., 2014). Self-esteem is intricately connected to an individual's perception, emotions, and self-worth. Although one's self-evaluation may vary daily due to different experiences and accomplishments, self-esteem serves as a stable measure of overall self-perception, whether positive or negative. Those who maintain a positive self-identity generally exhibit high self-

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esteem, whereas individuals with a negative self-view tend to experience low self-esteem (Park, J. Y. et al., 2019).

Adolescence stands as a pivotal stage of development and well-being, influenced by emotional, social, and physiological factors (Call, K. T., et al., 2024). Research studies reveal that adolescence commences with puberty and culminates upon the attainment of physical maturity, signaling the onset of adulthood (Call, K. T., et al., 2024; Videra-García, A., et al., 2013; Balsalobre, F. J. B. et al., 2012; Rizo-Baeza, M. M. et al., 2014). It is during this transformative period that the journey of self-determination begins. Research underscores the complex interplay between adolescents and societal, economic, demographic, and educational factors. Social dynamics include familial relationships, sibling count, obesity, and parental education level, while economic factors include household income and place of residence. Demographic factors involve age, body mass index (BMI), whereas educational aspects focus on academic performance (Khalaf A. et al., 2015; Pelegrini A. et al., 2014; Latiff A. A., et al., 2018). Obesity is highlighted across various studies as a significant contributor to body image perception, exerting a substantial influence on the development of self-esteem. Social values significantly impact self-esteem, particularly concerning body image. Young individuals often give considerable importance to body shape, influenced by societal ideals that promote the pursuit of perfection, stimulating negative perceptions of one's body and contributing to low self-esteem (Koronczai B. et al., 2013; Borges G. et al., 2010; Radwan H. et al., 2019).

Satisfaction with one's own life correlates with reduced illness rates, increased happiness, and enhanced emotional well-being. Students attaining high self-esteem demonstrate greater involvement in academic pursuits compared to those with lower self-esteem (Nguyen, D. T. et al., 2019). Empathy is progressively recognized as vital component for cultivating positive patient interactions among medical students and emerges as a crucial element of communication skills (Winefield H. R., et al., 2000; Veloski J.J. et al., 2005; Loh K.Y. et al., 2008; Hojat M. et al., 2013). High self-esteem equips individuals to effectively manage stress, alleviate anxiety, and build communication abilities (Kirkpatrick L. A et al., 2006; Edwards D. et al., 2010). Conversely, low self-esteem contributes to various illnesses, ultimately compromising both quality of life and health outcomes.

One such illness is depression, a prevalent mental health disorder among adolescents that significantly impacts their well-being. Remarkably, self-esteem emerges as a critical factor associated with adolescent depression, aggravating its severity (Nguyen D. T. et al., 2019; Fiorilli C. et al., 2019; Yaacob S. N. et al., 2009; Sahril N. et al., 2019). Low self-esteem frequently contributes to depression, as evidenced by multiple studies. Research indicates that smokers often exhibit low self-esteem and lack effective coping mechanisms (Karimy M. et al., 2013; Singh T. 2016). A positive correlation exists between low self-esteem and drug use among school-aged children (Wu C. S. et al., 2014), potentially rooting from issues such as poor school reputation and reduced peer acceptance (Mayhew K. P. et al., 2000) and results in higher stress levels and lower academic performance (Jirdehi M. M. et al., 2018). Individuals

with low self-esteem are more susceptible to altering their behaviors under peer pressure. They often report higher rates of alcohol, cigarette, and marijuana consumption, along with an elevated risk of suicide compared to individuals with high self-esteem.(Park K. et al., 2017)

The Rosenberg Self-Esteem Scale (RSES) stands as the most widely used instrument for assessing self-esteem. This one-dimensional tool centers on an individual's perception of their self-worth. Comprising ten questions, respondents rate their agreement on a scale from "0=strongly disagree", "1=disagree," "2=agree," and "3=strongly agree." Self-esteem is measured by totaling the scores for all ten questions, yielding a range from 0 to 30 (or 10 to 40), where higher scores signify elevated self-esteem. Those with scores below 15 (or 25) are categorized as having low self-esteem. The RSES acquires widespread recognition and validity, with a Cronbach's alpha coefficient of 0.86 (Tinakon W. et al., 2012). Tbilisi State Medical University has students of various cultural backgrounds as it hosts Georgian and foreign students. The aim of the study was to analyze the level of self-esteem and to identify any significant disparities based on gender and faculty among medical students at Tbilisi State Medical University.

MATERIALS AND METHODS

A cross-sectional study was conducted to assess the students' self-esteem at the Tbilisi State Medical University (TSMU), Georgia. A specially designed questionnaire was used. It consisted of 38 questions, which included demographic data, lifestyle, health status, professional choice, and Rosenberg's questionnaire (10 questions). At the beginning of the questionnaire, the purpose of the study was stated. The questionnaire was prepared in two languages because both Georgian and English-speaking students were included in the survey (Attachment 1). The questionnaire was approved by the Department of Epidemiology and Biostatistics. The study was anonymous and participation was voluntary.

Sampling frame consisted of students of 3 faculties (Faculty of Medicine (years 4-6), International (English-language) Faculty of Medicine (years 4-6), and Faculty of Public Health (years 2-4)) of the TSMU. Random cluster sampling was used with confidence interval/margin of error 10 and confidence level 95%. All members of the randomly selected groups were included into the study. As the survey was perfomed online, even the students missing that day from the class were able to fill out remotely. The number of participants was 223; 156 (70.0%) were female and 67 (30.0%) were male. The student's ages varied between 19 and 26, and the mean age was 22.5 (SD 1.25). The group comprised of 83 International students pursuing Medicine, 108 from the Georgian Faculty of Medicine, and 32 from the Faculty of Public Health and Management.

The assessment was performed using the Rosenberg scale (10 to 40 points). The data was collected using Google Forms and analyzed statistically in Stata 14.0. Associations between

self-esteem items (Rosenberg Self-Esteem Scale, v29-v38) and other ordinal variables were examined using Spearman's rank correlation coefficient. This nonparametric method was selected because most questionnaire responses were ordinal or non-normally distributed. For nominal variables, appropriate categorical comparisons (chi-square or Kruskal-Wallis tests) were applied. Regression analyses were done to see for effect of the explanatory variables on the self-esteem rate. Cronbach's alpha was used to measure internal validity.

RESULTS

The representations (Figure 1-10) are evaluated on the responses by 93 students from international students and 132 responses from Georgian students.

It was observed that a substantial majority of the participants from both academic departments (61%) expressed satisfaction with their present identity (Figure 1). A significant proportion of the participants overall (61.7%) expressed disagreement when queried about their perception of their lack of competence. The data revealed a higher proportion of Georgian students (45.4%) expressing a sense of inadequacy in comparison to international students (31.3%). (Figure 2)

A vast majority of respondents (85.6%) unanimously acknowledged having several commendable attributes. 15% of the participants expressed a sense of lack of positive attributes. (Figure 3) The majority of the respondents (75.8%) agreed when asked if they can accomplish things as well as most other people. The analysis shows a slightly greater number of Georgian students (30%) opposing it compared to international students (18.3%). (Figure 4) When queried about their views indicating they do not have much to be proud of, the majority of the Georgian students (61%) agreed. Nevertheless, there were equal results observed for international students; 51% of respondents disagreed with the statement and 49% agreed with it. (Figure 5) When questioned about feeling worthless at times, most International students (70%) disapproved however there was equal agreement (50%) and disagreement (50%) shown among Georgian students. (Figure 6) The majority of respondents (77.4%) responded positively when questioned on opinion if they believe that they are a person of worth, at least on an equal level with others. (Figure 7) When asked if they wished they could have more regard for themselves, fewer international students (72%) expressed disagreement than Georgian students (81.6%). Overall majority of the respondents (76.8%) disagreed with the statement. (Figure 8) The majority of the participants (72.8%) overall agreed to the question when asked if they are predisposed to believe that they are a failure. Merely 27.2% of individuals disagreed with the assertion. (Figure 9) However, there was a favorable response (70.2%) altogether when asked if they adopt a positive attitude toward themselves. (Figure 10)

Figure 1

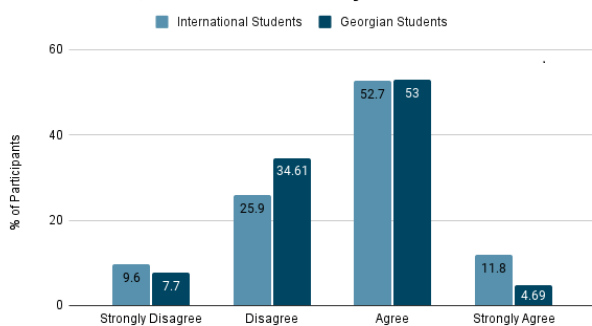**On the whole, I am satisfied with myself.**

International Students — Georgian Students

	Strongly Disagree	Disagree	Agree	Strongly Agree
International Students	9.6	25.9	52.7	11.8
Georgian Students	7.7	34.61	53	4.69

% of Participants

Figure 2

At times I think I am no good at all.

International Students — Georgian Students

	Strongly Disagree	Disagree	Agree	Strongly Agree
International Students	24.7	44.1	20.5	10.7
Georgian Students	12.3	42.3	33.9	11.5

% of Participants
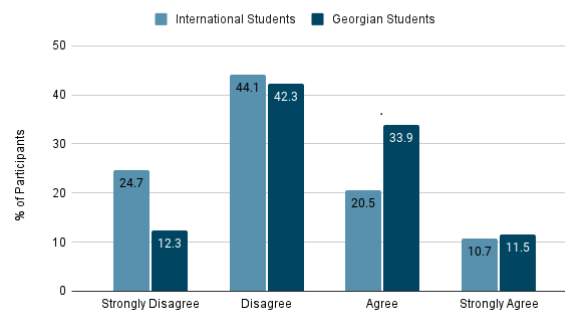
Figure 3

I feel that I have a number of good qualities

International Students — Georgian Students

	Strongly Disagree	Disagree	Agree	Strongly Agree
International Students	3.2	11.8	63.5	21.5
Georgian Students	0	13.8	65.4	20.8

% of. Participants
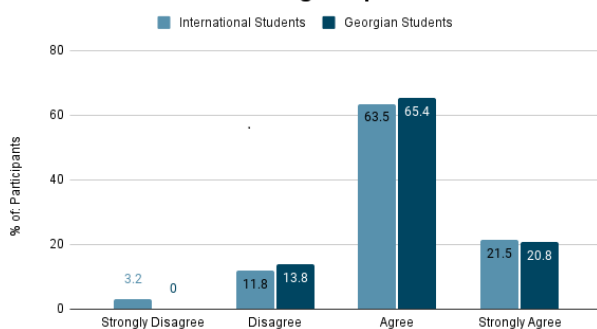
Figure 4

I am able to do things as well as most other people.

International Students — Georgian Students

	Strongly Disagree	Disagree	Agree	Strongly Agree
International Students	1.1	17.2	65.6	16.1
Georgian Students	3.8	26.2	57.7	12.3

% of Participants
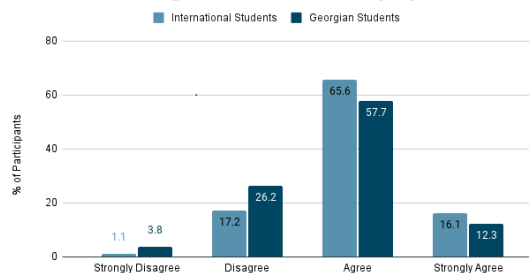
Figure 5

I feel I do not have much to be proud of

International Students — Georgian Students

	Strongly Disagree	Disagree	Agree	Strongly Agree
International Students	11.8	39.8	32.2	16.2
Georgian Students	3.8	32.3	49.3	14.6

% of Participants
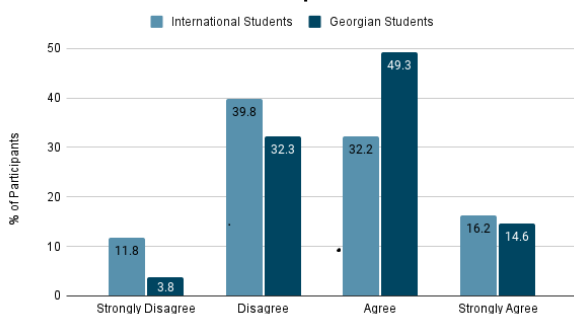
Figure 6

I certainly feel useless at times.

International Students — Georgian Students

	Strongly Disagree	Disagree	Agree	Strongly Agree
International Students	20.4	51.6	17.2	10.8
Georgian Students	13.1	36.9	40	10

% of Participants

Figure 7

I feel that I am a person of worth, at least on an equal plane with others

Figure 8

I wish I could have more respect for myself.

Figure 9

All in all, I am inclined to feel that I am a failure.
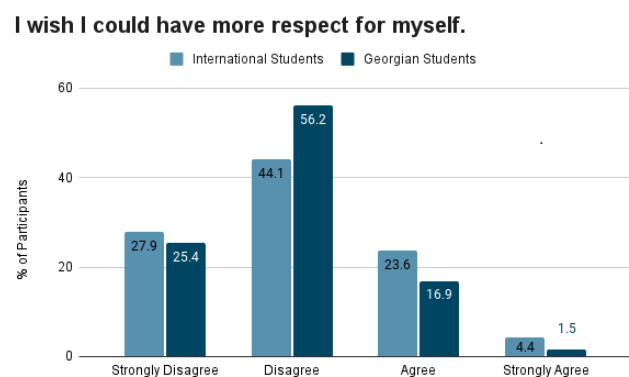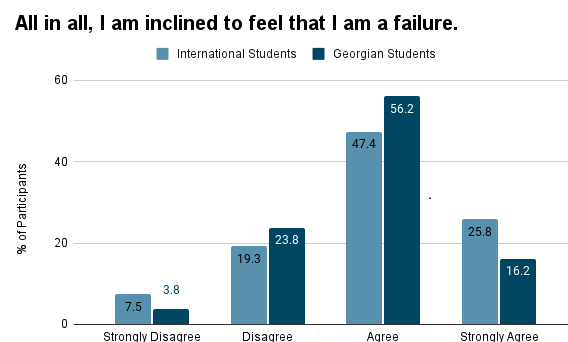
Figure 10

I take a positive attitude toward myself.
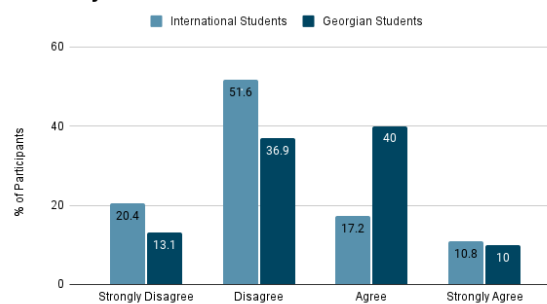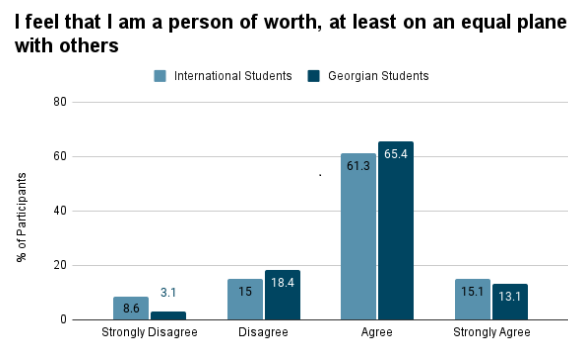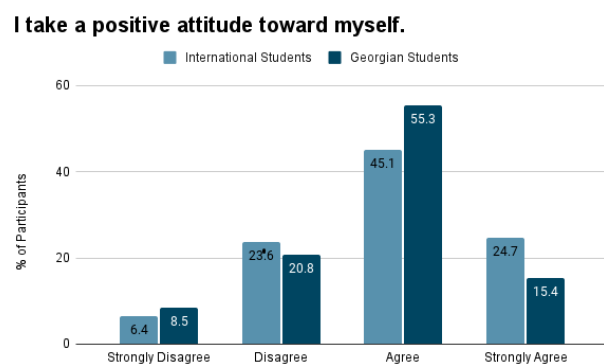
Correlation analysis revealed several significant relationships between the **Rosenberg Self-Esteem Scale items (v29–v38)** and other psychosocial, behavioral, and lifestyle factors. The overall self-esteem score (*totalv*) and the item *"On the whole, I am satisfied with myself" (v29)* showed the strongest associations. Higher self-esteem correlated positively with a favorable self-image ($r_s=0.31$, $p<0.001$), indicating that students who perceived themselves as looking good also reported higher satisfaction with themselves. Conversely, lower self-esteem was significantly associated with self-reported obesity ($r_s=-0.28$, $p<0.001$), depressive symptoms ($r_s=-0.28$, $p<0.001$), and dissatisfaction with one's appearance or weight ($r_s=-0.22$, $p=0.001$). Poorer relationships with parents ($r_s=-0.21$, $p=0.001$), frequent headaches and other psychosomatic complaints ($r_s \approx -0.20$, $p=0.002$), lower levels of physical activity ($r_s=-0.19$, $p=0.004$), and weaker academic performance ($r_s=-0.16$, $p=0.017$) were also associated with diminished self-esteem. In contrast, having personal hobbies was modestly but positively correlated with higher self-esteem ($r_s=0.15$, $p=0.023$).

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The average indicator of self-esteem measured by Rosenberg's scale for this study was 26.4, with a 95% confidence interval range in between 25.70-27.08, which indicates a satisfactory level of self-esteem within the medical students with a 3-point evaluation system. The indicator is similar according to gender and faculties: the average outcome in women is 26.5 (CI=25.70-27.32), whereas it was 26.1 (CI=24.82-27.44) in men. The average data according to the faculties were distributed as follows: In the International Faculty of Medicine, it was 26.6 (CI=25.39-27.83), in the Georgian Faculty of Medicine, it was 26.0 (CI=25.01-26.98), and in the Georgian Public Health, it was 27.1 (CI=25.01-28.63). There were no statistically significant differences by gender and faculty.

Explanatory variables were age, gender, faculty, academic performance, family status, BMI, smoking status, alcohol intake, employment status, and chronic diseases. For all of them, R^2 was less than 0.1. R^2 was equal to 0.1433 for subjective assessment of being overweight, SES, and satisfaction with chosen profession. All of these explanatory variables were statistically significant. Mean VIF was 1.02.

Cronbach's alpha was equal to 0.87, indicating excellent internal consistency. The **Rosenberg items** correlate highly with each other (all r_s between 0.55-0.75, $p<0.001$), confirming strong **internal consistency** of the self-esteem scale. Negative items (e.g., *"I feel useless at times"*, *"I am inclined to feel that I am a failure"*) correlate **inversely** with positive items (*"I take a positive attitude toward myself"*), as theoretically expected — supporting **construct validity**.

Items indicating **depression, anxiety, irritability, insomnia, or loss of motivation (v21a13-v21a18)** consistently show **negative correlations** with self-esteem ($r_s \approx$ −0.16 to −0.27, $p<0.05$*). This supports the hypothesis that **low self-esteem coexists with mood disturbances** and reduced coping capacity — a common pattern in medical student populations under stress. Interestingly, **drowsiness** and **fatigue** also show significant negative links (weaker, but still present), implying that sleep quality and energy level may mediate the self-esteem-well-being relationship.

Physical inactivity (v5) and **sleep irregularity** (v10) both associate negatively with self-esteem ($r_s \approx$ *−0.18 to −0.20, $p<0.05$*), highlighting that self-perceived well-being is linked with healthier routines. Among medical conditions, **obesity**, **hypertension**, and **chronic fatigue** show the strongest inverse correlations, while conditions like mild allergies or vision problems show none — suggesting self-esteem is more sensitive to **visible or energy-limiting illnesses. Alcohol consumption** and **smoking** habits are largely **uncorrelated**, implying these behaviors may be culturally normalized rather than esteem-driven among your student cohort.

Quality of parental relationship (v14), friendship status (v16), and **marital status (v15)** all show notable associations: students with **supportive family or social ties** report **higher self-esteem**, while those living alone or reporting conflict show lower values. The relationship with **siblings**

(v13) has a smaller but still positive trend ($r_s \approx 0.12$, $p<0.05$), suggesting emotional connectedness extends beyond parents. These results underline the importance of **social belonging** as a protective factor for self-esteem.

Academic performance (v4) and **career satisfaction (v27)** are both **positively correlated** with self-esteem ($r_s \approx 0.15$–0.20, $p<0.05$). Students who clearly know what medical specialty they want (v28) tend to have **higher self-esteem and less self-doubt**, reflecting stronger professional identity and self-efficacy. This dimension might be particularly relevant for **intervention programs** promoting mentoring and career guidance.

No major differences were observed by **gender** or **faculty type**, indicating that within this sample, **psychological and social factors outweigh demographic ones** in predicting self-esteem. Slightly higher self-esteem was found among **students from Tbilisi** compared to those from regions or abroad, but this effect was not statistically robust after adjustment.

DISCUSSION and CONCLUSION

The primary objective of our research was to identify the Rosenberg scale self-esteem levels of Tbilisi State Medical University students. Dahlin et al. (2005) reported that medical students exhibited lower levels of self-esteem and higher prevalence of depression than students in other faculties, with women suffering more commonly than males (Dahlin M. et al., 2005). A recent cross-sectional study conducted in Saudi Arabia indicated that 24.1% of participants expressed poor self-esteem. Female gender and mental disease diagnosis were independently significant indicators of poor self-esteem (Alghamdi S. A. et al., 2023). Based on the results obtained and in comparison with the afore-mentioned foreign sources, this study concludes that by evaluation through Rosenberg's 4-point system, the students of Tbilisi State Medical University regardless of gender or faculty, have a high level of self-esteem which may be due to a variety of factors. A good academic performance was noted from the respondents as 57.4% of had grades between A and B and 20% had a performance between B and C. These findings suggest a positive correlation between self-esteem levels and academic success among the university's student body. Our findings correlate with a cross-sectional study on undergraduate students from the paramedical faculty of Hamedan University of Medical Sciences which indicated a significant positive correlation between students' academic performance and self-esteem ($p \geq 0.01$) (Alipour N. et al., 2024).

The vast majority of respondents acknowledged having several commendable attributes. Individuals who recognize their positive attributes are likely to have a greater sense of self-worth and confidence, contributing to higher levels of self-esteem. Majority of the respondents adopt a positive attitude toward themselves and that suggests a strong association with self-esteem. A positive attitude toward oneself is a key element of self-esteem. When individuals hold positive beliefs about themselves, they are more resilient in the face of challenges, more

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likely to pursue their goals, and better equipped to cope with stressors. This positive self-regard contributes to overall psychological well-being and fosters a sense of confidence and self-assurance.

The finding that most international students disapproved of feeling worthless at times indicates a higher level of self-esteem within this group. However, among Georgian students, there was equal agreement and disagreement regarding feeling worthless at times. This suggests a more mixed perception of self-worth among Georgian students, with some endorsing feelings of worthlessness while others do not. Cultural norms and values may influence attitudes towards self-esteem and worthiness. International students may have stronger social support networks, both within their international student community and back home, which could buffer against feelings of worthlessness and contribute to higher self-esteem. Our findings correlate with a cross-sectional study in China which revealed a negative association between self-esteem and several psychological symptoms, including obsessive-compulsiveness, interpersonal sensitivity, and depression. It was found that low self-esteem exacerbates symptoms of interpersonal sensitivity, which are closely linked to interpersonal relationships and social support (Guo J. et al., 2022).

In our survey, majority of the Georgian students and nearly half of the international students agreed with the statement suggesting they don't have much to be proud of. This finding prompts us to delve deeper into the factors influencing their sense of pride and well-being. Notably, all international students reported that their parents reside outside the country and 42% of Georgian students reported that their parents reside in the region, a circumstance that could contribute to their perceived independence but also to feelings of loneliness and a lack of emotional stability. This raises important questions about the impact of familial support and physical presence on the emotional experiences of international students. It suggests that the absence of parental proximity might shape their sense of pride and emotional well-being, potentially influencing their overall adjustment to student life in a foreign country. These findings are similar to a study which revealed a statistically significant association between positive relationships with family and high self-esteem among university students in northern Thailand (Auttama N. et al., 2021). Moreover, studies suggest that self-esteem plays a dual role, acting as both a mediator and a moderator in the relationship between loneliness and overall life satisfaction in adolescents. Specifically, loneliness is significantly and negatively associated with self-esteem, psychological well-being, and subjective well-being, underscoring the critical role of self-esteem in shaping adolescents' overall life satisfaction and well-being. (Çiçek İ. 2021; Çivitci N. et al., 2009)

Among the students, satisfaction with medicine as their chosen profession varied. While 62.7% students were satisfied, 25% initially liked it but no longer do and 3.5% felt pressured into choosing it by their elders. Satisfaction with one's chosen profession can impact self-esteem, as individuals may derive a sense of fulfillment and purpose from their career. Conversely, individuals who feel pressured into their career choice or experience disillusionment may

struggle with self-esteem issues related to their perceived lack of control or autonomy in their professional lives. Additionally, the demanding and lengthy nature of the medicine course (M.D.) may further compound these challenges, impacting their overall sense of well-being. A minority of the participants also expressed a sense of lack of positive attributes. This subgroup may experience lower self-esteem, as their negative self-perception could lead to feelings of inadequacy and self-doubt. Understanding these factors is essential for providing adequate support and resources to enhance the holistic well-being of the medical students.

The majority of participants agreed that they are predisposed to believe they are a failure. This perception of failure could potentially impact self-esteem, leading individuals to doubt their abilities and worth. Fewer international students expressed disagreement with the idea of wishing they could have more regard for themselves compared to Georgian students. This discrepancy may reflect cultural differences in attitudes toward self-worth and self-esteem. The respondents' opinions on being overweight varied, with a significant portion either overweight (17%) or feeling they have extra weight (24%). A study by Neff and Vonk identified that self-esteem was consistently correlated with higher body satisfaction (Neff K. D. et al., 2009). Hence, body image concerns can significantly affect self-esteem, particularly if individuals perceive themselves as not meeting societal standards of attractiveness. While the majority of participants in our study do not drink excessively or smoke, patterns of substance use can sometimes be associated with coping mechanisms for low self-esteem or underlying mental health issues.

Overall, the findings of this study suggest a complex interplay between various factors such as cultural background, body image, career satisfaction, and substance use, all of which may influence individuals' self-esteem levels. Our findings were in line with the well-known effects of weight-related self-perception, socio-economic status and satisfaction of the chosen career path on the overall self-esteem. Based on the evidence gathered, we have not detected the impact of the cultural differences on the perceived self-esteem as there were no statistically significant differences between faculties. This might be explained by the study limitation of average-size sample. Thus, it might be advisable to study the larger sample in the future. Both Georgian and International Faculty students have an adequate degree of self-esteem. This might be explained by the friendly atmosphere at the TSMU and in Georgia in general, the country being famous for its hospitality.

Our study had some limitations. First of all, we have not seeked the Ethical Approval for the study as it was done by the peer and the reason for the study was explicitly explained personally as well was stated in the questionnaire. The data were self-reported and such findings are always prone to some subjectivism and desirability bias. We were not able to measure potential confounders (e.g., mental health diagnosis, parental attachment, personality traits). The cross-sectional design of the study has not permitted us to infer causality. The sample size was a moderate one and this questions the generalizability of our results.

Overall, obtained results indicate that **self-esteem among medical students is closely related to body image, psychological well-being, and social support**. Students reporting healthy lifestyles, supportive family relations, and positive self-perceptions tend to demonstrate higher self-esteem, whereas those experiencing psychosomatic or emotional difficulties, academic stress, or body dissatisfaction show lower levels of self-worth. Self-esteem is a **multifactorial construct** intertwined with psychological, social, and lifestyle domains. The strongest predictors of **low self-esteem** are *depressive symptoms, obesity, body dissatisfaction, poor parent relations,* and *low academic achievement*. The most protective factors are *positive body image, hobby engagement, social connectedness,* and *clarity about future career path.*

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