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A Holistic Framework Addressing Psychological, Social, and Health Aspects of Drug Use among University Students

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ABSTRACT

This paper examined the psychological, social and nutritional health-related aspects that relate to drug use among higher education students. The study was a descriptive cross-sectional study on 1,055 students in various colleges. The data was obtained by using self-administered questionnaire, which measured demographic, psychological, and social variables and nutritional health indicators in terms of drug use. The study identified living alone as a significant demographic predictor in the multivariate logistic regression analysis. Positive and neutral attitudes towards drug use (OR = 0.044 and OR = 0.324, respectively), as well as protective or irregular behavioral practices (OR = 0.002) were significantly protective, psychologically. There were no significant differences in nutritional health indicators between users and non-users, but 98 % of the entire population sample had indications of mild malnutrition risk. To conclude, the issue of drug use among university students was more of a psychological and social process rather than a physical and nutritional health issue. Prevention plans are supposed to focus on cognitive and behavioral therapies. Even though drug use has not reached the stage of demonstrating any quantifiable physical health impact, the fact that malnutrition risk is high demonstrates that parallel nutrition-based health promotion interventions are necessary.

KEYWORDS
Cognitive–behavioral interventions, community influences, malnutrition risk, preventive strategies, psycho-emotional determinants, substance consumption.

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1. Introduction

The use of drugs by university students is on the increase all over the world, even in conservative societies like Saudi Arabia where the shift to university is characterized by significant social and psychological changes. Academic pressures, career confusion, and emotional stress often combine and compel students to resort to maladaptive coping strategies like taking drugs (Alotibi *et al.,* 2025). In some parts of the country like in Al-Ahsa where family values and religious norms have long shielded against risky behaviors, these barriers are being tested in as much as students are leaving their homes, becoming more independent, and becoming more susceptible to peer pressure. Saudi-based studies indicate that peer pressure is among the most significant predictors of drug consumption, particularly when the students do not have meaningful extracurricular activities, and poor parental supervision and family communication add to the vulnerability (Patrick *et al.,* 2022). In addition to the psychological and social motivators, the use of drugs also leads to the cycle of worsening health: most substances disrupt the balance of appetite, nutrient uptake, and metabolism, causing fatigue, irritability, emotional changes, which further increase dependence and deteriorate academic results (Carvalho and Vilaça, 2024). Synthetic cannabinoids and synthetic cathinones are known as novel psychoactive substances (NPS) and are often sold in the retail stores or through online shops under the misleading names of herbal products, bath salts, or aroma liquids (Kamijo *et al.,* 2016). Despite packaging these substances as not meant to be ingested by humans, they can be smoked or ingested as they have the potential to induce psychoactive effects similar to those of the well-known illegal drugs, such as cannabis-like euphoria and relaxation (Vardakou *et al.,* 2010), amphetamine-like stimulation (Karila *et al.,* 2015), and ketamine/phencyclidine-like hallucinations and dissociative experiences.

The role of nutrition can be described as the key determinant of physical, emotional, and cognitive well-being, and it is of particular importance in the university years when people gain greater autonomy, change their lifestyles, and experience the pressure of academic achievement. Studies have continuously indicated that most students in universities have unhealthy eating habits that include irregular eating, excessive fast-foods and low intake of fruits and vegetables, which may affect immunity, energy and concentration (Al-Hazzaa *et al.,* 2011). Such unhealthy habits cause micronutrient deficiencies, especially in iron, magnesium, and B-vitamins, which are closely linked to increased stress, fatigue, anxiety, and depressive symptoms, which make a person susceptible to substance use (Musaiger *et al.,* 2011; NIDA, 2022). Although substance use does not necessarily cause instant modifications in anthropometric measures, including body mass index (BMI), long-term use of substances has been demonstrated to influence appetite, metabolic processes, and nutrient absorption, which is a two-way relationship in which poor dieting can both cause and contribute to drug-seeking behavior (World Health Organization, 2016); (Carvalho and Vilaça, 2024). Although these related issues are severe, most prevention programs in most of the universities within the area have been limited to punitive actions or basic awareness development as opposed to the real causes of nutritional, psychological and social factors. Such a comprehensive and culturally sensitive intervention is therefore needed, which incorporates mental health services, nutritional education, family and peer involvement, and student-focused interventions. Based on these gaps, the proposed study aims to analyze the psychological, social, and nutritional health aspects of substance use among university students in Al-Ahsa, Saudi Arabia, with a special focus on the role of nutrition and well-being as the major factors that determine vulnerability to substance use.

2. Methods

2.1. Study Design:

This study employed a descriptive cross-sectional design to explore

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the psychological, social, and health-related aspects of drug use among university students.

2.2. Study Setting:

The research was carried out at the King Faisal University and involved the students at the different colleges of the university among undergraduates. The diversity of the student population and the presence of many academic disciplines in the university made it a good environment to compare differences in behavior, mental health, and lifestyle practices among groups of students.

2.3. Study Population:

In this study, undergraduate students of various colleges in the university were recruited. Participants were chosen in both health-related and non-health-related filed; this was done to have a wide and well-rounded perspective. This enabled the comparison of students pursuing different fields and having different academic stresses and conditions. The sampling frame was composed of the current enrolled undergraduate students who were in their studies at the time of data collection.

Undergraduate students in active academic years and bridging programs were used as inclusion criteria. The exclusion criteria were postgraduate students and students who had already passed coursework and entered internship or professional training. Only students in the extended programs (e.g. medicine, pharmacy, dentistry) were included, but they had to be in academic years and they were grouped by their current year of study and not their internship status.

2.4. Sampling Technique:

Participants were recruited from different colleges using random sampling until the required sample size was reached.

2.5. Sample Size:

The sample size was determined by Cochran formula, which was computed on the basis of 95% confidence level, 5% margin of error, and the prevalence of drug use as estimated on published Saudi data (Aljirian *et al.,* 2024). The study was planned to include a final sample of n = 1055 students with the possibility of non-response.

3. Instrument development and validation

The questionnaire was a modified form of an already validated English knowledge, attitudes, and practices (KAP) tool (Lu *et al.,* 2024) that focused on knowledge, attitudes, and practices concerning novel psychoactive substances. The original tool showed great internal consistency (Cronbach alpha: total = 0.941; knowledge = 0.968; attitude = 0.985; practice = 0.963).

Independent bilingual experts translated the instrument into Arabic and then back into English (WHOQOL Group, 1998; Jain *et al.,* 2016). The Arabic version was reviewed by an expert panel (public health, psychology and clinical nutrition) of Saudi Arabia in terms of content validity, clarity and cultural appropriateness. The pilot study used 20 students (out of the main sample) to measure the clarity, understanding, and practicability. There were no additional changes that needed to be made. Since in this study, cross-cultural adaptation was considered and not scale development, internal consistency was not re-established. The survey was also conducted in Arabic in order to eliminate language bias.

3.1. Data Collection Tool:

There was using a structured online questionnaire, which was self-administered (Google Forms) and included 45 questions. It comprises five sections:

Demographics: Age, gender, marital status, academic year, GPA, college, living situation, and financial status.

Psychological Factors: Stress, anxiety, emotional well-being, and coping strategies (Likert-scale).

Social Factors: Peer pressure, family support, parental involvement, and community participation.

Nutritional Health Assessment: BMI based on weight and height, usual body weight (UBW) as a measure of nutritional risk, and questions as to appetite, meal frequency, and weight changes.

3.2. KAP about Drug Use:

Knowledge: 10 questions (score range: 0–31)

Attitudes: 10 Likert-scale (score range: 10–50).

Practices: 8 behavior-related items (score range: 10–50).

Any score of 70% or more as per the original KAP scoring framework was deemed to indicate sufficient knowledge, positive attitudes and safe practices (Lu *et al.,* 2025).

3.3. Data Collection Process:

The purpose of the study was explained to all the students, and the study participation was voluntary and anonymous. The first page of the online survey contained electronic informed consent. The mean time completion took was about 10-15 minutes. One email submission setting was used to prevent duplication of response.

3.4. Data Analysis:

Statistical analysis in this study was done with the IBM SPSS version 26. The demographics of the participants were summarized by means of descriptive statistics by presenting the categorical variables in terms of frequencies and percentages and means and standard deviations of the continuous variables. Chi-square tests were applied to test the association between categorical variables, and independent t-tests or Mann Whitney U tests were applied to continuous variables, based on the distribution. Binary logistic regression was used to determine predictors of drug usage; it included demographic, psychological, social, and nutritional variables. The results were given as adjusted odds ratios with 95% confidence intervals. The cut-off point was $p < 0.05$. The variance inflation factors were used to evaluate multicollinearity and the listwise deletion was used to treat missing data.

3.5. Ethical Considerations:

The Research Ethics Committee of King Faisal University (KFU-REC-2025-OCT– ETHIC S 3634) approved the study. Respondents were also assured that their answers would be confidential. All the data was collected anonymously and stored safely. Ethical principles were observed during the research process.

4. Results

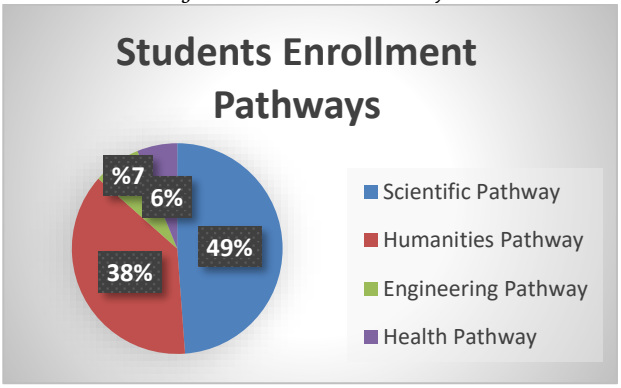
4.1. Demographic Characteristics of Respondents:

A total of 1,055 students participated in the study. Most respondents were aged 17–20 years (58.8%), were female (78.9%), were single (87.6%), and resided with their families (87.9%). Regarding academic standing, second-year students represented the highest proportion (29.4%), and most were enrolled in scientific disciplines (48.8%).

Table 1. Demographic characteristics of participants (N = 1055)

Characteristics	Pathway				Total	
	Health	Scientific	Engineering	Humanities	Frequency	Percentage
Age (Years)						
Age 17–20	48	293	49	230	620	58.8%
Age 21–24	12	203	24	155	394	37.3 %
Age 25+	5	19	4	13	41	3.9%
College year						
First year	31	118	18	120	278	27.2%
Second year	19	157	22	112	310	29.4%
Third year	5	95	20	65	185	17.5%
Fourth year	5	93	4	79	181	17.2%
Fifth year	5	52	13	22	92	8.7%
Marital Status						
Single	63	451	65	345	924	87.6%
Married	2	57	9	50	118	11.2%
Divorced/Widowed	0	7	3	3	13	1.2%
Current residence						
With family	48	452	67	360	927	87.9%
With colleagues	12	41	5	30	88	8.3%
Alone	5	22	5	8	40	3.8%

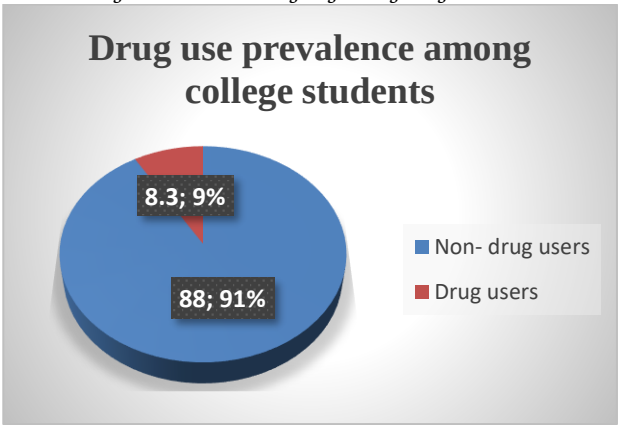
Figure 1. Students' Enrollment Pathways



4.2. Drug Use Prevalence Among College Students at Al-Ahsa:

The prevalence of drug use among the respondents was presented in Fig. 2. Respondents were classified as drug users if they reported "agree" or "strongly agree" to at least one practice item (Q39–45), indicating intentional NPS use in any context (social, solitary, academic, sexual, or psychological coping). The results showed that 8.3% (n = 88) were drug users. In contrast, 91.7% (n = 967) were non-drug users. This represents a relatively low but concerning rate of substance use among the student population.

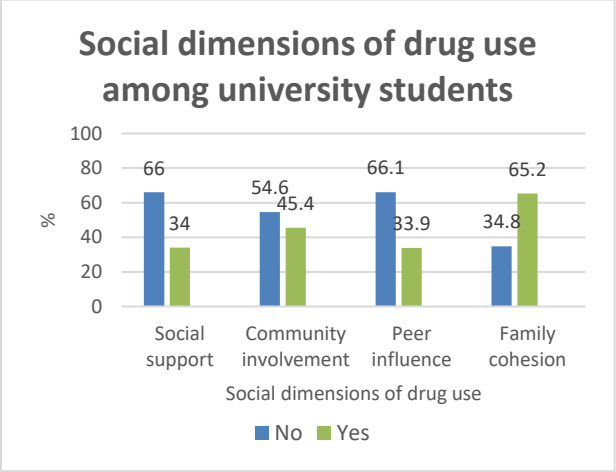
Figure 2. Prevalence of Drug Usage Among College Students



4.3. Social Dimensions of Drug Use Among College Students:

Fig. 3 shows the distribution of the respondents based on the social aspects of drug use. It can be concluded that the majority of the respondents lack social support (66.0%), community activities (54.6%), and peer support (66.1%), and most of the respondents have family cohesion (65.2%).

Figure 3. Distribution of the Respondents (%) According to Social Dimensions of Drug Use



4.4. Psychological Dimensions of Drug Use Among College Students:

Table 2 shows how the respondents were distributed based on their psychological dimensions which were related to the use of drugs. Most of the respondents (78.8%) were found to have little knowledge about novel psychoactive substances (NPS), with (16.8%) having a moderate level of knowledge about NPS, and only (4.4%) having high knowledge of NPS.

Regarding attitudes towards NPS, more than half of the respondents (53.7%) had positive attitude, then (33.3%) had a neutral attitude and (13%) had a negative attitude.

On the issue of NPS practices, the results showed that (68.1%) of the respondents had practiced protective or healthy practices. Conversely, (22.3%) had inconsistent or irregular practices and (9.6%) had admitted to unhealthy or risky behaviors related to the use of NPS.

Table 2. Distribution of respondents according to their psychological dimensions of drug use (N = 1055)

Dimension	Category	Frequency	Percentage (%)
Knowledge	Low	831	78.8
	Medium	178	16.8
	High	46	4.4
Attitude	Negative	137	13.0
	Neutral	351	33.3
	Positive	567	53.7
Practices	Unhealthy/Dangerous	101	9.6
	Oscillatory/Irregular	236	22.3
	Protective/Healthy	718	68.1

4.5. Nutritional Health and Its Dimensions of Drug Use Among College Students:

Table 3 shows a proportion of the respondents by the nutritional health-related dimensions of drug use. According to the BMI measurements, over fifty percent (55.7%) of the respondents were of normal weight. Regarding the percentage of UBW, it was found that (98 %) of the respondents had mild risk of malnutrition. Also, (58.7 %) of the respondents were facing the risk of malnutrition as an indication of a concerning trend in the nutritional health of the sampled population.

Table 3. Distribution of respondents according to nutritional health dimensions of drug use (N = 1055)

Health Dimension and Category	Frequency	Percentage (%)
Body Mass Index		
Underweight	208	19.7
Normal Weight	587	55.7
Overweight	171	16.2
Obesity	53	5.0
Moderate Obesity	22	2.1
Extreme Obesity	14	1.3
Usual Body Weight		
Mild Malnutrition risk	1,034	98.0
Moderate Malnutrition risk	16	1.5
Severe Malnutrition risk	5	0.5
Malnutrition risk screening tool (MST)		
Not at Risk of Malnutrition	436	41.3
At Risk of Malnutrition	619	58.7

4.6. Demographic Predictors of Drug Use:

Table 4 presents the results of logistic regression analysis examining the influence of demographic variables on drug use among university students. The multivariable analysis revealed two statistically significant predictors.

Table 4. Binary logistic regression results for the respondents' demographic characteristics influencing drug use.

Variable	Univariable OR (95% CI)	p-value	Multivariable OR (95% CI)	p-value
Age				
17–20 (Ref.)				
21–24	0.833 (0.520–1.332)	0.445		
25 and above	1.456 (0.548–3.864)	0.541		
College Year				
First Year (Ref.)				
Second Year	1.115 (0.645–1.929)	0.696		
Third Year	0.635 (0.306–1.318)	0.222		
Fourth Year	0.907 (0.467–1.763)	0.774		
Fifth Year	0.577 (0.215–1.549)	0.577		
Current Residence				
With Family (Ref.)				
With Colleagues	1.749 (0.889–3.442)	0.106	1.750 (0.883–3.471)	0.109
Alone	2.597 (1.109–6.083)	0.028	2.706 (1.140–6.420)	0.024
Study Pathway				
Scientific (Ref.)				
Humanities	1.686 (1.039–2.738)	0.035	1.751 (1.075–2.853)	0.024
Engineering	1.998 (0.914–4.366)	0.083	1.969 (0.896–4.324)	0.092
Health	1.822 (0.769–4.313)	0.173	1.640 (0.685–3.925)	0.267

4.7. Influence of Social Factors on Drug Use Among University Students:

To carry out an investigation on how social factors impact drug use among the university students, a logistic regression analysis was used. Living with family and peer influence were not found to be statistically significant predictors of drug use by the multivariate analysis.

4.8. Psychological Predictors of Drug Use:

Table 5 presents the logistic regression analysis of psychological predictors of drug use among university students. The multivariable model identified attitudes and behavioral practices as statistically significant predictors. Students with a neutral attitude toward drug use had (68%) lower odds of drug use compared to those with a negative attitude (OR = 0.324, 95% CI: 0.119–0.879, p = 0.027), while those with a positive attitude had (96%) lower odds (OR = 0.044, 95% CI: 0.004–0.457, p = 0.009). Regarding behavioral practices, students exhibiting oscillatory or irregular behaviors (OR = 0.002, 95% CI: 0.000–0.011) and those engaging in protective or healthy practices (OR = 0.002, 95% CI: 0.000–0.011) had significantly lower odds of drug use compared to those engaged in unhealthy or high-risk behaviors (p < 0.001 for both comparisons).

Table 5. Univariable and Multivariable Logistic Regression Analysis of Psychological Predictors of Drug Use (N = 1055)

Psychological Variable	Univariable OR (95% CI)	p-value	Multivariable OR (95% CI)	p-value
Knowledge				
Low (Ref.)				
Medium	0.419 (0.190–0.925)	0.031	0.833 (0.157–4.421)	0.831
High	1.836 (0.793–4.250)	0.156	7.134 (0.835–60.942)	0.073
Attitude				
Negative (Ref.)				
Neutral	0.074 (0.043–0.128)	<0.001	0.324 (0.119–0.879)	0.027
Positive	0.002 (0.000–0.014)	<0.001	0.044 (0.004–0.457)	0.009
Practices				
Unhealthy/Dangerous (Ref.)				
Oscillatory/Irregular	0.002 (0.000–0.008)	<0.001	0.002 (0.000–0.011)	<0.001
Protective/Healthy	0.001 (0.000–0.002)	<0.001	0.002 (0.000–0.011)	<0.001

4.9. Comparison of Health Dimensions Between Drug Users and Non-Users:

Results of Mann–Whitney U test applied to analyze the differences in three health-related measures, BMI, percentage of UBW, and malnutrition risk (MST scores) of drug users and non-drug users were provided in Table 6. The comparison showed that in all the health indicators, there were no statistically significant differences between the two groups. In particular, the comparison of BMI found Z = 0.760, p = 0.447, the percentage of usual body weight found Z = 0.052, p = 0.958 and the malnutrition risk based on MST scores found Z = 1.309, p = 0.190. Such results indicate that despite the commonness of nutritional risks among the larger student population, it does not play a major role in differentiating students who use drugs and those who abstain.

Table 6. Mann–Whitney U Test Results Comparing Nutritional Health Dimensions Between Drug Users and Non-Drug Users (N = 1055)

Health Dimension	Group	Mean Rank	Z-Value	p-value
BMI	Drug Users	530.15	0.760	0.447
	Non-Drug Users	504.37		
%Usual Body Weight	Drug Users	528.14	0.052	0.958
	Non-Drug Users	526.45		
MST	Drug Users	524.40	1.309	0.190
	Non-Drug Users	567.52		

5. Discussion

This paper examined the psychological, social and nutritional health-related determinants influencing the use of drugs among students at the university in Al-Ahsa, Saudi Arabia. The results of the multivariate analyses had offered a more detailed insight into the role of attitudes, living conditions, social networks, and academic settings to explain the drug use behavior. These insights are crucial to establish of a culturally contextualized and evidence-based prevention framework.

5.1. Psychological Factors Influencing Drug Use:

According to the study findings, there was a strong relationship between the psychological domain and the use of drugs especially in terms of attitudes and behavioral practices. Students who had positive or neutral attitudes towards drug use were much less likely to use substances, indicating that cognitive orientation is a decisive factor of behavior. This was aligned with the Theory of Planned Behavior (1991) that Ajzen postulates that behavior is determined by intention, which is in turn determined by attitude, perceived behavioral control and subjective norms (Ajzen, 1991). The existing results matched with the reasons of AlMarri and Oei (2009) who concluded that permissive or fatalistic beliefs were correlated with a higher use of substances and the significance of attitude-shaping interventions in prevention programs. Moreover, the students with the oscillatory or protective types of behavioral practices were much less likely to use drugs. These results support the value of encouraging positive behavioral practices despite their uneven implementation as the protective measures against risky behaviors (Gasa *et al.,* 2022; Paul *et al.,* 2024).

5.2. Nutritional Health and Its Dimensions in Relation to Drug Use:

Whereas psychological and social factors were considered to be of significant association with the use of drugs, it was also in this study that potential association between nutritional health indicator and substance use was also investigated. Interestingly, no statistically significant differences existed in BMI, percentage of UBW and malnutrition risk between the drug users and non-users based on the MST. These results indicate that the nutritional status was not a differentiating variable between student drug users and non-users in this group of people.

It was not a unique observation because past studies showed that nutritional deterioration was likely to appear following the extended use of drugs (World Health Organization, 2016). Acute or intermittent drug use is widely witnessed in students who might not have reached a point where there are physiological manifestations like loss of weight or risk of malnutrition. National Institute on Drug Abuse (NIDA, 2022), states that nutritional impairments induced by drugs, such as protein-energy malnutrition, vitamin deficiencies, as well as metabolic disturbances, are more common in clinical populations with long histories of substance abuse.

However, even with no statistically significant differences in the nutritional status between the drug users and the non-users, the present study found that 98% of the total population sampled had evidence of mild malnutrition risk no matter their substance use state. The finding is an indication of a larger system-wide problem of unhealthy nutritional health among Al-Ahsa university students. These findings were supported by similar studies in the region by Al-Hazzaa *et al.* (2012), who reported high prevalence of physical inactivity and poor dietary habits among Saudi youth- a factor that leads to both undernutrition and obesity. The associated factors included poor dietary habits, academic stress, sleep disruptions, and the lack of knowledge about nutrition (Musaiger *et al.,* 2011). These difficulties can also indirectly increase the probability of drug use by reducing physical strength and the emotional-coping strength. Students with chronic energy deficiencies or micronutrient imbalances might be more likely to feel fatigue, irritable, and have problems with concentration conditions that make them more susceptible to the use of stimulants or other mood-altering substances. Although the present rates of drug usage within the sample might not be sufficiently high to shaow any nutritional result yet, the combination of the prevalence of malnutrition risks and psychosocial stressors makes a significant issue in the context of the population health.

5.3. Role of social factors in influencing drug use:

Family cohesion emerged as important in univariate analysis and was not important in multivariate models, which could be due to the greater autonomy students have in university. This trend is in line with the results obtained by Mahfouz *et al.* (2014). These results indicate that the strategies of student engagement should be reconsidered. The emphasis should not be on participation; it should be accompanied by an environment of peer support of the health-conscious norms through mentorship programs, structured activities, and supervised social interactions in universities.

5.4. Association between demographic variables and drug use:

The existing results found that there were two demographic variables such as living alone and attendance to humanities subjects that were significantly related to increased drug use. The findings are comparable to those found by Al-Hazzaa *et al.* (2012), who have recorded higher risk-taking behavior in students in less structured academic courses and those who are socially isolated. Non-STEM students can be less strict in their academic timetable, which might result in a higher level of unstructured time, peer pressure, and a decrease in academic stress, which can increase susceptibility to substance use (Meo *et al.,* 2025). Similarly, independent living can also decrease parental supervision, increase loneliness, and increase stress, which are all known substance use contributors (Paul *et al.,* 2024).

5.5. Differences in nutritional health dimensions between drug users and non-users:

However, on the contrary, the results showed no important differences between drug users and non-users in the three dimensions of nutritional health examined: BMI, percent of underweight, and malnutrition risk. This could indicate that the nature and rate of drug use among this population have not yet physically deteriorated to an extent that could be measured, particularly due to the relatively low prevalence (8.3%) and the potential of recreational or non-daily use patterns. Alternatively, there are certain health consequences of drug use that could be cumulative and realized only after a long period of exposure. This observation was consistent with those of the World Health Organization (2016) who suggested that in the early stages of drug use, there might be no apparent physical symptoms especially among youths who may otherwise be in good baseline health.

The National Institute on Drug Abuse (2022) argues that more nutritional impairments, such as protein-energy malnutrition in risk, vitamin deficiencies, and metabolic issues, are more common in clinical populations with long-term histories of substance abuse.

Even though statistically significant differences in nutritional status depending on the drug use were not observed, the results of the present study showed that (98%) of the whole sample presented signs of mild malnutrition risk regardless of the substance use status. This observation indicated that there was a bigger systemic problem of poor nutritional health among university students in Al-Ahsa. These findings were consistent with other studies in the region which found the prevalence of physical inactivity and poor dietary habits among Saudi young people, which led to both undernourishment and obesity Al-Hazzaa *et al.* (2011), The causes can be poor diets, educational pressure, inconsistent sleep schedules and lack of nutrition awareness (Musaiger and others, 2011).

Nevertheless, the malnutrition risk population is high (98%), and it is concerning in the entire sample, irrespective of the use of drugs. It implied that there were wider issues with nutrition deficiency in the student body and this needed to be facilitated by health promotion programs, campus nutrition education and wellness programs. These results demonstrated the necessity of specific intervention, especially to students who have to live alone or learn in those disciplines that did not provide daily structure and support.

This research had a number of limitations. To begin with, the MST was initially designed to be used in clinical practice. The simplicity, reliance on self-reported data, and concerned with recent weight loss and appetite change, which has made it easy to use in non-clinical and epidemiological surveys but its applicability might be restricted in young, non-clinical populations. Moreover, UBW could not be used as a single diagnostic tool of malnutrition as a non-clinical population. UBW was not applied in isolation in this study but served as the supportive proxy to record self-perceived weight changes across time, a technique that is traditionally used in large-scale surveys when measuring history of weight change werre not available. It was only applied to put into perspective the recent changes in weight but not to determine malnutrition conditions. Moreover, the existence of implausibly small odds ratios can be an indication of the sparse data

bias or quasi-separation of the regression models and thus should be treated with care.

6. Conclusion

This paper has shown that drug use in Al-Ahsa university students is a multidimensional outcome of psychological, social, and health-related factors, attitudes, behavioral patterns, living conditions, and academic discipline were among the most significant. Even though the nutritional and physical health indicators (body mass index (BMI), percentage of usual body weight (%UBW), and malnutrition risk (MST scores)) did not demonstrate any significant differences, they were crucial aspects of the overall student well-being and can lead to long-term vulnerability in case of their neglect. The results highlighted the fact that the problem of drug use in this population was multifactorial and should be viewed in a comprehensive preventative approach.

As such, a holistic and culturally sensitive prevention model should be adopted by universities to incorporate psychological education, positive association with peers, and organized student support and campus wide health promotion programs such as nutrition awareness, stress management, and wellness programs. Higher-risk groups should be given special consideration especially students living alone and students studying in humanities disciplines, where an intensive effort was made by the university administrators, health professionals, and the policymakers to provide sustainable and evidence-based action.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

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Conflicts of Interest

None declared.

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