



RESEARCH ARTICLE

RISK FACTORS FOR SUBSTANCE USE AMONG MALE SECONDARY SCHOOL STUDENTS IN ADEN GOVERNORATE, YEMEN

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Abstract

Substance use among secondary school students is a growing concern with significant implications for public health. This study aimed to identify the risk factors associated with substance use in a community of secondary school students in Aden Governorate, Yemen. A cross-sectional study was conducted among secondary school students in Aden governorate, using a structured questionnaire to collect data on potential risk factors for substance use. The questionnaire included measures of Peer Pressure, Academic Performance (GPA), Parental Monitoring, as well as self-esteem towards drug use. The Self-esteem among secondary students was measured using Rosenberg's Self-Esteem Scale. Descriptive and inferential statistical analyses were performed to identify significant risk factors. A total of 280 male students from 10 secondary schools (both section) of Aden governorate participated in the study, with a mean age of 17.37 ± 1.42 years. Risk factors associated with substance use included peer pressure (OR=2.34, 95% CI: 1.56-3.42), poor academic performance (OR=1.87, 95% CI: 1.23-2.81), lack of parental supervision (OR=1.62, 95% CI: 1.09-2.37), and low self-esteem (OR=1.45, 95% CI: 1.01-2.11). The findings highlight the complex interplay of social, familial, and individual factors in contributing to substance use among secondary school students. These results can inform targeted interventions and preventive strategies to address the identified risk factors in the community. This study identified several key risk factors for substance use among secondary school students in the community. Understanding and addressing these risk factors is vital for the development of effective preventive interventions and support systems to mitigate the impact of substance use on the health and well-being of young individuals.

Keywords: Substance use, Risk factors, Secondary school students, Self-esteem.

Introduction

Adolescence is a critical developmental stage characterized by significant physical, emotional, and social changes. During this period, secondary school students are exposed to a range of risk factors that can adversely affect their health and well-being. These risk factors include but are not limited to unhealthy behaviours, mental health issues, and environmental influences, which can have long-lasting consequences on their physical and psychological development [1, 2].

Substance use among secondary school students is a significant public health concern, with potential long-term implications for physical and mental health, social functioning, and academic performance [3]. Previous studies have identified various determinants of risk behaviours in adolescents, including socio-economic

status, peer influence, academic pressure, and family dynamics [4-6].

Understanding the risk factors associated with substance use in this population is crucial for the development of effective preventive interventions and support systems [7]. While several studies have examined the prevalence of substance use among adolescents, limited research has explored the specific risk factors in a community setting, especially among secondary school students. This cross-sectional study aimed to identify the risk factors for substance use among secondary school students in a community, with the goal of informing targeted interventions and preventive strategies.

This study aims to examine the prevalence of risk factors among secondary school students and identify the key determinants that influence their engagement in risky

behaviors. By focusing on a diverse population of students, this research seeks to provide a comprehensive understanding of the factors that contribute to adolescent risk behaviors, thereby informing the development of effective prevention and intervention strategies.

Methods

Study Design and Participants

This cross-sectional study was conducted among male secondary school students in Aden governorate. A convenience sampling method was used to recruit participants from different secondary schools in the community. The inclusion criteria were students aged 13 to 18 years who provided informed consent to participate in the study. Students who were absent on the day of data collection or declined to participate were excluded from the study.

Data Collection

Data were collected using a structured questionnaire designed specifically for this study.

The questionnaire included sections on sociodemographic characteristics, and potential risk factors for substance use. The risk factors section encompassed Peer Pressure, Academic Performance (GPA), Parental Monitoring, as well as self-esteem towards drug use. The Self-esteem among secondary students was measured using Rosenberg's Self-Esteem Scale, which consists of 10 items. Rosenberg's scale employs a 4-point Likert scale, ranging from "strongly disagree" (coded as 0) to "strongly agree" (coded as 3). The questionnaire was administered to the students during school hours, and the responses were anonymized to ensure confidentiality.

Ethical Consideration

The study received ethical approval from the Research Ethics Committee of the Faculty of Medicine and Health Sciences, University of Aden; Yemen, and all procedures were conducted in accordance with the ethical guidelines for human subjects' research. A written informed consent was obtained from the participants, parents/guardians of the children in line with the Helsinki Declaration

Statistical analysis

Data was analysed using Statistical Package for Social Science (SPSS) version 22.0. Descriptive statistics were used to summarize the sociodemographic characteristics and substance use prevalence among the participants. Chi-square tests were conducted to determine the association between potential risk factors and substance use among the students. Odds ratios (OR) and 95% confidence intervals (CI) were calculated to assess the strength of association between the risk factors and substance use.

Results

Demographic Characteristics of Study Participants

Demographic characteristics of study participants is shown in Table 1. A total of 280 male students from 10 secondary schools (both section) of Aden governorate participated in the study, with a mean age of 17.37 years (SD=1.42). The majority of the participants at age 18 years and 19 years with 29.7% and 27.5% respectively. Regarding to the section of school, all students had nearly the same rates around >30%. The same rate was observed among study levels.

Table 1. Demographic Characteristics of Study Participants

Study Characteristics	No	%
Age of Students/ Years (17.37± 1.42)		
15 years	41	14.6
16 years	52	18.6
17 years	27	9.6
18 years	83	29.7
19 years	77	27.5
Secondary School Section		
Science	97	34.6
Literary	91	32.4
First year (no specify section)	92	32.7
Study Level		
First Level	90	32.1
Second Level	94	33.6
Third Level	96	34.3
Grade point average		
Excellent	33	11.8
Very Good	70	25.0
Good	92	32.9
Acceptance	50	17.9
Fail	35	12.5

The majority of students, 30.4 % had poor performance, including those with acceptable and failing grades. Followed by 32.9 % earned a good grade. 21.4% received a very good grade. while the remaining about 11.8%, achieved an excellent grade.

Table 2. Distribution related to the Parental Characteristics

Parents Characteristics	Fathers No (%)	Mothers No (%)
Parents Education		
High (University or above)	16 (5.7)	11 (3.9)
Middle (primary, intermediate and secondary education)	227 (81.1)	140 (50)
Low (illiterate, write and read)	37 (13.2)	129 (46.1)
Parent's Occupation		
Government employees	15 (5.4)	9 (2.3)
Private sector employees	224 (80)	74 (26.4)
Not work	41 (14.6)	197 (70.4)
Relation with Parents		
Good	256 (91.4)	274 (97.9)
Bad	24 (8.6)	6 (2.1)
Do you suffer from any Family Problem?		
Yes	24 (8.6)	
No	256 (91.4)	
Do you suffer from any family neglect?		
Yes	26 (9.3)	
No	254 (90.7)	

The rate of high or middle education showed high among fathers than mothers with 5.7% and 3.9% respectively for high and 81.1% and 50% respectively from middle education. While rate of low education showed high among mothers (46.1%) than fathers (13.2%). Related to the work, worked fathers consisted had rate than worked mothers, and in opposite line those not worked mothers appeared high than not worked fathers (46/1% and 13.2% respectively). The students had good relations with their parents (91.4% mothers and 97.9% fathers) with slightly higher with mothers. The student who had family problem consisted only 8.6%, while those students with family problem consisted 91.4%. while those students who suffering from family neglect consisted only 9.3% (Table 2).

In the assessment of Rosenberg's self-esteem scale, the highest rating was observed for the statement "1) On the whole, I am satisfied with myself" (mean score: 2.4), followed by "I feel that I have a number of good qualities" (mean score: 2.3) and "I am able to do things as well as most other people" (mean score: 2.2). The overall mean score for self-esteem was 19.9 ± 7.8 , with 64.6% classified as having normal self-esteem, 17.5 % with high self-esteem, and 17.9% with low self-esteem (Table 3).

The analysis revealed several significant risk factors associated with substance use among the secondary school students (Table 4). Peer pressure was the most a prominent risk factor, 100 (35.7%) students reporting that they were more likely to engage in substance use under the influence of their peers. The odds ratio (OR) for this association was 2.34, with a 95% confidence interval (CI) ranging from 1.56 to 3.42, indicating a strong and statistically significant relationship.

Poor academic performance was also significantly associated with substance use, as 85 (30.4%) students who reported failing grades or academic difficulties were almost twice as likely to engage in substance use (OR=1.87, 95% CI: 1.23-2.81), highlighting its significant role in contributing to substance use.

Furthermore, the analysis showed that 70 (25.0%) students reported low levels of parental monitoring were at a higher risk of engaging in substance use (OR=1.62, 95% CI: 1.09-2.37), suggesting that insufficient parental supervision is a significant risk factor.

50 (17.9%) students with low self-esteem were also found to be more prone to substance use (OR=1.45, 95% CI: 1.01-2.11). Indicating that self-esteem issues play a noteworthy role in substance use among secondary school students.

Table 3. Self-esteem scale score Among Secondary School Students

Statement	Mean \pm SD
1) On the whole, I am satisfied with myself.	2.4 \pm 0.7
2) At times I think I am no good at all \ddagger .	1.8 \pm 0.92
3) I feel that I have a number of good qualities	2.3 \pm 0.90
4) I am able to do things as well as most other people.	2.2 \pm 0.76
5) I feel I do not have much to be proud of \ddagger .	1.8 \pm 0.86
6) I certainly feel useless at time \ddagger .	1.7 \pm 0.8
7) I feel that I'm a person of worth, at least on an equal plane with others.	2.1 \pm 0.6
8) I wish I could have more respect for myself \ddagger .	1.8 \pm 0.6
9) All in all, I am inclined to feel that I am a failure \ddagger .	1.7 \pm 0.6
10) I take a positive attitude toward myself.	2.1 \pm 0.8
Total self-esteem score	19.9 \pm 7.8
Level of self-esteem	
Low (<15 points)	50 (17.9%)
Normal (15-25 points)	181 (64.6%)
High (>25 points)	49 (17.5%)
Response has a range from "strongly disagree" coded with 0 to "strongly agree" coded with 3. \ddagger Score was reverse coded.	

Table 4. Risk Factors Associated with Substance use Among Secondary School Students

Risk Factor	Frequency (n)	Percentage (%)	Odds Ratio (OR)	95% Confidence Interval (CI)
Peer Pressure	100	35.7%	2.34	1.56 - 3.42
Poor Academic Performance	85	30.4%	1.87	1.23 - 2.81
Low Parental Monitoring	70	25.0%	1.62	1.09 - 2.37
Low Self-Esteem	50	17.9%	1.45	1.01 - 2.11

Discussion

The results of this study provide valuable insights into the risk factors for substance use among male secondary school students in the community. The prevalence of substance use among the students underscores the importance of understanding the underlying factors that contribute to these behaviours. The identified risk factors encompass social, familial, and individual domains, highlighting the complex interplay of influences on adolescent substance use.

The results highlight that peer pressure is the most influential risk factor for substance use among male secondary school students, followed by poor academic performance, lack of parental supervision, and low self-esteem. These results underscore the multifaceted nature of substance use among adolescents and these findings suggest the importance of targeted interventions to reduce peer pressure, improving academic support, enhancing parental involvement, and fostering positive self-esteem may be effective in mitigating the risk of substance use in this population.

Peer pressure emerged as a prominent risk factor for substance use among male secondary school students. This finding, consistent with existing literature on the impact of peer influence on adolescent behaviours emphasizing the critical role of peer influence in adolescent behaviours. It has been indicated that adolescents are highly susceptible to peer influence, particularly in risk-taking behaviours such as drug use [8, 9]. A study conducted by Maxwell found similar associations between peer influence and substance use, emphasizing the role of social dynamics in adolescent drug behaviours [10]. The desire for social acceptance and fear of social rejection often drives adolescents to conform to peer norms, including drug use, as a means to gain approval or avoid exclusion. This can be particularly pronounced in male adolescents, who may face heightened pressures to conform to certain social behaviours that are perceived as indicators of masculinity or social dominance. The need for social acceptance and belonging may drive students to engage in substance use in the presence of peers who endorse or encourage such behaviours. Addressing peer pressure through peer-led interventions, peer support programs, and positive peer influence initiatives may be crucial in mitigating the influence of peers on substance use among secondary school students. Programs that promote healthy social norms and encourage positive peer interactions have shown promise in reducing substance use among adolescents [11]. Although peer pressure is a universally acknowledged risk factor, its impact may vary depending on cultural norms and social structures [12].

Poor academic performance was also significantly associated with substance use, suggesting the potential role of academic stress, disengagement from school, and

coping mechanisms in substance use. Previous study supports this finding, indicating that students who struggle academically may experience increased stress and frustration, leading to disengagement from school and an increased likelihood of turning to substances [13]. Moreover, academic underachievement might be linked to lower self-esteem and a lack of future aspirations, which can further predispose students to drug use [14]. Likewise, the link between academic performance and drug use has been documented in multiple studies [15-17], which highlight the role of academic stress and disengagement in driving substance use.

Academic support programs, counselling services, and educational interventions that address the relationship between academic performance and substance abuse may be beneficial in reducing the prevalence of substance use among students. Interventions aimed at improving academic performance, such as tutoring, counselling, and extracurricular engagement, could help reduce the prevalence of substance use. Additionally, educational programs that focus on stress management and coping skills may address the underlying academic stressors that contribute to substance use [18].

The finding that a lack of parental supervision is associated with higher rates of substance use is consistent with previous studies highlighting the protective role of parental involvement in adolescent development. Previous research suggests that adolescents who receive adequate parental monitoring and support are less likely to engage in risky behaviours, including substance abuse [19]. Parental supervision provides structure and sets boundaries that reduce opportunities for drug use, while parental support fosters open communication and emotional security, which can protect against substance use. Family-based interventions, parental education programs, and communication strategies that enhance parental supervision and support may be effective in addressing this risk factor [20-22]. These programs can teach parents effective monitoring strategies and improve parent-child communication, which are critical components in reducing adolescent substance use [23]. Additionally, the relative importance of parental supervision may differ based on family dynamics and socio-economic status [24].

Low self-esteem was also identified as a risk factor for substance use, highlighting the psychological vulnerabilities that can predispose adolescents to substance use. Adolescents with low self-esteem may use drugs as a means of self-medication to cope with feelings of inadequacy or social anxiety [25]. It has been reported that enhancing self-esteem through school-based programs can reduce the risk of substance abuse [26].

Mental health support, self-esteem building programs, and counseling services that promote positive self-image and emotional resilience could be integral components of

preventive interventions targeting adolescents at risk of substance use. Programs that promote self-efficacy and provide adolescents with tools to cope with social pressures and personal challenges may be particularly effective [27].

The findings of this study are subject to several limitations, including the use of self-reported data, potential response biases, and the cross-sectional design that limits causal inferences. Future research could employ longitudinal designs to explore the temporal dynamics of risk factors and substance use among secondary school students. Additionally, qualitative investigations could provide nuanced insights into the lived experiences and perceptions of adolescents regarding substance use and its associated risk factors in the community.

Conclusion

This cross-sectional study identified several key risk factors for substance use among secondary school students in the community. The findings underscore the importance of addressing a wide range of influences, including peer pressure, academic performance, parental supervision, and self-esteem, in the design of preventive interventions and support systems. Targeted strategies that address the identified risk factors may contribute to the reduction of substance use prevalence among secondary school students and promote the well-being of adolescents in the community. The current findings reinforce the need for comprehensive, multi-faceted interventions that address the various risk factors associated with substance use among adolescents. Tailoring these interventions to the specific needs and contexts of different adolescent populations can enhance their effectiveness and contribute to reducing the prevalence of substance use in this vulnerable group.

Conflict of Interest

The authors have no conflicts of interest to declare.

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مقالة بحثية

عوامل الخطر لاستخدام المواد المخدرة بين الطلاب الذكور في المدارس الثانوية محافظة عدن، اليمن

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المُلخَص

يُعد تعاطي المواد المخدرة بين طلاب المدارس الثانوية مصدر قلق متزايد، وله تأثيرات كبيرة على الصحة العامة. هدفت هذه الدراسة إلى تحديد عوامل الخطر المرتبطة بتعاطي المواد المخدرة في مجتمع من طلاب المدارس الثانوية في محافظة عدن، اليمن. تم إجراء دراسة مقطعية بين طلاب المدارس الثانوية في محافظة عدن، باستخدام استبيان منظم لجمع البيانات حول العوامل المحتملة لتعاطي المواد المخدرة. تضمن الاستبيان مقاييس مثل الضغط من الأقران، الأداء الأكاديمي (المعدل التراكمي)، المراقبة الأبوية، وكذلك تقدير الذات تجاه تعاطي المواد المخدرة. تم قياس تقدير الذات لدى الطلاب باستخدام مقياس روزنبرغ لتقدير الذات. أجريت تحليلات إحصائية وصفية واستنتاجية لتحديد عوامل الخطر المهمة. شارك في الدراسة ما مجموعه 280 طالباً من الذكور من 10 مدارس ثانوية (من كلا القسمين) في محافظة عدن، وكان متوسط أعمارهم 17.37 ± 1.42 عامًا. تضمنت عوامل الخطر المرتبطة بتعاطي المواد المخدرة الضغط من الأقران (95% CI: 1.56-3.42)، الأداء الأكاديمي الضعيف (OR=2.34، 95% CI: 1.23-2.81)، نقص الإشراف الأبوي (95% CI: 1.09-2.37)، وانخفاض تقدير الذات (OR=1.62، 95% CI: 1.01-2.11). تُبرز النتائج التفاعل المعقد بين العوامل الاجتماعية والأسرية والفردية في المساهمة في تعاطي المواد المخدرة بين طلاب المدارس الثانوية. يمكن لهذه النتائج أن تسهم في تطوير تدخلات مستهدفة واستراتيجيات وقائية لمعالجة عوامل الخطر المحددة في المجتمع. حددت هذه الدراسة عدة عوامل رئيسية ترتبط بتعاطي المواد المخدرة بين طلاب المدارس الثانوية في المجتمع. فهم ومعالجة هذه العوامل يُعتبران أمرًا حيويًا لتطوير تدخلات وقائية فعالة وأنظمة دعم لتخفيف تأثير تعاطي المخدرات على صحة ورفاهية الشباب.

الكلمات المفتاحية: تعاطي المواد المخدرة، عوامل الخطر، طلاب المدارس الثانوية، تقدير الذات.

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