

Mental Health and Education: Assessment of Factors Affecting High School Students

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Abstract

Adolescence is a period of intense physical, psychological, and social changes, during which young individuals become more vulnerable to family issues, socioeconomic factors, and social interactions. Influences such as friendships, technology use, substance use, media impact, gender norms, bullying, and sexual violence significantly affect mental health. In Brazil, alarming data indicate that many adolescents face mental disorders, increasing the risks of self-harm, depression, and suicide. This study aimed to evaluate the mental health aspects of high school students at School Assis Chateaubriand in Feira de Santana, Bahia. A questionnaire with 19 questions, based on the National School Health Survey (PENSE), was administered to address factors impacting mental health, including sociodemographic data, individual and social aspects, and drug experimentation. Results revealed that 58% of students reported alcohol consumption, 43% felt lonely in the past 12 months, and 61% did not feel accepted in their school environment. Among those who reported feeling lonely, 10.6% experienced this feeling constantly. The main motivations for drug use included curiosity, peer influence, escaping family problems, and socializing. These issues are interconnected with feelings of loneliness, anxiety, and social dynamics that directly impact young people's mental health. Therefore, it is essential for mental health to be a priority in basic education curricula, and for health education initiatives to be promoted by universities. Schools should serve as spaces for support and information, and university extension activities are vital for fostering dialogue about mental health among students.

Keywords

Mental Health, Health Education, Adolescent Health, Family Relations, Adolescence

1. Introduction

Adolescence refers to a transitional period between childhood and adulthood, marked by physical, cognitive, emotional, and social changes, and it expresses itself in various ways depending on different social, cultural, and economic contexts. This period is characterized by changes and conflicts, puberty, and the quest for identity [1]. The modifications caused by puberty are universal and visible, altering the shape and height of children and endowing them with adult sexuality [2]. However, the biopsychosocial experience of this life phase cannot be reduced to puberty; it is important to recognize its complexity [3].

In addition to the inherent changes of adolescence, familial and socioeconomic issues, such as domestic violence, parental separation, and poverty, can contribute to feelings of insecurity and confusion, consequently leading to depression and suicidal behaviors [4]. In this regard, it is important to emphasize that other factors can also influence adolescents' mental health, such as relationships with peers, use of technology and substances, media influence, gender norms, bullying, sexual violence, and lack of access to quality services and support. The greater the exposure to risk factors, the significant the impact on adolescents' mental health [5]. Furthermore, there are studies that highlight the importance of developing socio-emotional competencies and interpersonal relationships as protective factors associated with adolescents' mental health [6].

According to the World Health Organization about 14% of young people aged 10 to 19 worldwide suffer from some mental disorder, with anxiety being the most prevalent [5]. Attention deficit hyperactivity disorder and behavioral disorders are common in adolescence. In Brazil, approximately 17% of individuals in this same age group are affected by a mental disorder, a segment that is more exposed to the risk of self-harm, depression, and suicide, according to UNICEF [7].

As most adolescents aged 10 to 19 are attending school, this environment becomes a strategy for promoting mental health. Schools serve as places intended to guide, support, help develop self-esteem, create strategies to tackle problems, promote responsibility and engagement, aiming to develop and/or strengthen bonds and dialogue with families. Schools can also contribute to the development of health initiatives, particularly in the behavioral changes of young people, aiding in early diagnosis and improving quality of life [4].

In this context, schools can collaborate to promote the mental health of young people, particularly in the prevention of depression and suicide, requiring the collaboration of various school agents in a continuous and intermittent process [3]. One of these agents that also contributes to this process is the university, primarily

through extension projects. University extension projects are initiatives that connect academic institutions with the broader community, aiming to apply academic knowledge to address social issues. These projects serve as a bridge between universities and society, fostering education, research, and community engagement in diverse fields, including mental health [8]. In the case of this research, it serves as a space for reflections on mental health education. Some studies report valuable contributions when combining university extension, education, and mental health, both for high school and university students [3] [9] [10].

This work is the result of space for discussions on mental health among adolescents in public schools. It stems from an extension project that carried out educational actions focused on the mental health of adolescents in public basic education in the city of Feira de Santana, Bahia. Thus, the overall objective of this study was to assess the mental health of high school students. The specific objectives were a) to investigate variables related to mental health; b) to investigate drug use and motivations for use; and c) to evaluate the sociodemographic profile of the students.

2. Materials and Methods

This work is the result of an extension project carried out at the Assis Chateaubriand State School, located in the state network of Feira de Santana, Bahia. The project aimed to promote awareness and education about mental health among students, and it was organized into three distinct stages, each contributing to the overall objectives:

Stage 1: In the first stage, the project was introduced to the students and the school administration. This involved an initial meeting where the goals and activities of the project were explained. Following this, a questionnaire was administered to the students to gather insights into their current understanding of mental health, their perceptions, and any existing misconceptions. The questionnaire was designed to assess their knowledge, attitudes, and awareness regarding mental health issues, as well as to identify any gaps in their understanding. The responses were collected and analyzed to better tailor the subsequent educational interventions to the specific needs of the students.

Stage 2: The second stage focused on sharing the findings of the questionnaire with the students in an interactive and engaging manner. This was an important step, as it allowed the students to reflect on their own views and knowledge about mental health. A detailed presentation of the data was conducted, highlighting common trends, misconceptions, and areas that needed further clarification. The presentation encouraged open discussion and served as a platform for students to ask questions, share personal experiences, and engage in conversations about mental health in a safe and supportive environment. This stage also aimed to foster a greater sense of awareness and responsibility among students about mental health issues, both within themselves and in their communities.

Stage 3: The final stage of the project involved the practical implementation of a series of educational activities and scientific dissemination on mental health topics. These activities were carefully designed based on the findings of the question-

naire to address specific areas where students required more knowledge. Workshops, seminars, and interactive discussions were held, focusing on themes such as emotional well-being, stress management, anxiety, depression, and mental health stigma. These sessions aimed not only to increase awareness but also to provide students with practical tools and strategies for maintaining their mental health and supporting others in their community. In addition, informational materials such as pamphlets and posters were created and distributed to further reinforce the key messages of the project. Scientific dissemination efforts were integrated into the activities, ensuring that students received accurate, evidence-based information about mental health and its importance for overall well-being.

Through these stages, the project successfully engaged students in an ongoing dialogue about mental health, ultimately fostering a more informed, supportive, and open environment within the school. The project's outcomes highlighted the importance of mental health education in schools, and the data collected contributed valuable insights that could inform future initiatives in this area.

For data collection, a questionnaire was used, administered through the Google Forms platform. The interview consisted of 19 questions, and its design was based on the methodology adopted in the National School Health Survey (PENSE), an initiative developed between the Ministry of Education (MEC) and the Brazilian Institute of Geography and Statistics (IBGE). This questionnaire aimed to collect information on feelings of loneliness, insomnia due to worries, the quality of family and social relationships, the use and frequency of alcohol and other drugs, and perceptions of school support.

Data collection took place in all third-year classes, totaling five classes. During this time, a link generated by Google Forms® was made available for students to access the questionnaire. For those who did not have a mobile phone or lacked internet access, the scholarship student provided mobile data from their phone or loaned their device.

The questionnaire administered for the students consisted of 19 questions; however, for this study, only 9 were analyzed. To facilitate understanding, the questionnaire was divided into 4 distinct blocks, as shown in **Figure 1**.



Figure 1. Questionnaire Administered to High School Students in a Public School in Feira de Santana—Bahia. Overview of the questionnaire distributed to high school students at a public school in Feira de Santana, Bahia. This figure provides a snapshot of the key areas covered in the survey, including demographics, feelings of loneliness, substance use, school support, and family dynamics, aimed at understanding the well-being and behaviors of the students.

The first block consisted of questions aimed at assessing the sociodemographic characteristics of the participants, such as age, gender, and whether they lived with their parents. The second block was designed to analyze individual aspects that may indicate the quality of their mental health, and the following questions were asked: How often have you felt lonely in the past 12 months? How often have you been unable to sleep at night because something was worrying you? The third block aimed to explore social factors associated with mental health, with questions such as: How many friends do you have? How often do your parents and/or guardians know what you are doing outside the home? Do you feel supported in the school environment? Finally, the last block intended to assess drug use among adolescents through questions like: Have you ever tried any drugs in your lifetime, such as alcohol, cigarettes, marijuana, cocaine, crack, glue, loló, perfume spray, ecstasy, oxy, etc.? What motivated you to try this drug? Have you ever smoked a cigarette? Have you ever consumed alcohol?

3. Results

A total of 114 questionnaires were collected, of which one was excluded due to filing errors. Thus, 113 valid questionnaires remained. Of these, 56% ($n = 62$) were male and 45% ($n = 51$) were female. Regarding the students' ages, 67% ($n = 76$) were between 16 and 17 years old, while 33% ($n = 36$) were 18 years old or older. When asked about their living arrangements, 87% ($n = 98$) reported living with one or both parents, while 13% ($n = 15$) did not live with either parent.

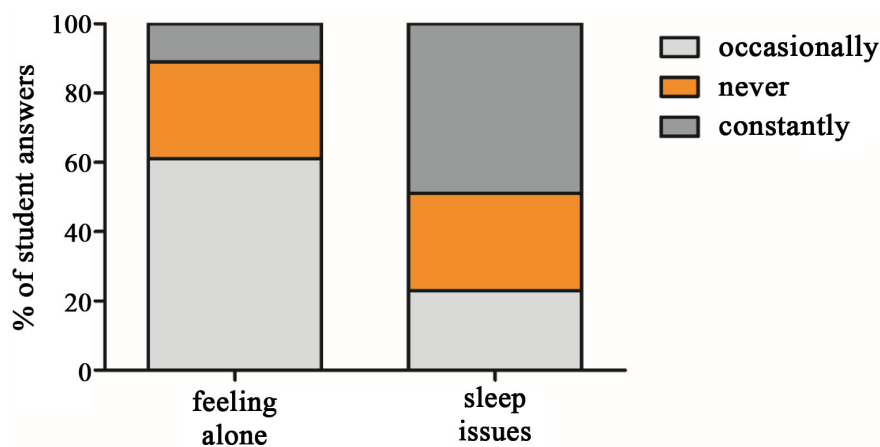


Figure 2. Prevalence of loneliness and sleep disturbances among high school students. Feeling alone and sleep patterns over the past 12 months among high school students ($n = 113$). Feeling alone answers illustrates the frequency of reported loneliness, categorized as occasional (61%), never (28%) or constant (11%). Sleep issues answers present data on sleep disturbances, highlighting the proportion of students experiencing, occasional (23%), never having insomnia (28%), or frequent (49%) related to worries. The grey bars represent occasionally, the orange bars represent never, and the dark grey bars represent constantly.

One of the objectives of the research was to assess the feelings of loneliness experienced by the participants. To this end, they were asked about the fre-

quency with which they felt lonely in the past 12 months. The results revealed that 61% of participants reported feeling lonely occasionally, while 28% stated that they had never experienced loneliness. On the other hand, 11% of respondents indicated that they feel lonely constantly, as illustrated in **Figure 2**. Still in **Figure 2**, the results regarding the participants' sleep patterns can be observed. Among the students interviewed, 49% reported having frequent trouble sleeping, while 23% mentioned experiencing these issues rarely or occasionally. On the other hand, 28% stated that they had never faced insomnia related to worries.

Regarding the social aspect of the participants, it was observed that 82% of the students stated they have many friends, 13% said they have few friends, and 5% reported having no friends, as illustrated in **Figure 3(A)**. It is also possible to see the relationship of the parents with the students. The results indicated that 51% of parents always know what their children do outside the family environment, 44% know most of the time, and 5% of the parents are never aware of what their children do outside the home, as shown in **Figure 3(B)**.

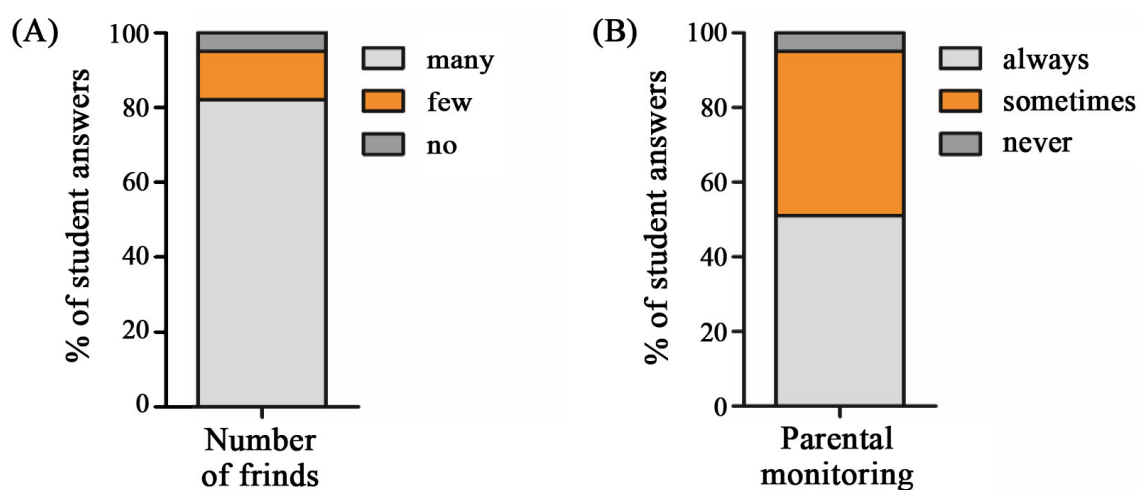


Figure 3. Percentage of school support and parental monitoring among high school students. Percentage of students reporting school support, number of friends (A), and parental monitoring (B) over the past 12 months among high school students ($n = 113$). Panel (A) illustrates the distribution of students based on their perceived level of school support and the number of close friends: many (82%), few (13%), no having friends (5%). Panel (B) presents data on parental monitoring, indicating the extent to which parents were involved in supervising their children's activities and well-being: always (51%), sometimes (44%), never (5%).

Students were also asked about the level of support they felt from their school. The results revealed that the majority, 61%, reported not feeling supported, while 39% indicated that they did feel supported by their school (**Figure 4**, bar gray and orange, respectively). These findings highlight potential gaps in the academic and emotional support systems available to students. Lack of perceived support may contribute to feelings of loneliness, stress, and other well-being concerns, emphasizing the need for further investigation into the factors influencing students' perceptions of school support.

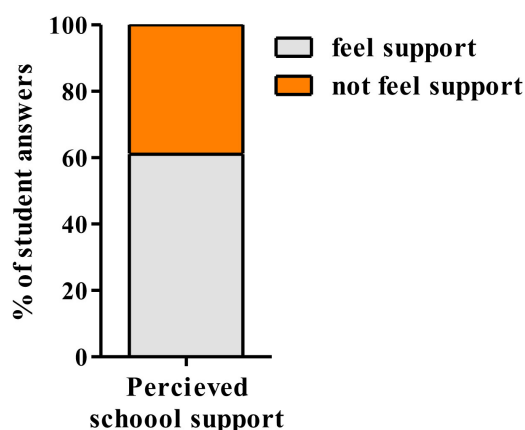


Figure 4. Perceived school support among high school students. Evaluation of students' perceptions of school support over the past 12 months ($n = 113$). Bar gray: 61%, reported not feeling supported. Bar orange: 39% indicated that they did feel supported by their school. This figure illustrates the percentage of students who felt supported by their school compared to those who did not, highlighting potential gaps in academic and emotional support within the school environment. The grey bars represent students who feel support and the orange bar represents students who did not feel support.

The questionnaire also assessed students' experiences with drug use. The findings revealed that 61% of participants had never experimented with drugs, whereas 39% ($n = 44$) reported having prior experience. Among those who had used drugs, the most reported substances included alcohol, cigarettes, caffeine, codeine, and marijuana. Regarding the use of legal substances, such as alcohol and tobacco, **Figure 5** shows that 58% of students had consumed alcohol at least once, while 42% had never done so. Similarly, **Figure 5** presents data on tobacco use, indicating that 89% of participants had never tried it, whereas 11% reported previous tobacco use. These findings provide insight into the prevalence of substance use among students and highlight the need for further exploration of the factors influencing their choices.

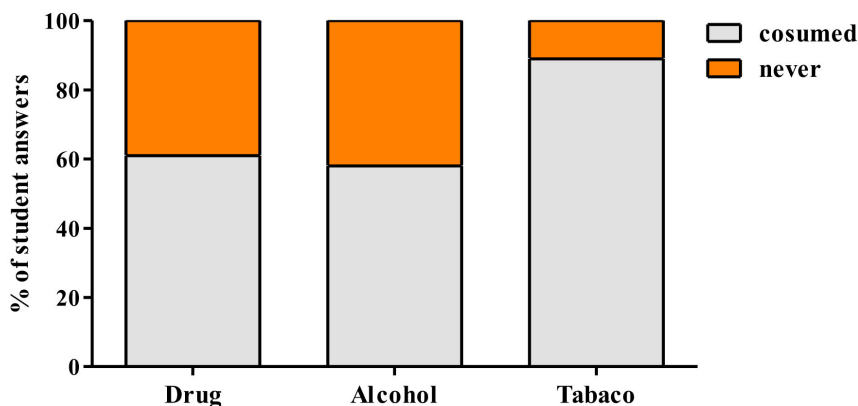


Figure 5. Prevalence of drug use among high school students ($n = 113$) over the past 12 months. Drugs experiences 61% consumed and 39% never. Alcohol 58% consumed and 42% never. Tabaco 89% consumed and 11% never. The grey bars represent students who have consumed, and the orange bar represents students who have never consumed.

The questionnaire also sought to explore the reasons that led adolescents to experiment with drugs. As shown in **Table 1**, curiosity was the primary motivator, cited by 80% of respondents. Peer influence was mentioned by 11%, while 7% reported using drugs to escape family problems. Additionally, 2% indicated that their drug use was associated with family gatherings. These findings suggest that while social and environmental factors play a role, personal curiosity remains the dominant driver of adolescent drug experimentation.

Table 1. Reasons that led adolescents to experiment with drugs.

Motivations	Frequency
Curiosity	80%
Influence of friends	11%
Escaping from family problems	7%
Family get-together	2%

4. Discussion

The results of this study indicate that, on various occasions, adolescents experience loneliness, a common feeling during this stage of life that may be related to the constant use of social media. There is evidence supporting the connection between social media use and loneliness, especially as this use has intensified [11]. Excessive use of social networks is linked to an increase in symptoms of depression, anxiety, and loneliness, as many adolescents spend hours isolated with their smartphones.

The use of digital media can be associated with various negative effects, such as stress, fatigue, and a decrease in attention and focus. Additionally, it can contribute to risk behaviors, such as excessive exposure on social media and substance use. In the present study, a significant number of students were found to have experimented with drugs, as shown in **Figure 5**. The main motivation was curiosity (**Table 1**). These results are consistent with another study that identifies curiosity about the effects of substances as the primary reason for adolescents to start using drugs [12].

Preventing drug use among adolescents is a complex issue that involves various strategies and public policies. It is essential to implement school programs that inform young people about the risks associated with drug use, such as health deterioration, impacts on social relationships, and legal consequences. In this context, university extension practices play a crucial role, as they help disseminate scientific information in schools, promoting adolescents' awareness of healthy habits and the risks that substance use can pose to physical and mental health.

During adolescence, establishing healthy habits can have a lasting impact on physical and mental health. Among these behaviors are engaging in physical activity, maintaining a healthy diet, using social media rationally, and getting adequate rest. Regarding rest, it has been observed that adolescents alter their circadian rhythm, or sleep-wake pattern [13].

Considering the importance of the circadian cycle for the physical and mental health of adolescents, one of the objectives of this study was to evaluate the sleep patterns of the students. The results indicated that 49% of participants reported difficulties in falling asleep. At this stage of life, it is common for the sleep-wake cycle to experience a delay, with sleep onset and wake times occurring later. This phenomenon can be attributed to hormonal and socio-behavioral factors, such as family routines and school schedules [14]. Thus, difficulty falling asleep may be related to physiological processes associated with the sexual and social maturation of adolescents.

Furthermore, several studies show that there is an association between insomnia and the use of psychoactive substances [15]-[18]. Additionally, a Chinese longitudinal study involving 6995 adolescents (mean age = 15 years) revealed that the prevalence and persistence rates of insomnia and symptoms of anxiety/depression significantly increased with higher life stress scores [19].

Moreover, some studies reveal a mild to moderate correlation between sleep quality and increased subjective well-being over time [20] [21]. This relationship may be explained by the mechanism of sleep disruption, which results in emotional, behavioral, and attentional dysregulation, negatively impacting life satisfaction and mood. Consequently, this dysregulation has an adverse effect on adolescents' sleep overtime.

It is also possible to consider that aspects related to the school environment in which adolescents live can directly influence an individual's mental state. A Brazilian study indicates that among the motivations that led 20% of young people to seek specialized Child and Adolescent Mental Health services from the Secondary Health Care of the Federal District's Health Secretariat were bullying, physical violence among peers, and a lack of friends at school [13]. These behaviors are relatively common in the school environment.

Regarding the family context, the influence on mental health is significant, as observed by Brazilian researchers [12]. In this work, conducted with 33 adolescents aged 14 to 18 who were undergoing socio-educational measures, 33% of participants assessed their caregivers' parenting styles as risky. It was also observed that the lower the self-esteem of the young people, the greater the neglect from caregivers and the less the family support. An individual's self-esteem is related to their mental health [22].

Our results revealed that adolescents participating in extension activities are supported and monitored by their parents or guardians, as shown in **Figure 3(B)**. We emphasize that parental involvement in their children's social lives during adolescence is essential, as this phase is marked by intense physical, emotional, and social changes. During this time, young people begin to seek more independence and form their own identities, which often involves building social relationships outside the family environment.

Regarding family support, the results of the study by Hermeto *et al.* [23] reinforce that in dysfunctional families or family environments marked by conflict

and a lack of clear rules, as well as parents' disinterest in their children's activities, there is a significant increase in the risk of drug use, depression, and neurological disorders among children and adolescents. A study conducted with 1265 adolescents indicated that alcohol consumption was higher among those whose parents or guardians showed no interest in their social lives [24]. Within this perspective, the study by Malta *et al.* [16] concluded that family supervision acted as a protective factor against the use of psychoactive substances among schoolchildren. Thus, it is reasonable to consider that social and familial support can protect and promote health.

Another issue that deserves to be evaluated among adolescents is the cycle of friendships. In a survey by the Global School Health Survey (GSHS), which included 76,982 high school students from 25 countries in Latin America and the Caribbean, it was found that 18.1% of students reported feeling lonely most of the time or not having close friends [25]. Our results indicate a lower percentage of students without friends. However, it is prudent not to correlate these data, as our sample of participants was considerably smaller compared to the results of the study.

The studies by Asante *et al.* [26], Peltzer *et al.* [27], and Fernandes *et al.* [18] found no positive relationship between the number of friends and mental health, leading these authors to refute this hypothesis. In contrast, the study by Mak *et al.* [28] evidenced a positive association between depressive symptoms and the number of friends mentioned by the participants. Furthermore, this latter study suggests that, under certain circumstances, having friends can act as a protective factor, as social isolation is often related to risk behaviors.

Regarding school support, several students reported that they do not feel welcome. Unfortunately, lack of support can impact academic performance, causing issues such as loss of concentration, learning difficulties, school dropout, aggression, and anxiety [29]. These results highlight the need for schools to reassess their approach to students, considering the high number of students who do not view their school as a welcoming environment and, consequently, as a companion and partner during times of difficulty.

Participants reported having experimented with drugs, such as alcohol and cigarettes (10.6%). It is common in studies to find that individuals have experiences with both legal and illegal drugs during adolescence [30]-[32]. According to a study by Jesus *et al.*, there is a strong association between drug experimentation, such as tobacco, and age, school year, and the number of friends who smoke [32]. The authors found that students aged 17 to 19 consumed tobacco three times more than students aged 11 to 13. In terms of school year, older students used tobacco four times more than those in sixth or seventh grade. It was also observed that the greater the number of friends who smoke, the higher the rate of cigarette experimentation among schoolchildren.

Another issue evaluated in this study was the motivation for drug use among students. The main reasons identified were curiosity, escape from family conflicts,

and peer influence, as presented in **Table 1**. Similar motivations were found in the literature: Ajibade *et al.* [33] reported that participants also mentioned overcoming problems and curiosity as motivating factors. On the other hand, Soares *et al.* highlighted that the main reasons included alleviating existential crises, forming social bonds, and seeking fun [34]. Thus, the results obtained in our study are aligned with those found in the literature.

5. Conclusions

It is essential to highlight that the school environment is an effective strategy for the prevention, promotion, and discussion of health-related topics. Furthermore, schools can facilitate referrals to specialized services. Thus, their goal should include healthy socio-emotional development and optimization of learning. Similarly, extension activities promoted by universities are crucial for provoking questions and reflections on mental health, stimulating dialogue and promoting health education. To achieve these objectives, it is vital to develop projects that investigate characteristics related to individual and social issues as well as substance use, aiming to better understand the local community and implement tailored actions.

The results of this study indicate factors that can compromise the mental health of young people, such as loneliness, changes in sleep patterns, lack of school support, and drug use. In this sense, this project has sought to promote various educational actions focused on the well-being and mental health of participants. Lectures, workshops, and meetings were conducted, all aimed at strengthening students' self-esteem and addressing their needs with school administration.

6. Future Perspectives

Looking ahead, future research should delve deeper into the complex relationship between mental health, social dynamics, and substance use among young people, with a particular focus on identifying effective early intervention strategies. It would be valuable for investigators to conduct additional analyses based on living situations, exploring whether adolescents who experience higher levels of loneliness have a greater propensity to engage in alcohol or drug use. This could provide critical insights into the underlying factors driving substance use and mental health challenges. Additionally, examining the role of school environments in fostering both academic success and emotional well-being should be prioritized. Research could investigate the effectiveness of specific school-based mental health programs and their long-term impact on building resilience and enhancing coping mechanisms among students. The contribution of community involvement and university extension activities in raising awareness and promoting mental health education should also be explored. By developing tailored projects that address the unique needs of different communities, future studies can help shape more effective, localized prevention and support strategies. These efforts would not only deepen our understanding of the challenges facing adolescents but also guide the creation of comprehensive frameworks to support their mental health

and overall well-being.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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