

Examining Adolescent Substance Abuse: Factors and Correlates

Muhammad Suleman

sulemankhann266@gmail.com

Psychologist, Department of Psychology, Federal Urdu University of Arts Science and Technology, Karachi

Atiya Khatoon

Assistant Professor, Department of Psychology Federal Urdu University of Arts Science and Technology, Karachi

Ibarat Ali Laghari

ibarat.laghari@gmail.com

Department of Psychology University of Karachi

Nusrat Jabeen

nusrat.psy@gmail.com

Psychologist, Benazir Shaheed Anti Narcotics Force Model Addiction Treatment and Rehabilitation Center,
Manghopir, Karachi

Corresponding Author: * Muhammad Suleman sulemankhann266@gmail.com

| | | | |
|-----------------------------|----------------------------|-----------------------------|------------------------------|
| Received: 10-07-2025 | Revised: 06-08-2025 | Accepted: 20-08-2025 | Published: 06-09-2025 |
|-----------------------------|----------------------------|-----------------------------|------------------------------|

ABSTRACT

Adolescent substance abuse can have serious, long-lasting consequences for one's physical and mental health as well as one's ability to learn, interact with others and pursue future opportunities. The most significant worldwide public health issue is substance misuse, which first appears in teenagers. The study explores the relationship between Substance abuse and Parenting style, peer pressure, social media engagement, personality traits, and illegal activity among adolescents. A quantitative study design and stratified sampling technique was used in the research. Five instruments were used in research and data was collected from 150 participants with the mean age ($M=16.340$, $SD=2.084$) and all participants were adolescents. The participants were recruited in various government and private drug rehabilitation centers in Karachi, Pakistan. The results show that Parenting style and peers pressure has no correlate with substances abuse Authoritative ($r=.020$, $p>0.05$), Authoritarian ($r=.099$, $p>0.05$) and Permissive ($r=-.115$, $p>0.05$) peer pressure ($r=.126$, $p>0.05$). whereas substance abuse shows negative correlate with social media engagement among adolescents and ($r=-.129$, $p>0.05$). Personality traits has no correlate with substance abuse Extraversion ($r=.044$, $p>0.05$), Agreeableness ($r=.010$, $p>0.05$), Conscientiousness ($r=.001$, $p>0.05$), Neuroticism ($r=-.023$, $p>0.05$), Openness ($r=-.062$, $p>0.05$) moreover Illegal activity found to be positively correlate with substances abuse and ($r=.037$, $p<0.05$). This finding will help to understand about substance abuse among adolescents.

Keywords: Parenting style, peers' pressure, social media engagement, personality traits, illegal activity, Pakistan.

INTRODUCTION

Addiction may be a never-ending, agonizing battle for the drug user, pain is unnecessarily increased when they are denied access to evidence-based treatment or face prejudice. Drug use may have long-lasting effects that harm friends, family members, coworkers, and even whole generations. In the early years of puberty, drug usage can be particularly detrimental to one's physical and emotional well-being. Crime and violence are associated with illegal drug markets (Squeglia et al., 2009). Adolescent years are a crucial developmental period since this is when future patterns of substance use are frequently established. Risks

for heavy usage and drug abuse are substantially correlated with the amount and frequency of use at this time (World Drug Report, 2018). Since substance abuse has been connected to a number of long-term negative consequences, including ongoing drug use and dependency, mental health issues, and other challenges with psychosocial adjustment in adulthood, teen substance use continues to be a major public health and policy priority (Nair et al., 2022). The most important factor affecting a child's substance use was the drug addiction of their parents. (Zaman et al., 2015). Pakistan was dubbed the world's "Most Heroin-Addicted Country" in 2014 (Quigley, 2014). The prevalence of drug addiction issues in some families seems to be higher than what would be expected given the existence of an addictive environment at home.

Baumrind (1967) defined the following four parenting philosophies using a variety of techniques, including naturalistic observation, parental interviews, and many others. We are well aware that, family plays a significant role in an individual's development since it serves as the foundation for human socialization (Becoña et al., 2012). Parents with weak control, inadequate monitoring, and inconsistent discipline produced teenagers that abused alcohol and other drugs to high levels (Brewer, 2017). Support and control are the two main parenting aspects that are the subject of the majority of studies, where there is a tendency to be a link between higher chance of substance use and limited support and slack regulation. Most current study's findings, which indicate that strong family ties and sufficient parental supervision are linked to lower teenage drug use. (Adalbjarnardottir & Hafsteinsson, 2001).

The other main factor is Peer pressure that influence adolescents toward substance abuse. For young people who grow up in a dysfunctional family environment, such as one with permissive parents, the influence of the peer group becomes especially widespread. Therefore, the college and university system, which personifies independence and freedom, offers a genuine setting for peer influence to wax strong on people. Peer pressure may be a significant factor in pupils abusing drugs in such circumstances. Alarming rates of drug usage among student, within age range of 14 to 22, have been shown in several research. The college and university experience are distinctive because it gives students their first chance to interact with a bigger group of peers unsupervised by their parents. (Abikoye et al., 2014).

Peers can stimulate interest in literature, music, or extracurricular activities, or they might encourage one another to pick up new skills. However, peers can also have a detrimental or harmful impact. They could encourage one another to engage in risky behaviors including lying, stealing, skipping. Researchers show that differential association is a significant predictor of drug use and easily draw the conclusion that it reflects peer pressure (Burkett and Warren., 1987).

Personality traits are also frequently seen as powerful indications of individual variations in vulnerability to substance reinforcement. Numerous researches have shown that five factor model (FFM) personality traits have an impact on usage of alcohol . For instance, it was repeatedly discovered that alcohol use issues were highly related with high neuroticism, poor agreeableness, and low conscientiousness (Chen et al., 2019).

The huge volume of research demonstrating the evolution of personality characteristics, little is understood about the factors that cause these changes. Here, we investigate drug usage as a wide mechanism that might result in personality alterations. The consequences of drug usage on personality change may be biologically mediated (Kroencke et al., 2021). Numerous empirical studies linking drug use and agreeableness have focused on two underlying characteristics: anger and violence. Greater levels of alcohol, cigarette, and marijuana usage are each correlated with greater levels of hostility and aggressiveness measured in childhood, adolescence, and early adulthood (Turiano et al., 2012).

There are more opportunities for dangerous products and behaviors to be promoted and socially disseminated through digital media. We briefly review the data on how teens are exposed to positive

depictions of addictive substances like alcohol, cigarettes, and marijuana on social media and other online platforms, as well as behaviors like gambling. (Romer & Moreno, 2017). Public health agencies consider the use and misuse of drugs by young adolescents to be a serious problem. Peer pressure, school and/or home contexts, and other socio environmental variables that frequently increase or decrease children's and young adolescents' susceptibility to substance misuse have previously been widely discussed. However, there are additional elements that might potentially lead to substance misuse (Buja et al., 2018). Lenhart (2015) found that 71% of teenagers between the ages of 13 and 17 reported using multiple social networking sites, 24% reported using the internet "almost constantly," and 92% reported using it daily. Teenagers who use social media are more likely to suffer from eating disorders, sleep problems, and depression (Lin et al., 2016).

In this sense, social media has made it possible for these businesses to promote to young people even while doing so is illegal or is intended to be subject to internal regulation. Teenagers now have more opportunity to be exposed to social media advertising because of the booming cannabis sector. The beginning of substance use is linked to exposure to drug use pictures (Dal Cin et al., 2012). Even though 60% of parents said they had "ever" checked their teen's social media profiles, only 35% of them knew the password to at least one of their teen's accounts, and 39% had ever used parental controls for their teen's online activities, according to a Pew Research Center survey of parents of teenagers (Costello & Ramo., 2017). Keeping in view all the literature, the current study aims to investigate substance abuse and its factors or correlates like parenting, peer pressure, personality traits, engagement of social media and risk of illegal activities specifically among the adolescents in Pakistan.

Hypothesis

Hypothesis 1: Substance abuse would be correlated with parenting style among adolescents.

Hypothesis 2: Substance abuse would be correlated with peer's pressure among adolescents.

Hypothesis 3: Substance abuse would be positively correlated with social media engagement among adolescents.

Hypothesis 4: Substance abuse would be correlated with personality traits among adolescents.

Hypothesis 5: There would be correlation between Substance abuse and illegal actions/activity among adolescents.

Rationale of the Study

The research aims to provide detailed information about those correlational factors which influence adolescents toward substance abuse. Parenting style is the most essential factor that needs to be identified in research because the role of parents is very important in every individual life. They shape their behavior and this behavior consequence is sometimes positive and sometimes negative. The negative consequences lead to adolescent's substance abuse. (Becoña et al., 2012). The other main factor in this study is peers' pressure because after parents, adolescents are more engaged with their peers because they are in the same grade and level of education. Peers can stimulate enthusiasm in literature, music, or extracurricular activities or help one another discover new skills. However, peers can also have a detrimental or harmful impact.(Umashankari et al., 2020). Numerous studies demonstrate that differential association is a strong predictor of drug use, and it is simple to conclude that this is a reflection of peer pressure. (Burkett and Warren., 1987).

Teenagers' usage of social media is the other key indication in recent years since it provides more opportunities for harmful products and behaviors to be promoted and socially disseminated. We briefly review the data on how teens are exposed to positive depictions of addictive substances like alcohol, cigarettes, and marijuana on social media and other online platforms, as well as behaviors like gambling. (Romer & Moreno., 2017).

Another most important factor is personality traits because different kinds of feelings, emotions and mood states motivate adolescents to use substances. It was repeatedly discovered that alcohol use issues were highly related with high neuroticism, poor agreeableness, and low conscientiousness (Chen et al., 2019). Researchers investigate drug usage as a wide mechanism that might result in personality alterations. The consequences of drug usage on personality change may be biologically mediated (Kroencke et al., 2021).

The main objectives of this study are parenting style, peers' pressure, social media engagement, personality traits and illegal activity that are more linked with adolescent's substance abuse.

The results of this study help in designing proper plans and understanding about all factors that influence adolescents towards substance abuse.

METHODOLOGY

Sample

The study is based on Total 150 adolescent participants. The participants were recruited from various government and private drug rehabilitation centers in Karachi Pakistan. Participants were selected with the help of stratified sampling technique. Adolescent's age range was 10 to 19, and adolescents who have disability were excluded in the research. Who have been involved in past any kind of illegal action or activity, or have been victim of any kind of harassment like physical and sexual include in the research.

Instruments

Drug use questionnaire (DAST - 20): The DAST, or substance abuse screening test, was created as a quick self-report assessment. "Drug misuse is defined in the statements as (1) using prescription or over-the-counter medications in excess of what is advised and (2) using substances for purposes other than medical treatment. The various drug classes include, for example, cannabis (including marijuana and hash), solvents or glue, tranquilizers (like valium), barbiturates, cocaine, stimulants, hallucinogens (like LSD), and opioids (like heroin). Note that the questions do not include questions about alcoholic beverages.

The DAST-20 can assist in early detection of drug misuse or dependence problems. Early detection of these disorders can be essential for intervention and treatment, possibly halting the progression of drug-related diseases. The questionnaire offers a measurement of drug-related behaviors and effects that is objective. This can be useful in determining the extent of a person's drug use for researchers and medical experts. In a variety of medical settings and addiction treatment facilities, the DAST-20 is frequently utilized as a screening tool. It can swiftly identify those who might require more evaluation and assistance for their drug-related concerns. High DAST-20 scores can help direct therapy strategy for those patients. The outcomes can be used by healthcare professionals to modify treatments, such as counseling, detoxification, or rehabilitation, to meet the unique requirements of the patient. The DAST-20 can be used to track a patient's development after therapy starts. An improvement in drug-related behaviors and effects may be indicated by a decline in DAST-20 scores. The DAST-20 may be used by researchers researching substance misuse and addiction to gather standardized data, making it simpler to compare findings across studies and populations. High scoring DAST-20 test takers may be directed to specialized

addiction treatment facilities where they can get better assistance and care. Test-retest reliability evaluates the instrument's consistency across time. When people retest the DAST-20 after a specific amount of time, their results typically remain constant, suggesting that the test-retest reliability of the DAST-20 is generally good. Validity analysis looks at how well the DAST-20 results match up with other recognized drug use measures or related domains. Studies have shown strong connections between DAST-20 scores and other measures of substance use, which supports criterion-related validity.

Perceived Parenting Style Scale (PPSS): Divya and Manikandan (2013) To find out how kids perceive their parents' behavior, use the Perceived Parenting Style Scale. Permissive, authoritative, and authoritarian are the three aspects of the subject's perceived parenting style that are assessed. The test consists of thirty items, each with a five-point Likert scale response.

The measure offers a methodical approach to comprehending how people see their parents' parenting approaches. This can be helpful for researchers looking to compare parenting approaches and a range of outcomes, including child development, behavior, and psychological health. This scale may be used by researchers to gather information on perceived parenting practices, enabling them to look at how various parenting practices may affect children's attitudes, behaviors, and results. This measure can assist therapists in modifying their interventions in a therapeutic setting based on the perceived parenting style of a client. It might help to spot areas where clients may be struggling with unsolved problems or emotional conflicts stemming from their childhood. Crosscultural scholars may find this measure useful in examining how various parenting styles are perceived in various cultures and how these differences may impact individuals' development and well-being. To determine the reliability of the scale According to the Cronbach Alpha coefficients for each kind, the authoritarian style has an Alpha coefficient of 0.81, the authoritative style 0.79, and the permissive style 0.86. The perceived parenting style assessment shows a respectable degree of reliability for each type. The metric has face validity, according to the authors.

Peers Pressure Questionnaire-Revised: The peers pressure questionnaire-revised by Saini and Sunil (2016). The purpose of this survey is to inquire about negative particular actions that have been influenced by peer pressure. We can detect the bad behavior they were experiencing with the help of this questionnaire. Each of the 25 items on the test has an answer on a five-point Likert scale. Peer pressure is measured using an accurate scale. The consistency of the items in a measure and the measure's stability over time are the two primary concerns with regard to dependability. Cronbach's Alpha is the most often used way for calculating internal consistency reliability, while there are other approaches as well. (Price & Mueller, 1986).

Social Media Engagement Questionnaire (SME): social media (like Facebook or Twitter) by filling out a social media engagement questionnaire. Przybylski, Murayama, DeHann, & Gladwell (2013). Social media engagement questionnaire has 5 items. The computation of individual scores involves adding up the answers to each of the five items, which yields a dependable composite measure ($\alpha = .82$ to $.89$).

Big five inventory (BFI): This is a 44-item test that gauges a person's personality on the Big Five Factors (dimensions) (Goldberg, 1993). Subsequently, every element is further separated into aspects of personality. The graphic reconstructed from (John & Srivastava, 1999) represents the Big Five Factors. (Neuroticism versus emotional stability; conscientiousness versus lack of direction; agreeableness versus hostility; extraversion versus introversion; openness versus proximity to experience.) Validity is the extent to which the test evaluates what it is meant to measure. The BFI has been shown to be reliable in numerous research. The BFI's Cronbach's alpha values often fall between 0.70 and 0.80, suggesting a high degree of internal consistency reliability. As a result, the BFI's products are internally consistent.

Design

The study's volunteers were initially asked to read the consent form, and they were informed that there is no harm and also ensure that it is only for academic purpose and they had the option to withdraw from the study at any time. There were many drug addict patients in a state of detoxification. We had to wait for their recovery, after they recovered, then they were approached to fill the research form. First of all, completing the consent form, after completing the consent form they were asked to read demographic forms which are related to such as age, race, socio economic status, no of siblings, birth order, educational institute and marital status etc. After demographics develop a proper understanding of scale items and operationally defined to understand better and then asked to complete all of the questionnaires that were provided on the papers. Parenting style, peer pressure, social media engagement, substance abuse, and personality traits were all included in the set of questionnaires. Following that, all questionnaires were assessed in accordance with the prescribed standards and statistical analysis was carried out. The main goal of the study is to find out the relationship between substance abuse and other variables like parenting style, peer pressure, social media addiction and personality traits and try to explore those factors which are correlated with substance abuse.

RESULTS

Table 1: Descriptive characteristics of Participants

| Variable | N | % |
|-----------------------------|-----|------|
| Socioeconomic Class | | |
| Upper Class | 8 | 5.4 |
| Upper Middle Class | 52 | 35.1 |
| Middle Class | 29 | 19.6 |
| Lower Middle Class | 50 | 33.8 |
| Lower Class | 9 | 6.1 |
| Family System | | |
| Nuclear | 115 | 77.2 |
| Joint | 43 | 22.8 |
| Parents Alive | | |
| Mother Alive | 27 | 18.4 |
| Father Alive | 15 | 10.2 |
| Both Alive | 104 | 70.7 |
| Substance Use Mostly | | |
| Cannabis | 53 | 35.3 |
| Solvent | 12 | 8 |
| Tranquilizers | 3 | 2 |
| Cocaine | 1 | 7 |
| Stimulants | 51 | 34 |

| | | | |
|-------------------------|---------------|----|------|
| | Hallucinogens | 1 | 7 |
| | Narcotics | 29 | 19.3 |
| Illegal Activity | Yes | 73 | 49 |
| | No | 76 | 51 |

Table No. 02: Correlation between substance abuse, authoritative, authoritarian and permissive.

| Variable | <i>n</i> | <i>M</i> | <i>SD</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> |
|---------------------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|
| 1. Substance Total | 150 | 27.553 | 3.895 | - | | | |
| 2. Authoritative | 150 | 33.186 | 7.885 | -0.020 | - | | |
| 3. Authoritarian | 150 | 30.986 | 6.128 | -0.099 | -0.451 | - | |
| 4. Permissive | 150 | 29.840 | 6.622 | -0.115 | 0.342 | 0.077 | - |

Note: N=150, p>0.05.

Table 2 shows that there is no significant correlation between authoritative, authoritarian, permissive and substance abuse.

Table No. 03: Correlation between substance abuse, extraversion, agreeableness, conscientiousness, neuroticism and openness.

| Variable | <i>n</i> | <i>M</i> | <i>SD</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>6</i> |
|-----------------------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1. Substance Total | 150 | 27.553 | 3.895 | - | | | | | |
| 2. Extraversion | 150 | 23.313 | 3.853 | 0.044 | - | | | | |
| 3. Agreeableness | 150 | 23.573 | 4.885 | 0.010 | 0.578 | - | | | |
| 4. Conscientiousness | 150 | 24.086 | 4.125 | -0.001 | 0.576 | 0.483 | - | | |
| 5. Neuroticism | 150 | 23.426 | 4.333 | -0.023 | 0.511 | 0.405 | 0.538 | - | |
| 6. Openness | 150 | 24.920 | 6.664 | -0.062 | 0.422 | 0.370 | 0.526 | 0.331 | - |

Note: N=150, p>0.05.

Table 3 shows that there is no significant correlation between extraversion, agreeableness, conscientiousness, neuroticism, openness and substance abuse.

Table No.04: Correlation between illegal activity, social media, peer pressure and substance abuse

| Variable | <i>n</i> | <i>M</i> | <i>SD</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> |
|----------------------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|
| 1. Substance Total | 150 | 27.553 | 3.895 | - | | | |
| 2. Illegal Activity | 150 | 1.510 | 0.501 | 0.171 | - | | |
| 3. Social Media | 150 | 17.840 | 11.089 | -0.129 | 0.134 | - | |
| 4. Peer Pressure | 150 | 80.953 | 16.1845 | -0.126 | -0.322 | -0.066 | - |

Note: N=150, P< 0.05

Table 4 shows that there is a positive correlation between illegal activity and substance abuse. There is negative significant correlation between social media and substance abuse and no significant correlation between peer pressure and Substance abuse, $P > 0.05$.

DISCUSSION

The current research had main objectives, we focused on the relationship of substance abused with other variables used in research.

Hypothesis: 1

It was hypothesized that there would be significant positive correlation between Substance abuse and Permissive parenting style. Authoritarian parenting style and authoritative parenting style among adolescents. The result shows that, Authoritative ($r = -.020$, $p > 0.05$) Authoritarian ($r = .099$, $p > 0.05$) Permissive ($r = -.115$, $p > 0.05$). Authoritative, Authoritarian and Permissive parenting style is not correlated with substance abuse.

Hypothesis: 2

It was hypothesized that Substance abuse would positively correlate with peer's pressure among adolescents. As was expected according to previous researchers there was a positive correlation of substance abuse and peer's pressure. The result shows that ($r = -.126$, $p > 0.05$) Peer pressure is not correlated with substance abuse. Reducing the association between peer pressure and substance misuse may also be possible through instructional programs and efforts that emphasize substance addiction prevention and Close-knit family structures and strong family bonds may operate as a buffer against peer pressure. Adolescents who grow up in a loving household may be less vulnerable to harmful peer pressure.

Hypothesis: 3

It was hypothesized that Substance abuse would positively correlate with social media engagement among adolescents. The result shows that ($r = -.129$ and $p < 0.05$). Substance is negatively correlated with social media engagement among adolescents.

Hypothesis: 4

It was hypothesized that Agreeableness, Neuroticism and Conscientiousness would be significantly positively correlated with substance abuse. Extraversion and Openness would negatively correlate with substance abuse. The result shows that Extraversion ($r = .044$ and $p > 0.05$)

Agreeableness ($r = .010$ and $p > 0.05$) Conscientiousness ($r = -.001$ and is > 0.05) Neuroticism ($r = .023$ and $p > 0.05$)

Openness ($r = -.062$ and $p > 0.05$). Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness is not correlated with substance abuse. Substance misuse rates can be significantly influenced by the accessibility and availability of substances. Regardless of personality qualities, people may be less likely to abuse substances if they are not easily accessible or if there are rigorous rules. Teens who are dealing with psychosocial stressors including family problems, mental health difficulties, or pressure to perform well in school may be more likely to take drugs. These stressors might not be entirely explained by personality traits; instead, more important external influences might be involved. The intricacy of the association between personality qualities and substance usage may not be fully captured by the research methodologies employed to examine this correlation.

Measurement techniques, sample strategies, and cross-cultural differences can all affect the results.

Hypothesis: 5

It was hypothesized that Substance abuse would positively correlate with illegal activity among adolescents. The result shows that ($r = .171$ and p value is < 0.05). Substance is positively correlated with illegal activity among adolescents.

IMPLICATIONS, RECOMMENDATIONS AND SUGGESTION

Social media has the potential to be a very effective tool for educating people about the dangers and repercussions of drug usage. Social media may be used by rehab facilities to disseminate information, success stories, and instructional tools.

Certain drawbacks have been noted in this study, such as the fact that all research participants were from Karachi, and the sample only contained a tiny degree of organization diversity. Future research should focus more broadly with applicable methodologies.

Another suggestion is that community leaders, parents, teachers, medical experts, and law enforcement. Together, we can make a difference in the lives of teenagers by fostering a compassionate and supportive atmosphere that lessens their vulnerability to substance misuse and criminal activity.

CONCLUSION

Finally, the aim of this study is to find out the relationship between substance abuse and influencing or correlated factors like parenting, personality traits, peer pressure, social media engagement and illegal activity among adolescents, results show that substance abuse is correlated with illegal activity with social media engagement among adolescent's implications, recommendation of the research findings also highlighted.

REFERENCES

- Abikoye, G. E., Sholarin, M. A., & Adekoya, J. A. (2014). Parenting styles and peer-pressure as predictors of substance abuse among university students. *Psychology and Behavioral Sciences*, 3(2), 55-59.
- Adalbjarnardottir, S., & Hafsteinsson, L. G. (2001). Adolescents' perceived parenting styles and their substance use: Concurrent and longitudinal analyses. *Journal of Research on Adolescence*, 11(4), 401-423.
- Baumrind, D., & Black, A. E. (1967). Socialization practices associated with dimensions of competence in preschool boys and girls. *Child development*, 291-327.
- Becoña, E., Martínez, Ú., Calafat, A., Juan, M., Fernández-Hermida, J. R., & Secades-Villa, R. (2012). Parental styles and drug use: A review. *Drugs: education, prevention and policy*, 19(1), 1-10.
- Brewer, B. R. (2017). How parenting style relates to adolescent substance abuse in an at-risk male population.
- Buja, A., Gallimberti, L., Chindamo, S., Lion, C., Terraneo, A., Rivera, M., & Baldo, V. (2018). Problematic social networking site usage and substance use by young adolescents. *BMC pediatrics*, 18, 111.

- Burkett, S. R., & Warren, B. O. (1987). Religiosity, peer associations, and adolescent marijuana use: A panel study of underlying causal structures. *Criminology*, 25(1), 109-132.
- Costello, C. R., & Ramo, D. E. (2017). Social media and substance use: What should we be recommending to teens and their parents?. *Journal of Adolescent Health*, 60(6), 629-630.
- Dal Cin, S., Stoolmiller, M., & Sargent, J. D. (2012). When movies matter: exposure to smoking in movies and changes in smoking behavior. *Journal of health communication*, 17(1), 76-89.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, 53(1), 59-68.
- Kroencke, L., Kuper, N., Bleidorn, W., & Denissen, J. (2021). How does substance use affect personality development? Disentangling between-and within-person effects. *Social Psychological and Personality Science*, 12(4), 517-527.
- Lenhart, A. (2015). Teens, social media & technology overview 2015.
- Lin, L. Y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., & Primack, B. A. (2016). Association between social media use and depression among US young adults. *Depression and anxiety*, 33(4), 323-331.
- Nair, N., Elliott, A., Arnold, S., Flachs, A., Beaulieu, B., & Marceau, K. (2022). Adolescent substance use: Findings from a state-wide pilot parent education program. *BMC public health*, 22(1), 1-15.
- Quigley, J. T. (2014). Pakistan: The most heroin-addicted country in the world. *The rising prevalence of injecting drug users could create an HIV/AIDS crisis*.
- Romer, D., & Moreno, M. (2017). Digital media and risks for adolescent substance abuse and problematic gambling. *Pediatrics*, 140(Supplement_2), S102-S106.
- Somani, S., & Meghani, S. (2016). Substance abuse among youth: A harsh reality. *Emerg Med (Los Angel)*, 6(330), 2.
- Squeglia, L. M., Jacobus, J., & Tapert, S. F. (2009). The influence of substance use on adolescent brain development. *Clinical EEG and neuroscience*, 40(1), 31-38.
- Turiano, N. A., Whiteman, S. D., Hampson, S. E., Roberts, B. W., & Mroczek, D. K. (2012). Personality and substance use in midlife: Conscientiousness as a moderator and the effects of trait change. *Journal of research in personality*, 46(3), 295-305.
- United Nations Office on Drugs and Crime. World Drug Report 2018. United Nations publication, Sales No. E. 18. XI. 9 2018.
- Zaman, M., Razzaq, S., Hassan, R., Qureshi, J., Ijaz, H., Hanif, M., & Chughtai, F. R. (2015). Drug abuse among the students. *Pakistan Journal of Pharmaceutical Research*, 1(1), 41-47.