

# Awareness and Attitudes Towards Prevention of Diseases Associated with Drug Use: A Gender-Based Cross-Sectional Study

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**Abstract:** *The present study aimed to assess awareness regarding diseases associated with drug use, examine attitudes towards their prevention, and determine the relationship between awareness and attitudes among men and women. The study also examined whether significant gender differences existed in awareness and attitudes towards the prevention of diseases associated with drug use. A quantitative, descriptive, cross-sectional research design was adopted. The study included 51 participants, comprising 29 male and 22 female participants. Data were collected using a researcher-developed questionnaire consisting of structured questions assessing awareness and attitudes, along with one open-ended question in each section. The closed-ended awareness items were scored to obtain a total awareness score ranging from 0 to 10, while the attitude items were scored to obtain a total attitude score ranging from 10 to 30. Data were analysed using descriptive statistics, an independent samples t-test, and Pearson's Product-Moment Correlation. The findings indicated a mean awareness score of 8.61 (SD = 1.42) and a mean attitude score of 27.57 (SD = 2.20). No statistically significant gender difference was observed in awareness,  $t(49) = 0.074$ ,  $p = 0.942$ , or attitude,  $t(49) = -0.831$ ,  $p = 0.410$ . However, a statistically significant positive relationship was found between awareness and attitudes towards the prevention of diseases associated with drug use,  $r = 0.394$ ,  $p = 0.004$ . The findings suggest that higher awareness was associated with more positive attitudes towards prevention in the present sample. The study highlights the relevance of health education and prevention-oriented initiatives and provides a basis for further research using larger and more diverse samples.*

**Keywords:** Awareness, Attitudes, Drug Use, Disease Prevention, Health Education

## 1. Introduction

Drug use is an important public health concern because of its association with a wide range of physical, psychological and social consequences. The health consequences associated with drug use extend beyond substance dependence and may include infectious diseases, chronic physical health conditions, neurological complications and mental health problems. People who use drugs may also experience multiple health conditions simultaneously, which can further affect their quality of life and increase the complexity of healthcare and prevention efforts [1], [2].

Among the health conditions associated with drug use, infectious diseases such as Human Immunodeficiency Virus (HIV), Hepatitis B and Hepatitis C are of particular concern, especially in the context of unsafe injecting practices. Drug use may also be associated with cardiovascular, respiratory, liver and neurological conditions, as well as mental health difficulties. These health consequences highlight the importance of prevention-oriented approaches that address health risks before they develop into more serious conditions [2], [3].

Disease prevention in the context of drug use involves approaches such as health education, awareness programmes, early intervention and the promotion of healthier and safer behaviours. Awareness is an important component of prevention because knowledge about health risks, signs and symptoms, risk factors and preventive measures can help individuals recognise the potential

consequences associated with drug use. Public awareness and community-based educational initiatives have been used to communicate drug-related health risks and overdose prevention information [1], [4].

However, awareness alone may not necessarily translate into preventive behaviour. Attitudes towards prevention are also important because individuals' beliefs, perceptions and willingness to support or adopt preventive practices may influence their response to health information and prevention initiatives [5].

Previous research has examined awareness, knowledge and attitudes related to drug use, overdose prevention, infectious diseases and harm-reduction approaches. These studies indicate that gaps in knowledge and variations in attitudes may exist across different groups and settings. Research has also highlighted the importance of health education and preventive interventions in improving knowledge and attitudes related to drug-related health risks [1], [4], [6].

Therefore, the present study focuses on assessing awareness regarding diseases associated with drug use and attitudes towards their prevention, while also examining gender differences and the relationship between awareness and attitudes.

Gender may also be relevant when examining awareness and attitudes towards health and disease prevention. Differences between men and women may arise from variations in social experiences, access to health information, health-related

beliefs and other contextual factors. Examining gender differences can therefore provide additional understanding of whether awareness and attitudes towards the prevention of diseases associated with drug use vary between male and female participants.

Against this background, the present study examined awareness regarding diseases associated with drug use and attitudes towards their prevention among men and women. The study further examined whether there were significant differences between male and female participants in awareness and attitudes and investigated the relationship between awareness and attitudes towards the prevention of diseases associated with drug use. The findings may contribute to a better understanding of these psychological and health-related factors and may provide a basis for strengthening health education and prevention-oriented initiatives.

## 2. Review of Literature

Previous research has examined awareness, knowledge, attitudes and preventive approaches related to drug use and its associated health consequences. Studies have particularly highlighted the importance of health education, overdose prevention, infectious disease awareness and supportive approaches to prevention.

Allen et al. examined a public awareness pilot implemented across nightlife venues in New York City and highlighted the role of community-based communication in increasing exposure to information concerning opioid overdose and fentanyl-related risks. The study demonstrated the potential value of public awareness initiatives in communicating drug-related health risks and preventive information [3].

Hanson et al. examined peer-administered naloxone and overdose prevention education in a rural setting. Their findings highlighted the importance of community-based education in improving knowledge regarding opioid overdose and increasing confidence in recognising and responding to overdose situations. These findings support the role of accessible health education in strengthening awareness of drug-related health risks [4].

Research has also identified gaps in awareness regarding specific diseases associated with drug use. Shivaprakash et al. examined Hepatitis C among people who inject drugs in Bengaluru and reported limited awareness of Hepatitis C before contact with treatment services. The findings highlighted the importance of strengthening awareness, testing and access to appropriate health services among populations affected by drug use [2].

Jacka et al. examined the coverage of interventions intended to prevent HIV and Hepatitis C among people who inject drugs and highlighted the importance of prevention interventions and access to services in reducing drug-related infectious disease risks [1].

Similarly, Abraham et al. examined adolescents' knowledge regarding opioid medication safety and found that misconceptions regarding safe medication practices

remained despite participants' perceptions of their own knowledge, supporting the need for appropriate educational interventions [5].

In relation to attitudes, research has examined public and professional perceptions of treatment, harm reduction and overdose prevention. Livingston et al. reviewed interventions designed to reduce stigma associated with substance use disorders and highlighted the potential of educational approaches to influence attitudes [7].

Kennedy-Hendricks et al. examined public attitudes towards opioid-related policies and found support for several public health and prevention-oriented approaches [8].

Kruis et al. examined first responders' perceptions of medication for addiction treatment and found that stigma-related beliefs were associated with attitudes towards treatment [9].

Javadi et al. investigated attitudes towards harm reduction among substance use treatment professionals and identified the relevance of professional perspectives to harm-reduction approaches [10].

Reynolds et al. examined student attitudes towards harm-reduction strategies and found differences in attitudes according to the type of harm-reduction approach presented [11].

Bascou et al. evaluated an opioid overdose prevention training programme and reported improvements in knowledge and attitudes following the training [12].

Socia et al. examined public support for different forms of overdose prevention sites and demonstrated that the way prevention approaches are presented may influence public attitudes towards them [13].

Overall, the literature indicates that awareness and attitudes are important components of drug-related health prevention. Existing studies have examined these aspects in specific populations, including people who use drugs, adolescents, students, healthcare or treatment professionals and members of the general public.

However, there is a need for further research examining awareness regarding diseases associated with drug use and attitudes towards their prevention within the same sample, while also examining whether these variables are related and whether they differ according to gender. The present study addresses this area by examining awareness, attitudes, gender differences and the relationship between awareness and attitudes among men and women.

## 3. Methodology

### 3.1 Research Design

The present study adopted a quantitative, descriptive, cross-sectional research design. The study was non-experimental in nature, as no variables were manipulated and data were collected from participants at a single point in time. The

study examined awareness regarding diseases associated with drug use and attitudes towards their prevention among men and women. Comparative analysis was conducted to examine differences between male and female participants and correlational analysis was used to examine the relationship between awareness and attitudes.

### 3.2 Participants and Sampling

The study was conducted among adult men and women from the general population who were aged 18 years and above. A convenience sampling technique was used to recruit participants. Data were collected online through a Google Forms questionnaire, which was circulated through online platforms and personal networks. Participation was voluntary.

A total of 51 participants were included in the final sample, comprising 29 male participants and 22 female participants. Participants were included if they were adults aged 18 years or above, were willing to participate voluntarily and were able to understand and respond to the questionnaire. Responses that did not meet the study requirements were excluded from the final analysis.

### 3.3 Research Tool

Data were collected using a researcher-developed structured questionnaire. The questionnaire consisted of a socio-demographic data sheet and two sections assessing awareness and attitudes towards the prevention of diseases associated with drug use. The awareness section consisted of 11 questions, of which 10 were closed-ended items used for scoring and one was an open-ended question. The closed-ended items assessed participants' awareness regarding diseases associated with drug use, related health risks, and preventive aspects.

The attitude section also consisted of 11 questions, including 10 closed-ended items used for scoring and one open-ended question. The attitude items assessed participants' views and perceptions towards the prevention of diseases associated with drug use. The open-ended questions were included to obtain additional descriptive information from participants and were not included in the quantitative scoring or reliability analysis.

### 3.4 Scoring and Reliability

The 10 closed-ended awareness items were scored to obtain a total awareness score ranging from 0 to 10, with higher scores indicating greater awareness. The 10 attitude items were scored to obtain a total attitude score ranging from 10 to 30, with higher scores indicating more positive attitudes towards prevention.

The internal consistency of the awareness items was assessed using Cronbach's Alpha. The 10-item awareness scale demonstrated a Cronbach's Alpha coefficient of 0.570. The internal consistency of the 10-item attitude scale was also assessed using Cronbach's Alpha and yielded a coefficient of 0.417. The open-ended questions were excluded from both scoring and reliability analysis.

### 3.5 Procedure

The questionnaire was administered online using Google Forms. The introductory section of the questionnaire provided participants with information regarding the purpose and objectives of the study, the voluntary nature of participation, and the confidentiality and anonymity of their responses. The estimated time required to complete the questionnaire was approximately 35 minutes. Participants provided informed consent electronically before proceeding with the questionnaire. The questionnaire was configured to permit only one response per email address to prevent duplicate submissions. After completion of data collection, the responses were exported and entered into IBM SPSS Statistics for analysis.

### 3.6 Ethical Considerations

Participation in the study was voluntary. Participants were informed about the purpose and objectives of the research and were provided with information regarding the voluntary nature of participation and the confidentiality and anonymity of their responses. Informed consent was obtained electronically before participants proceeded with the questionnaire. Although participants were required to use a valid email address to access and submit the questionnaire, email addresses were not retained as part of the research dataset and were not used for participant identification. No personally identifiable information was collected or retained for the purpose of the study.

Participants could discontinue participation at any stage before submitting their responses without penalty or adverse consequences. The collected data were securely maintained and were accessible only to the researcher. The data were used solely for academic and research purposes, and findings were reported in aggregate form to ensure that individual participants could not be identified.

### 3.7 Statistical Analysis

The collected data were analysed using IBM SPSS Statistics. Descriptive statistics were used to summarise the demographic characteristics and the awareness and attitude scores of the participants. An independent-samples t-test was conducted to examine gender differences in awareness and attitudes towards the prevention of diseases associated with drug use. Pearson's Product-Moment Correlation was used to examine the relationship between awareness and attitudes. Statistical significance was evaluated at the 0.05 level.

## 4. Results

### 4.1 Participant Characteristics

The study included 51 participants, comprising 29 male participants (56.86%) and 22 female participants (43.14%). The largest proportion of participants belonged to the 36–45 years age group, followed by the 46–55 years age group. In terms of educational qualification, most participants were postgraduates. Regarding occupation, the majority were employed, while most participants resided in urban areas.

#### 4.2 Descriptive Statistics of Awareness and Attitude Scores

The overall awareness and attitude scores of the participants were examined using descriptive statistics. The mean awareness score was 8.61 (SD = 1.42), with scores ranging from 4 to 10. The mean attitude score was 27.57 (SD = 2.20), with scores ranging from 18 to 30. These findings indicate the overall levels of awareness regarding diseases associated with drug use and attitudes towards their prevention among the participants.

**Table 1:** Descriptive Statistics of Awareness and Attitude Scores

| Variable  | N  | Minimum | Maximum | Mean  | SD   |
|-----------|----|---------|---------|-------|------|
| Awareness | 51 | 4       | 10      | 8.61  | 1.42 |
| Attitude  | 51 | 18      | 30      | 27.57 | 2.20 |

#### 4.3 Gender-wise Comparison of Awareness and Attitude

Awareness and Attitude Scores were compared between male and female participants using an independent-samples t-test. Male participants had a mean awareness score of 8.62 (SD = 1.59), whereas female participants had a mean awareness score of 8.59 (SD = 1.18). For attitude, male participants had a mean score of 27.34 (SD = 2.38), while female participants had a mean score of 27.86 (SD = 1.96).

**Table 2:** Gender-wise Mean and Standard Deviation of Awareness and Attitude Scores

| Gender | N  | Awareness Mean | Awareness SD | Attitude Mean | Attitude SD |
|--------|----|----------------|--------------|---------------|-------------|
| Male   | 29 | 8.62           | 1.59         | 27.34         | 2.38        |
| Female | 22 | 8.59           | 1.18         | 27.86         | 1.96        |

The independent-samples t-test showed that there was no statistically significant gender difference in awareness scores,  $t(49) = 0.074$ ,  $p = 0.942$ . Similarly, no statistically significant gender difference was observed in attitude scores,  $t(49) = -0.831$ ,  $p = 0.410$ . Both p-values were greater than the 0.05 level of significance.

**Table 3:** Independent-Samples t-Test for Gender Differences in Awareness and Attitude

| Variable  | t      | df | p     |
|-----------|--------|----|-------|
| Awareness | 0.074  | 49 | 0.942 |
| Attitude  | -0.831 | 49 | 0.410 |

#### 4.4 Relationship Between Awareness and Attitude

Pearson's Product-Moment Correlation was used to examine the relationship between awareness regarding diseases associated with drug use and attitudes towards their prevention. A statistically significant positive correlation was found between awareness and attitude scores,  $r = 0.394$ ,  $p = 0.004$ ,  $N = 51$ . This indicates that participants with higher awareness scores tended to report more positive attitudes towards the prevention of diseases associated with drug use. Since the p-value was less than 0.05, the relationship was statistically significant in the present sample.

**Table 4:** Pearson's Product-Moment Correlation Between Awareness and Attitude

| Variables              | N  | r     | p     |
|------------------------|----|-------|-------|
| Awareness and Attitude | 51 | 0.394 | 0.004 |

#### 4.5 Summary of Open-Ended Responses

In addition to the structured items, participants responded to one open-ended question in each section of the questionnaire. These responses were reviewed descriptively and were not included in the calculation of the total awareness or attitude scores or in the reliability analysis.

For the open-ended awareness question, participants were asked to name one disease associated with drug use. The responses included HIV/AIDS, cancer, liver-related diseases, cardiovascular and heart-related conditions, mental health disorders, hepatitis, tuberculosis and kidney-related conditions. Some participants identified more than one disease, while a small number indicated that they were unsure or did not know of a specific disease. These responses provided additional insight into participants' understanding of the health consequences associated with drug use.

For the open-ended attitude question, participants were asked to identify the most important way to prevent diseases associated with drug use. Responses commonly referred to awareness and education, health education programmes and public or community-based awareness initiatives. Other responses highlighted avoiding drug use, abstinence, healthy behaviours, social and community support, government policies, control of drug supply and preventive or harm-reduction practices. These responses provided additional insight into participants' perspectives on approaches to preventing diseases associated with drug use.

#### 4.6 Summary of Results

Overall, the participants had a mean awareness score of 8.61 (SD = 1.42) and a mean attitude score of 27.57 (SD = 2.20). No statistically significant gender differences were observed in awareness or attitudes towards the prevention of diseases associated with drug use. However, a statistically significant positive relationship was found between awareness and attitudes, indicating that higher awareness was associated with more positive attitudes towards prevention in the present sample.

### 5. Discussion

The present study examined awareness regarding diseases associated with drug use, attitudes towards their prevention, gender differences in these variables, and the relationship between awareness and attitudes. The findings provide insight into how awareness and preventive attitudes may be related within the study sample.

#### 5.1 Awareness and Attitudes Towards Prevention

The participants demonstrated relatively high awareness scores and generally favourable attitudes towards the prevention of diseases associated with drug use. This finding is consistent with previous research highlighting the

importance of health information and education in increasing understanding of drug-related health risks. Allen et al. and Hanson et al. emphasised the value of accessible, community-based approaches for communicating information about drug-related risks and overdose prevention [3], [4]. Similarly, research examining educational interventions has indicated the importance of appropriate health education in improving knowledge related to drug use and its consequences [5].

The findings therefore support the view that awareness and health education are important components of prevention. However, awareness of health risks should not be considered sufficient by itself. Effective prevention may also require supportive environments, access to appropriate health services, positive attitudes towards preventive practices and interventions that address the wider social and behavioural factors associated with drug use [1], [2].

## 5.2 Gender and Prevention-Related Awareness and Attitudes

The absence of statistically significant gender differences suggests that awareness and attitudes towards prevention were broadly comparable among men and women in the present sample. Previous research has examined gender alongside knowledge and attitudes in drug-prevention contexts, indicating that gender may be relevant when examining prevention-related outcomes [6]. However, differences in attitudes may also depend on the characteristics of the population, the type of intervention being considered and the social context in which attitudes are assessed [11].

The present finding therefore suggests that gender alone may not adequately explain variations in awareness or preventive attitudes within this sample. Other factors, including educational background, exposure to health information, personal experiences, social environment and access to healthcare information, may also influence these outcomes. Further research with larger and more diverse samples would be useful for examining these factors more comprehensively.

## 5.3 Relationship Between Awareness and Attitudes

The most notable finding of the study was the positive relationship between awareness and attitudes towards prevention. Participants who demonstrated greater awareness tended to report more favourable attitudes towards preventing diseases associated with drug use. This finding is consistent with the broader literature emphasising the role of education and information in supporting positive perceptions of drug-related health interventions [3], [4], [7]. Research on overdose prevention education, harm reduction and treatment-related attitudes has similarly demonstrated the importance of knowledge and exposure to appropriate information. For example, Bascou et al. reported improvements in knowledge and attitudes following an opioid overdose prevention training programme [12], while studies by Javadi et al., Kruis et al. and Reynolds et al. demonstrate that attitudes towards harm reduction and treatment can vary according to beliefs, stigma and the type of prevention approach being considered [9]–[11].

The present finding nevertheless represents an association rather than a causal relationship. Because the study used a cross-sectional design, it cannot be concluded that increasing awareness would necessarily cause more favourable attitudes. Awareness and attitudes may influence each other, or both may be influenced by other factors such as education, previous exposure to health information, social influences or personal experiences.

## 5.4 Insights from the Open-Ended Responses

The open-ended responses provided additional context to the quantitative findings. Participants identified a broad range of physical and psychological health conditions when asked to name diseases associated with drug use. This indicates that participants' understanding was not limited to a single category of disease.

Similarly, responses concerning prevention reflected a multidimensional understanding of prevention. Participants referred to awareness and education, healthy behaviours, abstinence, social and community support, government action, control of drug supply and harm-reduction practices. These responses suggest that participants recognised prevention as involving both individual and broader community-level approaches.

Although these responses were reviewed descriptively rather than through a formal qualitative analysis, they complement the quantitative findings by illustrating the range of ideas participants associated with drug-related disease prevention.

## 5.5 Implications of the Findings

Taken together, the findings support the importance of combining health education with broader prevention-oriented approaches. The positive relationship between awareness and attitudes suggests that strengthening accurate and accessible information about the health consequences of drug use may be relevant to prevention efforts. At the same time, prevention initiatives should extend beyond information provision and consider behavioural, social and community factors [7], [8], [12].

The findings may be particularly relevant for educational institutions, healthcare professionals, counsellors and community organisations developing drug-related health education programmes. Prevention initiatives may benefit from addressing both knowledge of health risks and attitudes towards available preventive approaches.

## 5.6 Overall Discussion

Overall, the study indicates that awareness and attitudes towards the prevention of diseases associated with drug use are related within the present sample, while significant gender differences were not observed. The findings reinforce the potential importance of health education and prevention-oriented initiatives while also indicating that awareness should be considered alongside broader psychological, behavioural and social factors.

Given the small convenience sample and cross-sectional nature of the study, the findings should be interpreted within the context of the present sample. Larger studies involving participants from different demographic and social backgrounds may help establish whether the observed relationship between awareness and attitudes is consistent across wider populations.

## 6. Conclusion

The present study examined awareness regarding diseases associated with drug use, attitudes towards their prevention, gender differences in these variables, and the relationship between awareness and attitudes among men and women. The findings indicate that participants demonstrated generally favourable levels of awareness and attitudes towards prevention. No statistically significant gender differences were observed in either awareness or attitudes.

However, awareness was positively and significantly associated with attitudes towards the prevention of diseases associated with drug use in the present sample. The findings highlight the importance of health education and prevention-oriented initiatives in improving understanding of drug-related health risks and supporting positive attitudes towards disease prevention.

The open-ended responses further indicated that participants recognised education, awareness, healthy behaviours, social support, community initiatives and broader preventive measures as relevant approaches to prevention.

Although the findings provide useful insight into the relationship between awareness and attitudes, they should be interpreted in the context of the study's small convenience sample and cross-sectional design. Further research involving larger and more diverse populations is recommended to strengthen understanding of the factors influencing awareness and attitudes towards the prevention of diseases associated with drug use.

## 7. Limitations of the Study

The present study has certain limitations that should be considered when interpreting the findings. First, the study included a relatively small sample of 51 participants, which may limit the generalisability of the findings to the wider population.

Second, convenience sampling was used and the participants were recruited through online platforms and personal networks; therefore, the sample may not fully represent the diversity of the general population. Third, the study used a cross-sectional design, with data collected at a single point in time. Therefore, the observed relationship between awareness and attitudes cannot be interpreted as a causal relationship. Fourth, the data were collected through a self-report questionnaire, which may be influenced by participants' understanding of the questions, response tendencies and social desirability.

Finally, the questionnaire was researcher-developed and the internal consistency coefficients obtained for the awareness

and attitude sections were modest. Therefore, future research may benefit from further development and validation of the instrument using larger and more diverse samples.

## 8. Recommendations

Based on the findings of the present study, the following recommendations are proposed:

- 1) **Strengthen Health Education:** Educational institutions and community organisations may incorporate structured health education programmes addressing the physical and psychological diseases associated with drug use and their prevention.
- 2) **Promote Awareness-Based Prevention:** Prevention initiatives may place greater emphasis on accurate and accessible information regarding drug-related health risks, early recognition of health problems and available preventive measures.
- 3) **Encourage Community-Based Initiatives:** Community organisations, healthcare professionals, counsellors and other relevant stakeholders may collaborate to develop accessible awareness and prevention programmes.
- 4) **Integrate Multiple Prevention Approaches:** Prevention programmes may address individual behaviours alongside social support, healthy lifestyle practices, harm-reduction approaches and other relevant community-level strategies.
- 5) **Develop Gender-Inclusive Programmes:** Since no significant gender differences were observed in the present study, prevention and health education initiatives may be designed to be inclusive of both men and women rather than being based solely on gender.
- 6) **Conduct Further Research:** Future studies may use larger and more diverse samples and probability-based sampling methods to improve the generalisability of findings. Longitudinal and intervention-based research may also help examine whether improvements in awareness lead to changes in attitudes and preventive behaviours.
- 7) **Further Develop the Research Instrument:** Future research may involve additional development and validation of the researcher-developed questionnaire using larger samples and more comprehensive psychometric evaluation.

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