

Factors Influencing Preventive Health Behaviors for Cannabis Use among Vocational Students

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Abstract

Cannabis use among adolescents is an increasing public health concern, particularly among vocational students who may be vulnerable to substance-related risk behaviors. This predictive correlational cross-sectional study examined preventive health behaviors related to cannabis use among vocational students and investigated the predictive roles of mental health literacy, family connectedness, optimism, and psychological flexibility. The study was conducted between April to June 2024 among 299 vocational students in Chonburi Province, Thailand. Data were collected using six self-report questionnaires assessing demographic characteristics, mental health literacy, family connectedness, optimism, psychological flexibility, and preventive health behaviors for cannabis use. Descriptive statistics and multiple linear regression analyses were used to analyze the data.

The findings showed that the mean score for preventive health behaviors related to cannabis use among participants was 59.47 (SD = 21.89). Mental health literacy, family connectedness, optimism, and psychological flexibility significantly predicted preventive health behaviors related to cannabis use, jointly accounting for 34.5% of the variance ($R^2 = .345$, $F_{4, 294} = 38.64$, $p < .001$). Mental health literacy was the strongest ($\beta = .32$, $p < .001$), whereas psychological flexibility was the weakest ($\beta = .12$, $p < .05$).

The findings highlight the importance of mental health literacy, family connectedness, optimism, and psychological flexibility in influencing preventive health behaviors related to cannabis use among vocational students. These results may inform the development of nursing and mental health interventions designed to strengthen preventive health behaviors and reduce cannabis use risk among adolescents.

Key words: family connectedness, mental health literacy, optimism, preventive health behaviors, psychological flexibility

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Introduction

Globally, cannabis use has become more common, with approximately 228 million users in 2022, of which 60 million were non-medical users (UNODC, 2024). Office of the Narcotic Control Board (ONCB) has reported that around 1.89 million Thais aged 18-25 years (4.3% of the population) used cannabis for non-medical purposes in 2021, reflecting a twofold increase compared to the fiscal year 2020 (ONCB, 2021). In addition, in June 2022, The Thai government has removed cannabis from the controlled substances list (RTGS, 2022), leading to fewer restrictions on its use, particularly for cultivation, consumption, and recreation. According to the media reports, it is estimated that Thailand had over 7,747 licensed cannabis dispensaries, with 328 located in Chonburi, making it one of the top three provinces for cannabis sale points. This rapid policy shift may contribute to greater accessibility and exposure to cannabis among adolescents. A study on substance abuse situations among vocational students reported that 23.2% of vocational students across four regions of Thailand have used at least one type of substance, with cannabis, kratom, and amphetamines being the top three most commonly reported (Vipa, Anukul, Samroui, Supaporn, & Sarochinee, 2022). In addition, the prevalence of cannabis use among vocational students in the northern region of Thailand was 9.5% (Chomsri, Aramratana, Siviroj, & Kuntawee, 2017). Cannabis exposure during adolescence has been associated with adverse psychological and neurodevelopmental outcomes. Following the easing of cannabis restrictions in Thailand, adolescents may have greater access to cannabis and increased opportunities for use. Therefore, understanding preventive health behaviors among vocational students is essential.

This study examines preventive health behaviors among vocational students employing a conceptual framework that integrates the Socioecological Model (Bronfenbrenner, 2000) with a comprehensive literature review to identify associated factors. This model illustrates that an individual's behavior is influenced by multiple factors which can be classified into individual, interpersonal, organizational, community, and public policy (Bronfenbrenner, 2000). Mental health literacy (MHL) emerged from the broader concept of health literacy (HL)(Kutcher, Wei, & Coniglio, 2016). It encompasses four dimensions including knowledge of mental health problems, erroneous beliefs and stereotypes, help-seeking and first-aid skills, and self-help strategies (Campos, Dias, Palha, Duarte, & Veiga, 2016) that jointly form a person's general perception and control of psychological well-being (Jorm, 2000). The lack of knowledge and low-risk perception regarding cannabis use contribute to its increased consumption among adolescents (González-Cano-Caballero et al., 2023). It stands to reason that, by improving mental health literacy, health behavior and quality of life were improved. Optimism is important for understanding the vulnerability to mental disorders. It influences behavior, coping strategies, and overall well-being. Optimism is derived from a more general interest in the processes that underline the self-regulation of behavior and regarding the traits related to optimism including; hardiness, self-efficacy, and internal locus of control and hope, those are predicted health behavior. Research evidence indicated that optimism, hope, and self-esteem are key determinants in avoiding substance use (Carvajal, Clair, Nash, & Evans, 2011), optimism promotes

healthy behaviors, and well-being, and found to be protective for both the frequency of alcohol use and heavy drinking trajectories. Psychological flexibility refers to the ability to adapt to changing circumstances, adjust thoughts and behaviors when current approaches interfere with well-being, balance different aspects of life, and act following core personal values (Kashdan & Rottenberg, 2010). It plays a crucial role in promoting mental health, as psychological flexibility is integral to overall well-being and life satisfaction. Empirical findings indicated that psychological flexibility is a significant predictor of substance misuse, subjective well-being, and self-compassion among university students (Arslan, Uzun, Güven, & Gürsu, 2024; Detchaiyot, Vatanasin, & Dallas, 2021). It also serves as a significant influencing factor of intention to abstain from drug use among youths with substance abuse (Detchaiyot et al., 2021). The condition of relationships inside a family has a fundamental role in the welfare of its adolescents, called connectedness. Effective parent-child cohesiveness and operative interaction can be defensive influences as opposed to substance abuse by adolescents, as noted by Carver H, Elliott L, Kennedy C, Hanley J (Carver, Elliott, Kennedy, & Hanley, 2016). According to research, teenagers between the ages of 12 and 17 who experience a sense of belonging at home or school are up to 66.0% less inclined to participate in risky behaviors linked to violence, substance abuse, and sexuality. Compared to others who were not as connected, they are also more likely to have improved mental health. Family connectedness were revealed to be a key indicator of drug deterrence (Laodarun, Hengudomsub, & Dallas, 2018), while strong family connections served as a constraint against the abuse of drugs. Reduced risk of creating cannabis-related issues is another possibility. To what extent do mental health literacy, psychological flexibility, optimism, and family connectedness jointly predict preventive behaviors for cannabis use among vocational students. This study aimed to comprehensively explore these relationships and was guided by the Socioecological Model. Within this framework, mental health literacy, psychological flexibility, and optimism are considered factors operating at the intrapersonal domain, reflecting individual characteristics and personal resources. Meanwhile, family connectedness is examined within the interpersonal domain, highlighting the influence of social relationships and support systems. A diagram of the study framework is presented in Figure 1

Early intervention is key to preventing drug abuse, especially during adolescence, a critical stage of development. Early prevention efforts can lead to long-term health and economic benefits. Examining cannabis-related behaviors among vocational students may help identify protective factors against cannabis use.. Factors like mental health literacy, family connectedness, optimism, and psychological flexibility may influence cannabis prevention efforts.

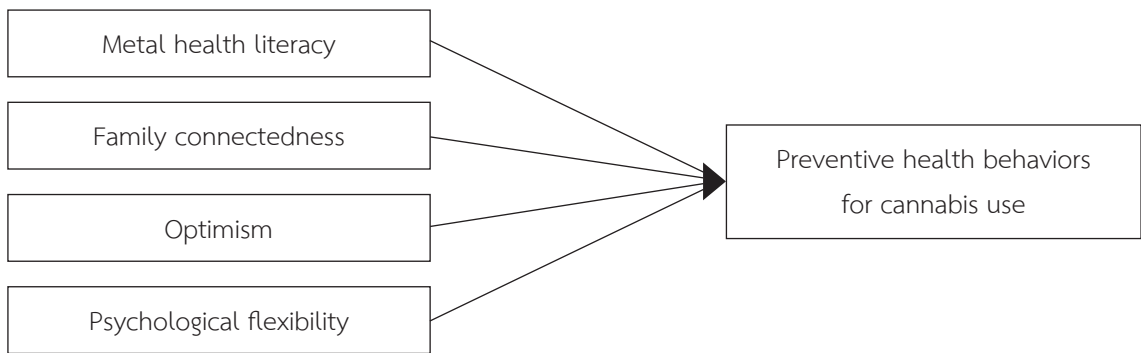


Figure 1 Research conceptual framework

Research Objectives

This study aimed to:

1. To examine preventive behaviors related to cannabis use among vocational students in Chonburi Province, Thailand.
2. To investigate the factors influencing preventive health behaviors related cannabis use among vocational students, including mental health literacy, family connectedness, optimism, and psychological flexibility.

Materials and methods

Study Design and Participants

A predictive correlational design was employed to examine preventive health behaviors related to cannabis use and the factors influencing these behaviors, including mental health literacy, family connectedness, optimism, and psychological flexibility. The study site was selected using simple random sampling from eight technical colleges under the Office of the Vocational Education Commission in Chonburi Province, Thailand. One college was randomly selected as the study setting. This college offers 21 fields of study and has a total enrollment of 4,564 students. Data collection was conducted from April to June 2024.

Sampling

Simple random sampling was utilized to recruit 300 participants who met the inclusion criteria for the study. Sample size was determined using the table for multiple regression analysis provided by (Polit & Beck, 2008). Specific values were assigned for $\alpha = .05$, power = .80, four predictors, and a small effect size ($R^2 = .04$), which indicated that a minimum of 287 participants was required. A total of 300 participants were included in this study to ensure the adequacy of the sample size and enhance the generalizability of the findings.

A multi-stage sampling procedure was employed. First, one technical college was randomly selected using simple random sampling from a total of eight technical colleges in Chonburi Province. The selected college served as the study site. Of the total 4,564 enrolled students, those in Higher Vocational Certificate Year 2 were excluded because most exceeded the age criterion of 19 years.

Consequently, the eligible population consisted of 3,763 students from Vocational Certificate Year 1 and Higher Vocational Certificate Year 1, from which participants were recruited using proportional allocation. Based on this proportional distribution, 74, 67, 77, and 82 students were selected from each respective academic year using simple random sampling. Therefore, the findings should be interpreted within the context of the selected institution.

In terms of the inclusion criteria, participants were required to be no older than 19 years of age, a student at a vocational school in Chonburi, and articulate in Thai, as well as have internet access to be able to complete the questionnaires. Students excluded from the study included those with documented physical or mental health issues.

Research instruments

To gather demographic information from participants, the demographics questionnaire was created by researchers, which intended to collect data concerning 1) Sex, 2) Age, 3) Ethnicity, 4) Nationality, 5) Religion, 6) Education level, 7) Education level, 8) Employment status, 9) Marital status, 10) Monthly earnings, 11) Living status, and 12) Self-reported health condition. To gain more understanding of the backgrounds of the participants concerning the study on preventive health behaviors for cannabis use, the questionnaire intended to acquire applicable background information.

To evaluate preventive behaviors concerning cannabis use, researchers developed the Preventive Health Behaviors for Cannabis Use Questionnaire, which was validated by three experts before use. The notions from the Socioecological Model, a thorough literature review, and the classification of protective influences against adolescents' cannabis usage served as the foundation for the creation of the questionnaire. The questionnaire consists of 20 items rated on a 6-point frequency scale ranging from 0 (Not applicable) to 5 (Regularly). Content validity was evaluated by three experts, yielding a Content Validity Index (CVI) of 0.96, indicating excellent content validity. Internal consistency reliability was assessed using Cronbach's alpha coefficient, which demonstrated satisfactory reliability ($\alpha = .93$).

The Adolescence Mental Health Literacy (AMHL) questionnaire, developed by Campos (2016), was utilized in this study. AMHL includes 33 items assessed on a Likert scale varying from 1 (disagree completely) to 5 (agree completely). The questionnaire is divided into four aspects including (1) familiarity with mental health issues, (2) inaccurate views and stereotypes, (3) help-seeking and first-aid proficiencies, and (4) self-help approaches (Zare et al., 2022). With higher scores signifying better mental health knowledge, the total score ranged between 33 and 165. The original questionnaire was translated into Thai by two content experts. Subsequently, two independent bilingual translators performed a blind backward translation from Thai to English to ensure semantic equivalence, following the guidelines of Guillemin, Bombardier, and Beaton (1993). The content validity of the Thai version was reviewed by a panel of experts, and the instrument demonstrated excellent internal consistency reliability, with a Cronbach's alpha coefficient of .96.

The Life Orientation Test-Revised (LOT-R), established by Lonhnam, Sutiwan, and Pornprasertmanit (2008), was used to assess optimism. There are 10 items on the LOT-R, including

3 items to evaluate optimism, 3 items to appraise pessimism, and 4 items to act as filler questions. Using choices from 1 (disagree completely) to 5 (agree completely), respondents ranked each item on a 5-point Likert scale (Scheier, Carver, & Bridges, 1994). As established by Lonhlan et al. (2008), the LOT-R (Thai version) is a 10-item scale based on the original version by Scheier et al. (1994), adapted to reflect the cultural context of Thai respondents.

The Psychological Flexibility Scale for Adolescents, developed by (Thapinta et al., 2024), was used to assess psychological flexibility. This scale consists of 27 items measured on a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), and is organized into six dimensions: (1) Defusion, (2) Acceptance, (3) Attentional Flexibility, (4) Self as Context, (5) Value-Identity, and (6) Committed Action. The structural validity of the scale was confirmed by confirmatory factor analysis, which demonstrated a good model fit ($\chi^2 = 510.818$, $df = 309$, $\chi^2/df = 1.653$, CFI = .952, RMSEA = .046). These findings indicate that the instrument possesses satisfactory construct validity for assessing psychological flexibility among youth (Sannarin, Sakulsriprasert, & Thongpibul, 2019).

Family connectedness was assessed using a questionnaire developed by (Krasaesat, Deoisres, & Wacharasin, 2011), which was modified from a previous version developed by Nopparat (2000) and aligned with the framework established by Resnick, Harris, and Blum (1993). It consists of 12 items, including 6 positive and 6 negative worded questions. Respondents indicated their levels of agreement on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Its total score ranged from 12 to 60. The lower scores indicated lower levels of family engagement, while higher scores reflected greater engagement in family connectedness.

All instruments used in this study, with the exception of the Adolescence Mental Health Literacy (AMHL) scale, had been previously validated and utilized in prior research, thereby validity testing was not conducted in this study. The AMHL scale was translated into Thai using the back-translation method as described by Guillemin et al. (1993). Reliability testing was conducted prior to the actual study to ensure the consistency of the instruments. The Cronbach's alpha values for all scales were: (1) Preventive Health Behavior for Cannabis Use = 0.93, (2) Adolescence Mental Health Literacy = 0.96, (3) Life Orientation Test-Revised = 0.70, (4) Psychological Flexibility Scale for Adolescents = 0.76, and (5) Family Connectedness = 0.84.

Data analysis

The Statistical Package for the Social Sciences (SPSS) was utilized for data analysis. Descriptive statistics were employed to summarize the participants' demographic characteristics. Prior to conducting multiple regression analysis, assumptions of multiple regression analysis were tested. After removing one outlier, the remaining 299 cases were retained for analysis. Scatterplots confirmed a linear relationship between the variables. Q-Q plots of the residuals indicated multivariate normality, with data points aligning along the 45-degree line. Multicollinearity was checked using correlation matrices, with coefficients kept below 0.80. Additionally, Variance inflation factor values, all between 1.08 and 1.65, indicated no multicollinearity (threshold > 10). Homoscedasticity was confirmed by a residual vs. predicted values scatterplot, which showed no clear patterns.

Subsequently, multiple regression analysis using the enter method was conducted to identify predictors of preventive health behaviors related to cannabis use among vocational students.

Ethical Considerations

Participants were asked to take part through a pamphlet advertisement after ethical approval for the study (G-HS119/2566(C1)) was obtained and consent to collect data was received from the director of the technical college. Comprehensive information about the study, including the aims, procedures used to safeguard human subjects, and procedure for gaining permission and informed consent before data collection was afforded by the pamphlet. Vocational students who met the inclusion criteria were asked to participate in this study. Parents were asked to provide informed consent to participate for their children since parental consent was mandatory for those under the age of 18, while those at least 18 years of age could legally give consent personally. Participants were given an information sheet defining the aims of the study, contributors' rights to privacy, and the discretion of their replies after gaining access to the online questionnaire. Participants could withdraw at any time without consequence, and involvement was completely anonymous, with data collection taking place from April 10 to June 21, 2024. Before submitting the questionnaire, participants had to complete all items. The online questionnaire was closed directly after 300 responses were obtained.

Results

The demographic characteristics are presented in Table 1. The majority of respondents were male (67.9%), and single (97.7%). Most of these students lived with their father and mother (69.6%). Most of them were enrolled in formal programs (95.3%). The majority of respondents are full-time students (74.2%). Most students receive financial support from their parents ranging from 3,001 to 6,000 baht per month (45.5%) followed by less than 3,000 baht per month (43.8%). Self-reported cannabis use revealed that 53 participants (17.7%) have used cannabis at least once in their lifetime, while 59 participants (19.73%) have used other substances at least once in their lifetime.

Table 1. Demographic characteristics of the participants (N = 299)

Variables	Categories	n	%
Gender	Male	203	67.9
	Female	96	32.1
Religion	Buddhism	284	95.0
	Christian	7	2.3
	Other	8	2.7
Education level	Vocational certificate 1	74	24.7
	Vocational certificate 2	66	22.1
	Vocational certificate 3	77	25.8
	High vocational certificate 1	82	27.4

Table 1. (Cont.)

Variables	Categories	n	%
Education types	Formal program	285	95.3
	Non formal program	14	4.7
Working status	Study and work part-time job	77	25.8
	Full time study	222	74.2
Marital status	Single	292	97.7
	Married	1	.3
	Cohabit without marriage	1	.3
	Other	5	1.7
Living with	Relatives	31	10.4
	Father and/or Mother	208	69.6
	Living in a student lodge or Apartment	55	18.4
	Other	5	1.7
Underlying disease	Yes	12	4.0
	No or don't know	287	96.0
Income	Less than 3000/Month	131	43.8
	3001-6000/Month	136	45.5
	6001-9000/Month	18	6.0
	More than 9001/Month	14	4.7
Cannabis use status	Never	246	82.3
	Currently use	11	3.7
	Used	42	14.0
Substance use history	No	240	80.27
	Yes	59	19.73

The mean scores for mental health literacy, family connectedness, and psychological flexibility are 114.61 (± 29.68), 39.13 (± 6.09), and 77.90 (± 15.24), respectively (Table 2). The mean score of Preventive Health Behaviors for Cannabis use was 59.47 (± 21.89). Across the domains of these preventive health behaviors, the individual domain had the highest mean score (mean score = 25.36, ± 9.16) followed by the community domain (mean score = 20.07, ± 8.56), and family domain (mean score = 14.04, ± 5.92) (Table 3). For correlation coefficients among examined variables, it demonstrated moderate positive correlations, as shown in Table 4. The multiple regression analysis revealed that mental health literacy, optimism, psychological flexibility, and family connectedness together explained 34.5% of the variance in preventive health behavior towards cannabis use ($R^2 = .345$, $F_{4, 294} = 38.64$, $p < .001$). The strongest predictors were mental health literacy ($\beta = .32$, $p < .001$), followed by optimism ($\beta = .25$, $p < .001$), family connectedness ($\beta = .13$, $p < .01$), and psychological flexibility ($\beta = .12$, $p < .05$) (Table 5).

Table 2. Mean and Standard Deviation (SD) of the factors related to preventive health behaviors for cannabis use (N = 299)

Variables	Possible score	Actual score	Mean	SD
Mental Health Literacy	33-165	33-165	114.61	29.68
Family Connectedness	12-60	27-55	39.13	6.09
Optimism	6-30	11-30	20.82	4.45
Psychological Flexibility	27-108	49-108	77.90	15.24
Preventive Health Behaviors for Cannabis use scale	0-100	5-100	59.47	21.89

Table 3. Descriptive analysis of preventive health behaviors for cannabis use each domain (N = 299)

Preventive Health Behaviors for Cannabis use	Min	Max	Mean	SD
Individual Domain	3	40	25.36	9.16
Family Domain	0	25	14.04	5.92
Family Connectedness Domain	0	35	20.07	8.56
Total			59.47	21.89

Table 4. Correlation between predictors and preventive health behaviors for cannabis use (N = 299)

Variable	1	2	3	4	5
1. Mental health literacy	1				
2. Family connectedness	.17**	1			
3. Optimism	.47***	.86	1		
4. Psychological flexibility	.39***	-.11	.55***	1	
5. Preventive health behaviors for cannabis use	.50***	.19**	.48***	.37***	1

Note: *p < .05, **p < .01, ***p < .001

Table 5. Multiple linear regression analysis of factors affecting preventive health behaviors for cannabis use (N = 299)

Independent Variables	B	SE	Beta	t	P-value
Mental health literacy	.23	0.04	.32	5.65	.000
Optimism	1.23	0.30	.25	4.13	.000
Family connectedness	.45	0.18	.13	2.54	.012
Psychological flexibility	.67	0.08	.12	2.00	.047
Constant = -2.58**, $R^2 = .345$, Adjusted $R^2 = .336$, $F_{4, 294} = 38.64$, $p < .001$					

Note: DV: preventive health behaviors for cannabis use

Discussion

The first objective of this study is to investigate the preventive health behaviors related to cannabis use among vocational students. This study is the first research that examined such behaviors in this population. Furthermore, no prior studies have been conducted in Thailand to enable a direct comparison of the findings. The results showed a mean score of the preventive health behaviors for cannabis use among vocational students of 59.47 (SD = 21.89).

The second objective of this study is to analyze the factors influencing preventive behavior related to cannabis use among vocational students, specifically focusing on mental health literacy, psychological flexibility, optimism, and family connectedness. The findings indicate that Mental health literacy (MHL) was identified as the strongest predictor of preventive health behaviors related to cannabis use ($\beta = .32$, $p < .001$). MHL refers to the knowledge, motivation, and skills required to access, understand, and apply mental health information, enabling individuals to make informed decisions about mental care, disease prevention, and health promotion. It encompasses four dimensions including knowledge of mental health problems, erroneous beliefs and stereotypes, help-seeking and first-aid skills, and self-help strategies (Zare et al., 2022) that jointly form a person's general perception and control of psychological well-being (Jorm, 2000). As a result of improving awareness and lowering indignity, MHL has a considerable impact on precautionary conduct (Sequeira et al., 2022). Participation in cannabis use by teens could be increased by knowledge deficiency and low awareness of risks concerning the hazards of cannabis (González-Cano-Caballero et al., 2023). Inadequate health knowledge adds to risky behaviors including substance abuse, alcohol drinking, and smoking, as proven in previous studies (Hoover et al., 2018; Yangyuen, Mahaweerawat, Thitisutthi, & Mahaweerawat, 2021). MHL is a separate concept within the broader category, though previous studies focused mainly on overall health literacy (HL) (Kutcher et al., 2016). The significant prognostic role of MHL in determining proactive health behaviors related to cannabis use among vocational students is the focus of the current study.

Preventive health behavior for cannabis use could be anticipated by optimism ($\beta = .25$, $p < .001$). People who have an upbeat attitude are more likely to embrace health-promoting activities like fitness, healthy eating, and good medical advice because they think that their efforts can have advantageous results. In terms of improving cannabis-related preventative health habits, optimism is key. Optimism, hope, and self-esteem can prevent substance use by shaping individuals' attitudes, influencing perceived social norms, and improving behavioral control, as shown by the results of the study by Carvajal et al. (2011). Moreover, a higher probability of smoking and drug abuse among students has been linked with low optimism which found by Ansari et al. (2019), in addition to psychoactive drug use among undergraduate nursing students and residents has been connected to reduced positivity.

Preventive health behavior for cannabis use could also be predicted by family connectedness ($\beta = .13$, $p < .01$), which represents a robust sense of attention, encouragement, and comfort among protective family connections, promoting improved health-related conduct among teens. Effective parent-child cohesiveness and operative interaction can be defensive influences as opposed to substance abuse by adolescents, as noted by (Carver et al., 2016). The influence of family bonding in preventing substance abuse has been reinforced by previous research (Thapinta et al., 2024). Family connectedness were revealed to be a key indicator of drug deterrence (Laodarun et al., 2018), while strong family connections served as a constraint against the abuse of drugs.

Although psychological flexibility is considered a protective factor that buffers negative emotions and supports mental well-being, it emerged as the weakest predictor of preventive health behaviors in this study ($\beta = .12$, $p < .05$). A possible explanation is that psychological flexibility primarily enhances internal emotional regulation rather than directly influencing specific health behaviors. Within the framework of the Socioecological Model, it operates at the individual level, whereas preventive behaviors related to cannabis use are also shaped by stronger interpersonal and contextual influences, such as peer norms and substance use environments. Consequently, its predictive strength may be comparatively limited when broader social factors are involved.

Improving decision-making and strengthening the individuals' abilities in facing challenges can be boosted by encouraging the individuals' self-awareness, emotional control, and adaptive coping approaches. The present findings are consistent with previous research demonstrating that psychological flexibility is associated with adolescents' intention to abstain from drug use (Detchaiyot et al., 2021).

Strengths and Limitations

The strength of this study lies in its novelty, as it investigates preventive health behaviors toward cannabis use among vocational students rather than focusing on risk behaviors, which have been widely studied. In addition, this study examined multiple predictors of preventive health behaviors for both individual and external factors. This study had certain limitations, one limitation of this study was the use of a cross-sectional design, which may not adequately explain preventive

health behavior toward cannabis use and their contributing factors over time change. Thus, the nature of the variable could explain vocational students' preventive health behavior toward cannabis use at the time that the researcher collected data.

Implications and Recommendations

The findings of this study offer valuable insights for nurses, other healthcare professionals, and educators, who can use this information to promote preventive behavior related to cannabis use by improving mental health literacy, fostering family connectedness, enhancing optimism, and promoting psychological flexibility.

Future research should employ a longitudinal design, such as a prospective cohort study, to examine changes in preventive health behaviors toward cannabis use over time. This approach would address the limitations of cross-sectional data and provide a clearer understanding of causal relationships and temporal changes in factors influencing preventive behavior.

Conclusion

Determining preventive health behaviors related to cannabis use among vocational students was the primary objective of this study. In the context of relatively low restrictions on cannabis use, greater emphasis should be placed on strengthening preventive health behaviors. Guided by the Socioecological Model, this study conceptualized preventive health behaviors as being influenced by multiple factors, including individual, interpersonal, and environmental determinants. Identifying key predictors is essential for developing targeted nursing interventions aimed at reducing cannabis consumption and enhancing preventive health behaviors among vocational students.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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