Life Assets and Substance Use of High School Students in Songkhla

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ABSTRACT

Objective: To examine the association between life assets (including demographic factors) and substance use among high school students.

Materials and Methods: In this cross-sectional study, 1,713 participating students were asked to fill out questionnaires. Data were analyzed using descriptive statistics (e.g., mean, frequency and standard deviation); associating factors were analyzed via univariate analysis and ordinal logistic regression.

Results: Among the participants, 67.5% were females with a mean age of 16.4 ± 0.96 years. On average, the participants have a good level of overall life assets, except for community power. Those with a mean age of 14.3 years engaged in substance use early, with peer influence being a leading cause (8.1%). 48.0% of the participants had used substance in their lifetime, and 74.7% of them had used only 1 substance, with alcohol being the most prevalent (97.7%). An excellent level of participant life assets, especially wisdom power, was negatively associated with substance use (OOR = 0.48). Other significant factors that discouraged substance use were being an only child (OOR = 0.75), having a high cumulative grade point average (GPA) (OOR = 0.63), and belonging to a two-parent family. (OOR = 0.79)

Conclusion: This study affirms a negative relationship between an excellent level of life assets, especially wisdom power, and substance use. Demographic factors like being an only child, having a high GPA, and belonging to two-parent households also showed a strong negative association with substance use.

Keywords: Life assets; substance; student; high school (Siriraj Med J 2021; 73: 46-54)

INTRODUCTION

Substance use is a substantial public health problem worldwide. The United Nations Office on Drugs and Crime estimates that 271 million people around the globe used substances in 2016. Moreover, the number of substance users who suffered from substance use disorders and who died from substance use was 35 million and more than half a million, respectively.[1] Substance abuse is a social problem in Thailand as well. According to surveys, 2.9 million Thai people were substance abusers in 2016[2] (youths aged 12-15 years in Bangkok are exposed to substance use early)[3], and 50% of patients at rehabilitation centers were youths who tended to use combinations of substances.[4] In addition to the propensity for developing health problems, adolescents who use substances excessively are highly susceptible to having irritability and psychosis, leaving schools, having broken families, and committing crimes.[4,5] Therefore, it is important to identify adolescents at risk for substance use and provide an effective early intervention for them.

Prior studies have examined factors that are negatively associated with adolescent substance use. These protective factors-or *assets*-include academic achievement[6], family support[6,7], positive peers[8,9], and adult role models.[7] In particular, adolescents with high academic aspirations[6], supportive parents[7], and low substance use among friends[9] are less inclined to engage in substance use.

Apart from these protective factors, life assets are viewed as positive supports and strengths that may prevent adolescents from engaging in risk behaviors, e.g. substance use. In the United States, the Developmental Assets Framework was developed to evaluate life assets using 40 indicators.[10] Based on this framework, many studies have reported that individuals with many life assets were less likely to use cigarettes, alcohol, and marijuana in the past 30 days.[11] In addition, life assets may promote positive behaviors such as high academic achievement, the use of safety belts, and engaging in aerobic exercise.[11] In Thailand, using the same framework[10], life assets have been assessed using 48 indicators that are categorized into 5 domains: self-power, family power, peer power, wisdom power, and community power.[5,12] Thai high school students have been reported to pass the overall criteria for life assets, except community power.[13–15] However, there is limited evidence showing how life assets may prevent substance use among students in Thailand.

The objective of this study was to examine the relationship between life assets as well as other demographic factors and substance use in high school students in Songkhla province, an endemic area of substance use in Southern Thailand.[16]

MATERIALS AND METHODS

The Ethics Committee of the Faculty of Medicine, Prince of Songkla University approved this cross-sectional study (REC.62-032-3-4). It was conducted from June to September, 2019. The sample size was calculated by G*Power that had an effect size as 0.1, the Alpha as 0.05, the Power as 0.8 and the Degree of Freedom (df) as 4. Among 1,713 students studying in grades 10-12 from 7 high schools in Hat Yai, which were selected randomly using cluster sampling and probability proportional to size. To be enrolled in the survey, the students needed to be able to both understand and complete the questionnaires, while students on a leave of absence were excluded.

Methodology

The randomly selected students were first introduced to the rationale of the study, and then they were informed about the acquired information as well as the protection of their confidential information. If the students agreed to participate in the surveys, they would take a few minutes to complete the questionnaires without the requirement for their signatures in order to ensure their anonymity. After their completion, the questionnaires were placed in boxes in front of the classroom by the students themselves. The results were returned to the participants' e-mail addresses. All participants had the right to request a withdrawal at any time and without repercussion.

Instruments

The questionnaires consisted of 4 parts:

1) Demographic data comprised gender, age, ethnicity, academic year, cumulative grade point average (GPA), child order, religion, area of residence, type of residence, people living with, parent's marital status, and parent's level of education.

2) The Life Assets Questionnaire (youth version) consisted of 48 items enquiring about self-power (15 items), family power (8 items), wisdom power (11 items), peer power (6 items), and community power (8 items). For each item, the responses ranged from "0" (none) to "3" (regularly). The total scores were categorized into 4 levels: excellent (≥80.0%), good (70.0-79.9%), moderate (60.0-69.9%), and low (<60%), which was considered to indicate failure. In this questionnaire, a Cronbach's alpha is 0.89.[12]

3) Substance use information included age at initiation of use, reasons for use, and types of substance used.

4) The ASSIST-Lite Thai version[17] consists of 8 questions related to illicit substances; there are a few questions enquiring in more detail about each substance. In total, it contains 19 items rated with "Yes" (score one) or "No" (score zero). The cut-off score of a likely substance use disorder (SUD) is 2, while the cut-off score of alcohol is 3. The ASSIST-Lite has the AUC [0.8-1.0], sensitivity [0.8-1.0] and specificity [0.7-0.8].[18] In this study, we use the ASSIST-Lite to assess the past-3-month substance use among students.

Statistical analysis

The data were analyzed using descriptive statistics, e.g. percentage, frequency, average, and standard deviation. The factors associated with substance use were scrutinized via univariate analysis. If the p-value from the univariate analysis was less than 0.2, those factors were analyzed using an ordinal logistic regression. Those factors with a p-value of less than 0.05 were indicated as the statistically significant factors.

RESULTS

Demographic data

Of the 1,713 participants, 67.5% were female with mean age of 16.4 ± 0.96 years (range 15-19 years). The students studied in grades 10 (31.9%), 11 (33.0%); and 12 (35.0%). The majority of them was Buddhist (89.6%), had siblings (80.2%), had GPAs in the 3.00-4.00 range (53.1%), lived in urban areas (71.8%), and lived in two-parent households (65.0%).

Substances

Fig 1 shows the details of substance use categorized in 3 groups: students with a lifetime substance use, students with a past-3-month occasional use, and students with a likely substance use disorder (SUD) based on the past-3-month use. The common substances in the lifetime use category were alcohol (97.7%), smoking (21.6%), and stimulants (8.8%). About three quarters (74.7%) of participants used 1 substance, while the remaining quarter (25.3%) were polysubstance abusers. The number of male students was higher than that of females in terms of using substances in combination.

Fig 2 shows that the proportions of participants who reported substance use by grade were: grade 12 (38.4%), grade 11 (36.4%), and grade 10 (25.2%). 66% of them were identified as female, 32.5% as male, and 1.5% as other.

As shown in Fig 3, approximately half (48.0%) of the participants reported a lifetime substance use. 39.3% of participants were past-3-month substance users and 8.7% of participating students were past-3-month substance non users. Fig 4 shows the past-3-month substance users. 63.4% of them reported occasional substance users, and 36.6% were students with likely SUD.

The average age of the participating students at the initiation of substance use was 14.3 years. Fig 5 shows that the reasons for engaging in substance use were peer influence (8.1%), sadness or stress (7.0%), and curiosity (6.5%).
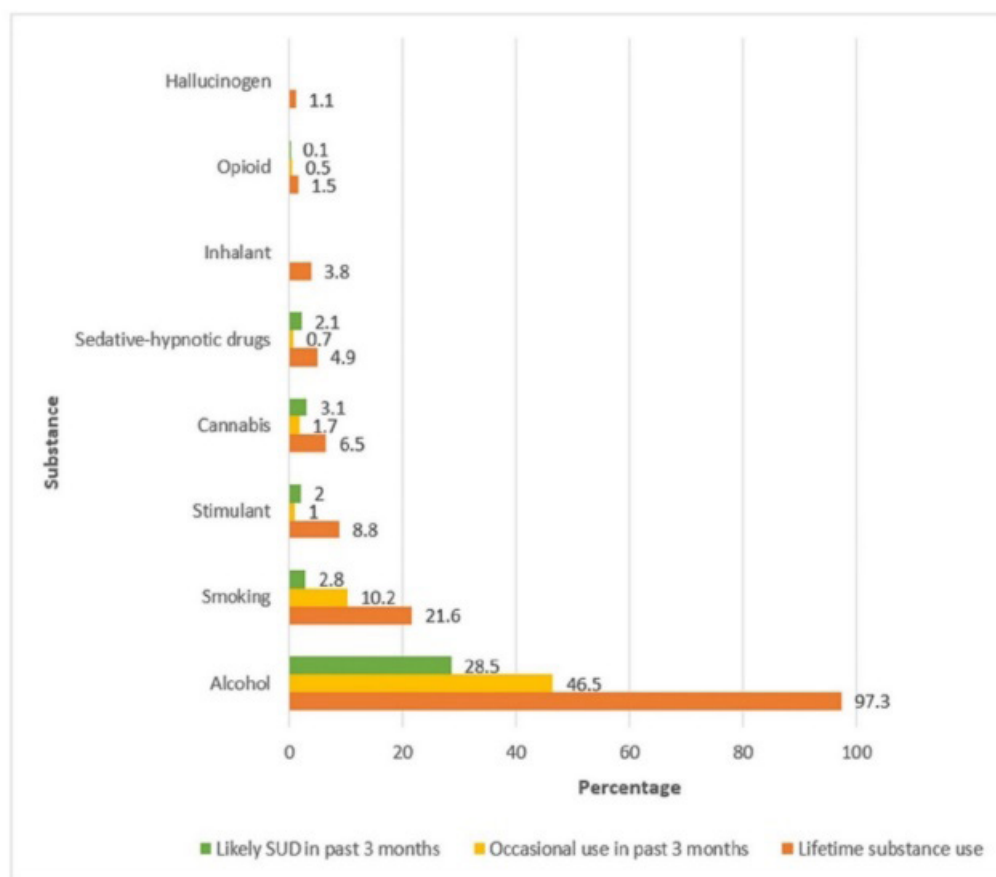

Fig 1. Substances used in the 3 groups: lifetime substance users, past-3-month occasional users, and past-3-month users with likely SUD (n=818).
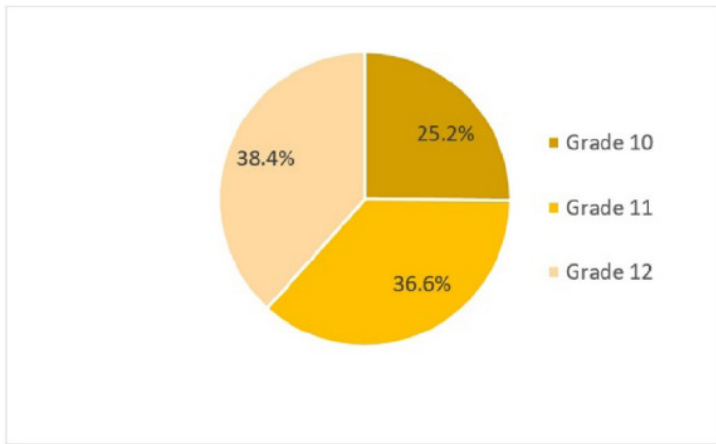
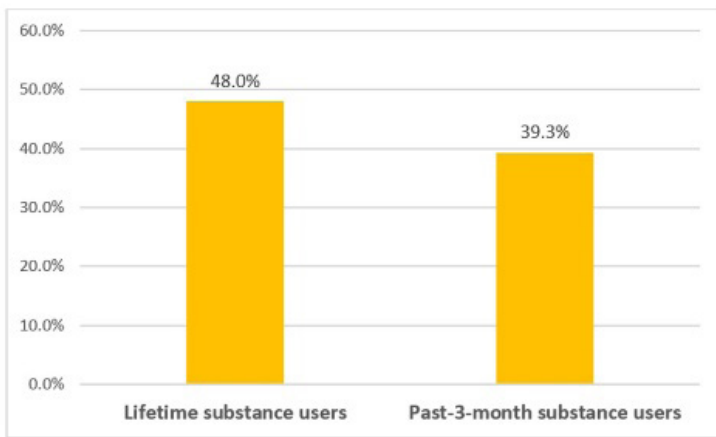**Fig 2.** Academic year and substance use.

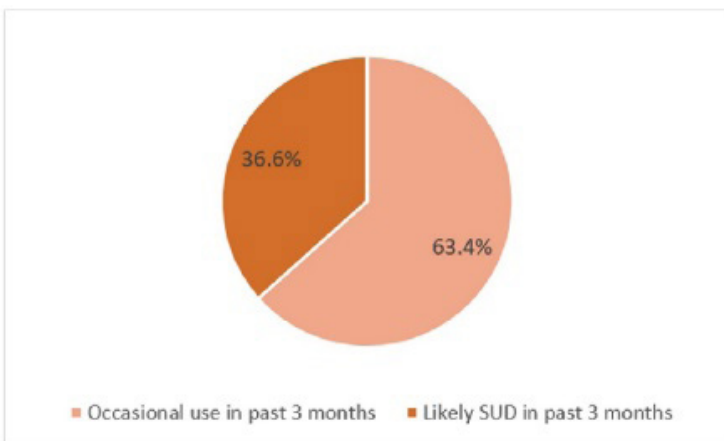**Fig 3.** Lifetime and past-3-months substance users.
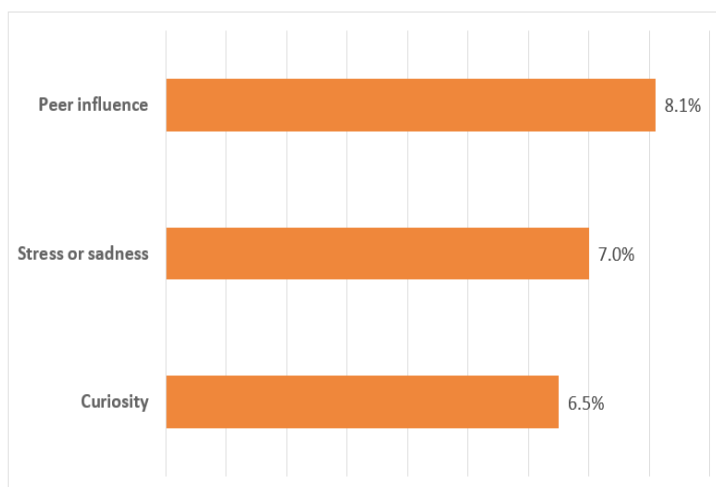

Fig 4. Past-3-months substance users.

Fig 5. The reasons of substance use.

Life assets

On average, the participants had a good level of life assets; 81.9% of them met the criteria for life assets. In particular, they had an excellent level of family power, a good level of self-power, a moderate level of peer and wisdom power, and a low level of community power.

Table 1 presents the data related to the overall life assets as well as per the 5 life asset domains according to the 3 subgroups: non-users, past-3-month occasional users, and past-3-month users with likely SUD. In terms of the life assets, the majority of non-users and past-3-month occasional users had the good level, while past-3-month users with likely SUD had the moderate level.

The association between life assets, demographic data, and substance use

Tables 1 and 2 show the univariate analysis results of the demographic data and life assets according to the 3 student groups: non-users, past-3-month occasional users, and past-3-month users with likely SUD. The variables that were analyzed using an ordinal logistic regression were gender, siblings, GPA, type of residence, people living with, and life assets (self-power, family power, and wisdom power). The majority of non-users, past-3-month occasional users and past-3-month users with likely SUD had similar trends in terms of demographic factors; for example, the majority of the 3 subgroup lived in two-parent households, had high GPA, and had an excellent level of self-power.

As shown in Table 3, students with an excellent level of life assets were less likely to engage in substance use, and the related factors that were found to discourage substance use statistically were being an only child, having a GPA the range between 3.00 and 4.00, and belonging to a two-parent family (P-value < 0.05). Moreover, a negative relationship between having an excellent level of wisdom power and substance use was detected (OOR = 0.48, 95% CI 0.35-0.66, P-value < 0.001).

DISCUSSION

This research examines the association between life assets and substance use in Thai students. Our results suggest a lower prevalence of substance use among students with an excellent level of life assets (especially wisdom power). According to previous studies in the United States[8,11], the number of assets was negatively related to alcohol and substance use, and youths who had any 1 of the assets were approximately 1.5 to 3 times more likely to report nonuse of substances. Our findings support that the demographic factors such as being an only child, belonging to two-parent households, and having a high GPA are statistically found to deter students from engaging in substance use. The studies in Kenya[19], California[20] and Thailand[21-24] also suggest that students who are an only child, who belong to two-parent households, and who have a high academic performance may be less likely to use substances. Possible reasons may be the protection and attention they receive from one or both parents[19], close parental monitoring[20], their sound understanding of the negative consequences of substance use[24], a good sense of competency, and a healthy level of self-control.[23] According to our results, the students met the overall criteria of life assets; the only exception was community power. Consisting with past surveys in Thailand[13-15], Thai students also met the overall criteria of life assets, except the community power. These results may be explained by the evolution of individualist societies.

Furthermore, 48% of the participating students reported engaging in lifetime substance use, and 39.3% were past-3-month substance users, of whom 63.4% participated in occasional substance use, and the remaining 36.6% were participants with likely SUD. These results mirror the findings of past studies, which have reported that students tend to try substances rather than use them regularly.[25] Alcohol was the most commonly used substance. According to Bangkok survey[3], Thai teenagers easily access to alcohol because two-thirds of them purchased alcohol by themselves.

In addition, it was found that, on average, the students initiated their use of substances at the age of 14.3 years due to primarily peer influence, stress or sadness, and curiosity. Consisting studies in Colorado[26], peer relationships are positively associated with adolescent substance use. In Thai surveys[3], teenagers drank alcohol for social purposes; drank alcohol with peers and drank alcohol alone when they had life problems. Adolescents who have peers that use substances and those experiencing high stress levels tend to use substances because they may observe and decide to imitate close their friends' negative behaviors[21,27] or substances as self-medication for mood-altering purposes.[26]

In conclusion, both researchers and healthcare practitioners may find the results of our study useful for the development in preventing substance use among high school students. Finally, national public health policies should focus on developing interventional strategies that aim to boost the students' life assets, and in particular, to promote education related to the dangers of engaging in substance use.

TABLE 1. Univariate analysis of life assets and their 5 domains among past-3-month substance users.

Life assets domains	Number of users (%)				P-value
	Overall Participants (n=1713)	Lifetime non substance users (n=886)	Past-3-month occasional users (n=425)	Past-3-month users with likely SUD (n=245)	
Life assets					0.01
Failure	310 (18.1)	146 (16.5)	94 (22.1)	48 (19.6)	
Moderate level	482 (28.1)	241 (27.2)	121 (28.5)	75 (30.6)	
Good level	525 (30.6)	263 (29.7)	134 (31.5)	72 (29.4)	
Excellent level	396 (23.1)	236 (26.6)	76 (17.9)	50 (20.4)	
Self-power					0.13
Failure	118 (6.9)	63 (7.1)	28 (6.6)	20 (8.2)	
Moderate level	354 (20.7)	162 (18.3)	108 (25.4)	50 (20.4)	
Good level	458 (26.7)	236 (26.6)	109 (25.6)	65 (26.5)	
Excellent level	783 (45.7)	425 (48.0)	180 (42.4)	110 (44.9)	
Family power					0.03
Failure	224 (13.1)	103 (11.7)	61 (14.4)	37 (15.1)	
Moderate level	1163 (9.5)	72 (8.1)	46 (10.8)	29 (11.8)	
Good level	317 (18.5)	152 (17.2)	86 (20.3)	49 (20.0)	
Excellent level	1006 (58.7)	557 (63.0)	231 (54.5)	130 (53.1)	
Wisdom power					<0.001
Failure	541 (31.6)	251 (28.4)	166 (39.2)	88 (35.9)	
Moderate level	502 (29.2)	253 (28.6)	123 (29.0)	70 (28.6)	
Good level	291 (17.0)	141 (16.0)	63 (14.9)	51 (20.8)	
Excellent level	377 (22.0)	239 (27.0)	72 (17.0)	36 (14.7)	
Peer power					0.29
Failure	410 (23.9)	224 (25.3)	98 (23.1)	51 (20.8)	
Moderate level	467 (27.3)	228 (25.7)	128 (30.1)	62 (25.3)	
Good level	390 (22.8)	197 (22.2)	101 (23.8)	60 (24.5)	
Excellent level	446 (26.0)	237 (26.7)	98 (23.1)	72 (29.4)	
Community power					0.33
Failure	939 (54.8)	477 (54.0)	250 (58.8)	129 (52.7)	
Moderate level	257 (15.0)	131 (14.8)	61 (14.4)	38 (15.5)	
Good level	243 (14.2)	122 (13.8)	62 (14.6)	37 (15.1)	
Excellent level	271 (15.8)	154 (17.4)	52 (12.2)	41 (16.7)	

TABLE 2. Univariate analysis of demographic characteristics among past-3-month substance users.

| Demographic data | Overall Participants (n=1713) | Number of users (%) | | | P-value |
		Lifetime non substance users (n=886)	Past-3-month occasional users (n=425)	Past-3-month users with likely SUD (n=245)	
Gender					0.002
Male	539 (31.5)	271 (30.6)	117 (27.5)	98 (40.0)	
Female	1157 (67.5)	610 (68.8)	304 (71.5)	142 (58.0)	
Other	17 (1.0)	5 (0.6)	4 (0.9)	5 (2.0)	
Siblings					0.07
Only child	314 (18.3)	178 (20.3)	64 (15.2)	41 (17.1)	
Siblings	1373 (80.2)	697 (79.7)	356 (84.8)	199 (82.9)	
GPA					<0.001
<3.00	450 (26.3)	200 (28.4)	120 (35.9)	83 (41.7)	
3.00-4.00	910 (53.1)	505 (71.6)	214 (64.1)	116 (58.3)	
Residence type					0.13
House	1497 (87.4)	749 (85.3)	338 (80.3)	199 (81.2)	
Dormitory	153 (8.9)	68 (7.7)	48 (11.4)	28 (11.4)	
Other (condominium)	51 (3.0)	61 (6.9)	35 (8.3)	18 (7.3)	
People living with (could choose more than one answer)					
Two-parent household	1114 (65.0)	602 (67.9)	270 (63.5)	139 (56.7)	0.004
One-parent household	335 (19.6)	168 (19.0)	79 (18.6)	58 (23.7)	0.21
Siblings	904 (52.8)	474 (53.6)	226 (53.3)	122 (49.8)	0.57
Friends	58 (3.4)	16 (1.8)	23 (5.4)	15 (6.1)	<0.001
Alone	59 (3.4)	28 (3.2)	19 (4.5)	11 (4.5)	0.4
Parent's marital status					0.43
Married	1263 (73.7)	668 (75.5)	310 (72.9)	171 (69.8)	
Separated	102 (6.0)	53 (6.0)	26 (6.1)	14 (5.7)	
Divorced	253 (14.8)	117 (13.2)	69 (16.2)	46 (18.8)	
Widowed	93 (5.4)	47 (5.3)	20 (4.7)	14 (5.7)	

TABLE 3. Multivariate analysis of demographic factors and life assets among past-3-month substance users.

Factors	Ordinal odds ratio	95% CI	*P*-value
Only child	0.75	0.55-1.00	0.03
GPA 3.00-4.00	0.63	0.50-0.79	<0.001
Two-parent household	0.79	0.63-0.99	0.02
Life assets			
Moderate level	0.78	0.57-1.07	0.06
Good level	0.79	0.58-1.08	0.07
Excellent level	0.62	0.44-0.87	<0.001

Limitations

There are two main limitations in this study. First, this cross-sectional survey cannot show a clear causal relationship between the students' life assets and substance use because it employed only self-reporting questionnaires. There is a real possibility that the participants might have not provided truthful information regarding their substance use due to it being considered a socially unacceptable behavior. Second, the study population was randomly sampled only from students in Southern Thailand; therefore, these findings might not be valid for all Thai students throughout the country. Furthermore, the majority of the participants were female students, who tend to be less likely to use substances.

Implications and future recommendations

Further studies should examine the life assets of students in alternative schools as well as those pursuing non-formal education. Thus, multi-center cohort studies are recommended.

CONCLUSION

This study investigated the association between individual life assets (including demographic factors) and the use of substance. Its findings revealed a statistically positive relationship between life assets and substance non-use. The students with an excellent level of life assets, especially wisdom power, were significantly less likely to use substances. The related factors that discouraged substance use were being an only child, having a high GPA, and belonging to two-parent households.

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