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Comparing the differences in health of body, mental and spirit among Schedule I and II controlled drugs users with Schedule III and IV controlled drugs users

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ABSTRACT

Objective: To compare the differences in physical, mental, and spiritual health among Schedule I and II with III and IV controlled drugs users.

Methods: A cross-sectional comparison design was used. A convenience sample of 479 drugs users was recruited in Taiwan.

Results: The results showed that Schedule I and II drug-users had less perceptions of their overall body-mental-spirit health than Schedule III and IV drug-users (52.72 vs. 55.40, $t = -3.00$, $p < .01$).

Conclusions: The health professionals could design drug rehabilitation programs for all Schedules of drug-users, especially for Schedule I and II drug-users.

Key Words: Drug-users, Physical, Mental, Spiritual, Health

1. INTRODUCTION

Substance usage is a very serious health problem in the world.^[1] The World Drug Report states that the number of illicit drug-users has increased from 4.9% (208 million people) in 2006 to 5.5% (271 million people) in 2017.^[2] Notably, 28 million people have lost healthy years of their lives because of drug usage, of which, 18 million human-beings experienced premature death caused by drug-usage in 2015.^[3] The World Health Organization (WHO) reports that the drug-attributable diseases account for approximately 1.5% of the global burden of disease. People who inject drugs (PWID) accounts for an estimated 30% of new Human Immunodeficiency Virus (HIV) infections outside sub-Saharan Africa

and contributes significantly to the epidemics of hepatitis B and hepatitis C in all regions.^[1] In 2017, there were 11.3 million PWID; in which, 1.4 million of them were living with HIV and 5.6 million of them were living with hepatitis C.^[2] In Taiwan, the number of known illicit drug-users in the population increased from 0.11% ($n = 24,525$) in 2006 to 0.15% ($n = 36,746$) in 2018.^[4,5] In Taiwan, 48.6% ($n = 15,212$) of illicit drug-users were affected with illnesses/diseases due to drug-use in 2018.^[5] An assessment of health history in Taiwan demonstrated that hepatitis C was the major disease affecting these drug-users (17.9%), followed by HIV infection (8.7%), hepatitis B (7.8%), and psychiatric symptoms (5.0%) (Ministry of Health and Welfare, 2019). Therefore, it

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is important for health professionals to strive to understand illicit drug-users' perceptions of their physical, mental, and spiritual health.

In Taiwan, narcotics are divided into four Schedules based on their extent of habitual usage, abusive usage, and danger to society.^[6] Schedule I includes using heroin, cocaine, and morphine. Schedule II comprises amphetamines, cannabis, and coca. Schedule III includes secobarbital, nalorphine, and amobarbital. Schedule IV includes codeine, allobarbital, and alprazolam. Statistics revealed that heroin was the most common illicit drug used in Taiwan in 2018 (46.3%, $n = 17,000$), followed by amphetamine (39.9%, $n = 14,648$).^[5] Ketamine was the most common Schedule III drug consumed with a rate of 6.4% of total drug-abuse in 2018. Then, followed by the benzodiazepine drugs (such as nimetazepam and flunitrazepam), which totalled 0.9% of drug-abuse. Illicit drug-usage leads to health problems; therefore, people with illicit drug-usage will be punished by the law in Taiwan. According to Narcotics Hazard Prevention Act, Schedule I and II drug users will be punished with imprisonment and forced to drug rehabilitation. Schedule III and IV drug users need to attend a narcotic hazard seminar for more than four hours and less than eight hours within a specific time frame.^[6] Moreover, people with Schedule I or II drug-usage have higher opportunity of drug-dependence than Schedule III and IV. Hence, the influences on health of body, mental, and spirit for Schedule I and II users may be worse than Schedule III and IV users.

Regarding bodily harm experienced from narcotic drug usage, many researches indicate that illicit drugs can cause severe bodily harm for users in all drug Categories. For example, using heroin (Schedule I) results in cardiovascular-diseases, kidney-disease, or acute lung-diseases; using amphetamine (Schedule II) could also result in cardiovascular diseases.^[7-9] Identically, using ketamine (Schedule III) may result in kidney disease or bladder diseases; benzodiazepine drugs (Schedule IV) could result in nausea, vomiting, or short-term memory loss.^[10-12]

Concerning mental harm, the euphoria experienced by narcotic drug usage is "unforgettable". This feeling promotes craving and they want to use narcotic drugs continuously. If they do not use them, they may have uncomfortable psychological feelings.^[13,14] For Schedule I and II illicit drug-users, they experience withdrawal symptoms when they are not using drugs. For example, heroin withdrawal symptoms include anxiety and restlessness. Amphetamine withdrawal symptoms include depression, anxiety, and tiredness.^[15] Schedule III and IV illicit drugs also experience withdrawal symptoms when they repeatedly use drugs and then suddenly stop.

However, the withdrawal symptoms of Schedule I, II illicit drugs results in more serious mental health damages relative to Schedule III, IV illicit drugs.^[16]

Concerning spiritual harm, most narcotic drug-users experience self-centeredness and focus on the present time and give little thought to the future. They rarely think about the meaning of their lives or, their life principles and values. Individuals without a healthy value system in life might, therefore, lose touch with their spiritual health.^[14,17] Schedule I and II illicit drug-users experience feelings of emptiness, hopelessness, uncontrolled criminal behavior and guilt; powerlessness in spiritual autonomy; and nearly all "give up" on their very "Self" when they use drugs.^[17] Schedule III and IV drug-users like to enjoy the happy moment of drug-usage. They do not believe they can and they do not want to refuse using illicit drugs. They tend to turn a blind eye and take evasive actions without thinking about their future.^[14,18] However, it can be seen that Schedule I and II drug-users endure more spiritual challenges than Schedule III and IV drug-users.

Some researchers have revealed how using Schedule I and II as well as Schedule III and IV illicit drug influences users' physical and mental health.^[1,12,19] Two studies compared the lived experiences of Schedule I and II, with Schedule III and IV drug-users.^[20,21] However, to date, no other research has compared the differences in physical, mental, and spiritual health among Schedule I and II illicit drug-users with Schedule III and IV illicit drug-users.

1.1 Research question

Ministry of Justice^[6] reported that people with Schedule I or II drug-usage have higher opportunity of drug-dependence and drug abuse than Schedule III and IV, which may affect their health. However, there is no study to compare the differences in physical, mental, and spiritual health among Schedule I and II with III and IV controlled drugs users. Therefore, the purpose of this study was to examine the research questions: (1) what were differences between Schedule I and II illicit drug-users with Schedule III & IV illicit drug-users, in terms of their physical, mental, and spiritual aspects of health? (2) what factors were associated with physical, mental, and spiritual aspects of health in people with illicit drug-used experiences? It is worthwhile to explore the issue and come to understand their different perceptions of their overall health together with circumstances associated with the differences between them. Further, providing more information for health professionals to take care of different Schedule drug-users, and thereby decreasing health problems caused by illicit drug-usage.

2. MATERIALS AND METHODS

2.1 Study design and sampling

This study used a cross-sectional comparison design recruiting a convenience sample of 479 participants.

2.2 Inclusion criteria of the study

- Participants had a history of abusing Schedule I, II controlled drugs who were being followed up by the case management officer, or had a history of abusing Schedule III, IV controlled drugs who had attended a six-hour drug-abuse health prevention lecture.
- Being 18 years old or over.
- Had the ability to complete the questionnaires.
- Agreed to participate in the study.

2.3 Data collection

The participants were recruited from a “Drug Abuse Prevention Center” in south Taiwan by the case management officers who were health professionals. Before data collection, the main researcher trained the case management officer to collect questionnaires. The data were collected in 2016.

2.4 Data collection tools

Data were collected on the personal characteristics questionnaire and the Health of Body, Mind and Spirit Scale (HBMS). The personal characteristics questionnaire included age, gender, education, marital status, religious beliefs, employment, alcohol consumption, smoking, health history, duration of drug-usage, and stress effect. The HBMS scale was developed from related references by the main researcher in the current study.^[22,23] The HBMS scale is designed to examine physical, mental, and spiritual health conditions in people who have drug abuse histories. The HBMS scale included 3 subscales and 15 items: physical health (4 items), mental health (7 items), and spiritual health (4 items). The HBMS statements used a five-point Likert scale from 1 (very inconsistent) to 5 (very consistent). The total score ranges from 15 to 75. Higher scores indicated enhanced health of the body, mind and spirit.^[23] The Cronbach's α and split-half reliability coefficients of the HBMS were all above 0.85. The HBMS had satisfactory criterion-related validity with the Relapse Prediction Scale (RPS) score ($r = -0.50, p < .001$). The RPS is commonly used to predict relapse intention of substance uses in Taiwan.^[24] The construct validity of the HBMS scale is well established. The factor loading of each item was between 0.74-0.95. A second-order confirmatory factor analysis (CFA) was conducted on the HBMS and the fit indexes were respectable ($\chi^2 = 184.060, df = 94, \chi^2/df = 1.958, p = .000$).^[23] Therefore, the HBMS indicated fitting reliability and validity. In this study, internal consistency was

reassessed using Cronbach's α , and for the overall scale was 0.90 and for three subscales (Body, Mind, and Spirit subscales) were .84, .89, and .90, respectively, which indicated the appropriate reliability of this scale.

2.5 Statistical analysis

Data were entered and analyzed using IBM®SPSS®Version 22. Participants were divided into Schedule I and II controlled drug-users (Group 1) and III and IV controlled drug-user (Group2). Distribution of individual characteristics and items of the HBMS scale were screened for normality and missing data.^[25] There were 11 cases in Schedule III and IV drug-user group whose data were incomplete, and thus, they were labeled as missing data and removed from data analysis. No missing data appeared in Schedule I and II drug-user group. Variables significantly associated with differences between group 1 and 2 using bivariate analysis (i.e., Chi-square and *t*-test) were selected to examine their relations with physical, mental, and spiritual aspects of health in people with controlled drug used experiences. A rule of 20-to-1 participants to variables ratio is recommended for appropriate sample size in using linear regression analyses.^[25] Nine variables were selected to regress on the HBMS scale, which suggests that appropriate sample size for enough power is at least 180 participants. The current study contains 479 cases of data. A *p*-value less than .05 was used to indicate statistical significance.

2.6 Ethical considerations

This study was approved by the Human Research Ethics Committee (103-347) and informed consent was obtained from all individual participants. Participants were voluntary and free to participate in this study. Each participants' anonymity was assured by using a number code.

3. RESULTS

3.1 Demographic characteristics

There was a total of 479 participants in the current analysis; 199 were in Group 1 with 280 in Group 2. The three common drugs used in Group 1 were: amphetamine (60.3%, $n = 120$); heroine (49.7%, $n = 99$) and methylenedioxymethamphetamine (MDMA) (11.1%, $n = 22$). The main drugs used by Group 2 were: ketamine (98.6%, $n = 276$); nimetazepam (9.6%, $n = 27$) and flunitrazepam (FM2) (3.6%, $n = 10$). Table 1 shows that the two groups could be differentiated on background characteristics, including age, gender, education, religious beliefs, employment status, alcohol consumption, health history, and duration of drug usage. In Group 1 the drug-users were older, more males, more had religious beliefs, more had a history of health problems than the Group 2 drug-user did. Moreover, Group 1 reported higher percent-

ages on primary education attainment (i.e., elementary and junior high school) than Group 2 did (7.5% vs 1.1% for elementary, 38.7% vs. 19.6% for junior high, respectively); as well as a higher percentage on drug-usage ≥ 9 years (29.6% vs. 5.7%). Finally, Group 1 drug-users worked less and drank less than the Group 2 did.

Table 1. Demographic difference between Schedule I, II and III, IV drug-user

Variables	Total Sample (N = 479)	Schedule I, II (N = 199)	Schedule III, IV (N = 280)	t	p
Age (mean, SD)	32.61 (10.39)	40.88 (9.76)	26.74 (5.83)	18.25	< .01
Variables	Total Sample n (%)	Schedule I, II n (%)	Schedule III, IV n (%)	χ^2	p
Gender (n male, %)	375 (78.3%)	165 (82.9%)	210 (75.0%)	4.29	.038
Education				39.66	< .01
≤ Elementary	18 (3.7%)	15 (7.5%)	3 (1.1%)		
≤ Junior high	132 (27.6%)	77 (38.7%)	55 (19.6%)		
Senior high	280 (58.5%)	93 (46.7%)	187 (66.8%)		
> Senior high	49 (10.2%)	14 (7.0%)	35 (12.5%)		
Marital status				0.03	.86
Not married	406 (84.8%)	168 (84.4%)	238 (85.0%)		
Married	73 (15.2%)	31 (15.6%)	42 (15.0%)		
Religious (n Yes, %)	341 (71.2%)	155 (77.9%)	186 (66.4%)	7.45	< .01
Employment hrs/wk				24.73	< .01
No	127 (26.5%)	73 (36.7%)	54 (19.3%)		
< 20 hrs	47 (9.8%)	21 (10.6%)	26 (9.3%)		
20-39 hrs	99 (20.7%)	43 (21.6%)	56 (20.0%)		
≥ 40 hrs	206 (43.0%)	62 (31.2%)	144 (51.4%)		
Alcohol Consumption				35.96	< .01
No	176 (36.7%)	103 (51.8%)	73 (26.1%)		
< 3 times/wk	226 (47.2%)	78 (39.2%)	148 (52.9%)		
≥ 3 times/wk	77 (16.1%)	18 (9.0%)	59 (21.1%)		
Smoking				2.96	.23
No	39 (8.1%)	21 (10.6%)	18 (6.4%)		
≤ 1 pack/d	330 (68.9%)	136 (68.3%)	194 (69.3%)		
> 1 pack/d	110 (23.0%)	42 (21.1%)	68 (24.3%)		
Health history (mc)					
No health problems	351 (73.3%)	102 (51.3%)	249 (88.9%)	84.31	< .01
Mental disorders	33 (6.9%)	22 (11.1%)	11 (3.9%)	9.21	< .01
Liver disease	31 (6.5%)	25 (12.6%)	6 (2.1%)	20.67	< .01
Hypertension	25 (5.2%)	23 (11.6%)	2 (0.7%)	27.65	< .01
Heart disease	16 (3.3%)	15 (7.5%)	1 (0.4%)	18.58	< .01
Sexual disease	14 (2.9%)	12 (6.0%)	2 (0.7%)	11.59	< .01
Peptic ulcer	14 (2.9%)	11 (5.5%)	3 (1.1%)	8.14	< .01
Kidney disease	8 (1.7%)	5 (2.5%)	3 (1.1%)	1.47	.23
Chronic cystitis	7 (1.5%)	6 (2.1%)	1 (0.5%)	2.17	.14
Duration of drug-usage				65.13	< .01
< 1 yr	160 (33.4%)	40 (20.1%)	120 (42.9%)		
1-3 yrs	165 (34.4%)	60 (30.2%)	105 (37.5%)		
4-6 yrs	54 (11.3%)	27 (13.6%)	27 (9.6%)		
7-8 yrs	25 (5.2%)	13 (6.5%)	12 (4.3%)		
≥ 9 yrs	75 (15.7%)	59 (29.6%)	16 (5.7%)		
Stress (n Yes, %)	195 (40.7%)	79 (39.7%)	116 (41.4%)	0.14	.70
Stress effect				5.29	.15
No influence	237 (49.5%)	93 (46.7%)	144 (51.4%)		
Minor	152 (31.7%)	59 (29.6%)	93 (33.2%)		
Moderate	62 (12.9%)	33 (16.6%)	29 (10.4%)		
Severe	28 (5.7%)	14 (7.0%)	14 (5.0%)		

Note. SD = standard deviation; MC = multiple choices

3.2 The differences of the Health of Body, Mind, and Spirit Scale (HBMSS) between Group 1 vs. 2

Table 2 illustrates that the two groups could be differentiated on items of the HBMSS. Overall, the total score on the body subscale demonstrated that Group 1 was higher than those in Group 2, although the difference was not significant (14.37 vs. 14.18, $p = .55$). Only one item was significantly different between the two groups, revealing that participants reported higher scores on Item 4 (i.e., maintain a regular daily routine) in Group 1 than those in Group 2 did (3.77 vs. 3.49, $p < .01$).

For the Mind subscale, the total score was lower in the Group 1 than Group 2. (24.30 vs. 25.86, $p < .01$), indicating unhealthy mind conditions. Four out of seven items on the Mind subscale reported significantly lower scores (i.e., unhealthy mind condition) in Group 1 compared to those in Group 2. The four items were: (I6) I feel depressed; (I7) I live my own world and do not want to face reality; (I8)

cannot trust others, and (I9), I feel easily frustrated when I encounter day-to-day events. Similarly, the total score of the Spirit subscale was lower in the Group 1 than those in Group 2 (14.06 vs. 15.36, $p < .01$), indicating unhealthy spiritual conditions. All four items on the Spirit subscale were significantly different between the two groups.

3.3 The HBMSS

Demographic characteristics are presented in Table 1, nine variables were selected to identify predictors associated with the three subscales of HBMSS using linear regression analyses. These variables are controlled drug-use schedule (Group 1 vs. 2), age, education, employment status, being male, a religious belief, duration of drug-usage, health history, and stress effect. The regression coefficients (B) and standardized regression coefficient (β) representing the associations between predictors and the three subscales of HBMSS are shown in Table 3.

Table 2. Differences of the Health of Body, Mind, and Spirit Scale between Schedule I, II and Schedule III, IV (N = 479)

Variables	Schedule I, II (N = 199) Mean (SD)	Schedule III, IV (N = 280) Mean (SD)	t	p
Body subscale				
I1. Generally speaking, I feel that my physical health is well.	3.55 (1.12)	3.74 (0.99)	-1.93	.054
I2. I have enough sleep.	3.56 (1.01)	3.48 (1.01)	0.85	.48
I3. I feel energetic.	3.49 (0.98)	3.48 (0.93)	0.14	.89
I4. I can maintain a regular daily routine.	3.77 (0.88)	3.49 (1.09)	3.15	< .01
Sum of Body subscale	14.37 (3.17)	14.18 (3.40)	0.60	.55
Mind subscale (N = 487)				
I5. I am not interested in anything.	3.38 (0.95)	3.43 (1.03)	-0.47	.64
I6. I feel depressed.	3.28 (1.06)	3.66 (0.97)	-4.03	< .01
I7. I live my own world and do not want to face reality.	3.60 (1.03)	3.91 (1.05)	-3.27	< .01
I8. I cannot trust others.	3.41 (1.03)	3.62 (1.08)	-2.15	.03
I9. I feel easily frustrated when I encounter day to day events.	3.30 (1.00)	3.59 (1.04)	-3.03	< .01
I10. I feel nobody cares about me.	3.70 (1.09)	3.87 (1.00)	-1.74	.08
I11. I usually feel distressed because of my personal relationships.	3.63 (1.00)	3.79 (1.10)	-1.61	.11
Sum of Mind subscale	24.30 (5.18)	25.86 (5.90)	-3.00	< .01
Spirit subscale (N = 487)				
I12. I feel hopeful about the future.	3.41 (1.03)	3.76 (0.96)	-3.83	< .01
I13. I feel my life is meaningful.	3.51 (0.94)	3.81 (0.90)	-3.48	< .01
I14. I always keep an optimistic attitude toward my life.	3.56 (0.91)	3.88 (0.91)	-3.73	< .01
I15. I have a goal in life.	3.57 (0.97)	3.88 (0.92)	-3.97	< .01
Sum of Spirit subscale	14.06 (3.21)	15.36 (3.30)	-4.32	< .01
Sum of Body-Mind-Spirit scale	52.72 (9.64)	55.40 (9.62)	-3.00	< .01

Note. Underlined items present that this item's scoring is reversed; SD = standard deviation

Table 3. Factors associated with the HBMS (N = 479)

Variables	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Body subscale model					
Drug-user (Schedule I & II vs. Schedule III &IV)	-0.81	0.39	-0.12	-2.11	.04
Age	0.02	0.02	0.05	0.84	.40
Education (< high school vs. \geq high school)	-0.09	0.32	-0.01	-0.28	.78
Employment status (not working vs. working)	-0.24	0.33	-0.03	-0.72	.47
Male	0.93	0.35	0.12	2.70	.01
Had religious beliefs	-0.05	0.31	-0.01	-0.16	.88
Duration of drug-usage	-0.26	0.11	-0.11	-2.35	.02
History of disease (yes vs. no)	1.42	0.37	0.19	3.87	< .01
Stress effect	-1.23	0.16	-0.33	-7.67	< .01
Constant	16.29	1.26		12.93	< .01
Body subscale model adjusted R^2 18.0%					
Mind subscale model					
Drug-user (Schedule I & II vs. Schedule III &IV)	1.02	0.67	0.09	1.54	.13
Age	0.05	0.03	0.09	1.43	.15
Education (< high school vs. \geq high school)	0.13	0.55	0.01	0.24	.81
Employment status (not working vs. working)	1.30	0.57	0.10	2.29	.03
Male	-0.64	0.60	-0.05	-1.07	.29
Had religious beliefs	1.28	0.53	0.10	2.39	.02
Duration of drug-usage	-0.33	0.19	-0.08	-1.68	.09
History of disease (yes vs. no)	1.10	0.63	0.09	1.74	.08
Stress effect	-2.05	0.28	-0.32	-7.39	< .01
Constant	24.11	2.18		11.06	< .01
Mind subscale model adjusted R^2 16.2%					
Spirit subscale model					
Drug-user (Schedule I & II vs. Schedule III &IV)	0.51	0.39	0.08	1.30	.19
Age	0.00	0.02	0.00	0.04	.97
Education (< high school vs. \geq high school)	0.24	0.32	0.03	0.74	.46
Employment status (not working vs. working)	0.32	0.33	0.04	0.95	.34
Male	0.34	0.35	0.04	0.97	.33
Had religious beliefs	0.43	0.32	0.06	1.37	.17
Duration of drug-usage	-0.19	0.11	-0.08	-1.64	.10
History of disease (yes vs. no)	1.12	0.37	0.15	3.01	< .01
Stress effect	-1.00	0.16	-0.27	-6.13	< .01
Constant	14.39	1.29		11.20	< .01
Spirit subscale model adjusted R^2 15.5%					

Note. *B* = unstandardized beta of coefficient; *SE* = standard error; β = standardized beta of coefficient

In the Body subscale, five variables, i.e., controlled drug-use schedule, gender, health history, duration of drug usage, and stress effect, were associated with the Body subscale score. For instance, being male ($\beta = 0.12$, $p = .01$) with no history of disease ($\beta = 0.19$, $p < .01$) was positively associated with higher scores of the Body subscale (i.e., healthier body conditions). Alternatively, Schedule III, IV (Group 2) controlled drugs users ($\beta = -.12$, $p = .04$), longer duration of drug usage ($\beta = -.11$, $p = .02$) and higher level of stress ($\beta = -.33$, $p < .01$) were negatively associated with higher scores of the Body subscale. Totally, 18.0% of variance of the Body subscale was explained by these nine variables.

In the Mind subscale, three variables, i.e., employment ($\beta = 0.10$, $p = .03$) and having a religious belief ($\beta = 0.10$, $p = .02$) were positively associated with higher scores of the Mind subscale (i.e., healthier mind conditions). A higher level of stress was negatively associated with lower scores of the Mind subscale (i.e., unhealthy mind conditions) ($\beta = -0.32$, $p < .01$). Totally, 16.2% of variance of the Mind subscale was explained by these nine variables.

In the Spirit subscale, two variables, i.e., reporting no history of disease ($\beta = 0.15$, $p < .01$) was positively associated with higher scores of the Spirit subscale (i.e., healthier spiritual conditions). A higher level of stress was negatively associ-

ated with higher scores on the Spirit subscale ($\beta = -0.27, p < .01$). Totally, 15.5% of variance of the Spirit subscale was explained by these nine variables.

4. DISCUSSION

In this study, the most common drug used in Group 1 was amphetamine (60.3%); and in Group 2 it was ketamine (98.6%). These results support research by Cheng and Yu^[21] who compared the drug experience between Schedule I, II drug-abusers ($n = 128$) and Schedule III, IV drug-abusers ($n = 387$). In their study, amphetamine (82.8%) was also the most common drug used in Schedule I and II drug-users and ketamine (91.8%) was also the most common drug used in Schedule III and IV drug-users. Amphetamines influences users' health more seriously than ketamine demonstrating that amphetamine users' physical conditions included: cardiovascular diseases, extreme weight loss, severe dental problems, intense itching and sleeping disorders; psychological problems included: anxiety, confusion, violent behavior, paranoia, and hallucinations.^[15] Compared with ketamine, low-dose intoxication influences the users' mind, learning ability, and memory. Higher-dose ketamine results in kidney disease, bladder diseases, dreamlike states, amnesia, delirium, and hallucinations.^[16]

The results found that there was a significant difference between Group 1 and Group 2 drug-users regarding age, gender, education, religious beliefs, health history, and duration of drug-usage, which echoed the results of Cheng and Yu^[21] who found that Schedule I and II drug-users were older, more male, lower educational attainment, longer duration of drug-abuse than Schedule III and IV drug-users had. In this study, a significant difference appeared between Group 1 and Group 2 drug-users on variables such as employment status and alcohol consumption, indicating Group 1 drug-users worked less and drank less than the Group 2 did. Further, our results indicated that 36.7% of Group 1 drug-users ($n = 73$) were unemployed. Therefore, group 1 drug-users would require some help to prepare them for the working environment supporting Cheng and Yu's^[20] finding. In terms of the differences in experiences of drinking alcohol between two groups of drug users this need further exploration.

This current study demonstrated that Schedule I and II drug-users maintained a regular daily routine better than Schedule III and IV drug-users did. In Taiwan, Schedule I and II drug-users are required to go into a rehabilitation center for observation, rehabilitation, or receive a compulsory rehabilitation program.^[6] Results from the present study indicated that the participants in Schedule I and II (Group 1) drug-users were followed up by case management officers. They have a telephone session with the drug-user once per month for

at least six months. The main aim of telephone sessions is to support the rehabilitation of health for Schedule I and II drug-users. In current study results revealed that Schedule I and II (Group 1) drug-users were older than Schedule III and IV drug (Group 2) users were. Results from other research indicate that when people are older, they have a healthier lifestyle such as a regular daily routine.^[20]

Results of the Mind subscale in the present study demonstrated that Group 1 drug-users have less mental health issues than Group 2 users did. Literature reports that when drug-users have a psychological dependence on narcotic drugs, this is difficult to eradicate, and they find it difficult to abstain from using narcotic drugs ever again. This vicious circle impacts negatively on their mental health issues.^[13,14] Other results conjoined with the results from this study show that Schedule I and II drug-users have more serious psychological dependence than Schedule III and IV drug-users.^[20,21] For example, amphetamine users have a strong, virtually intolerable, psychological dependence when they suddenly stop using amphetamine. Moreover, they feel depressed and anxious due to withdrawal symptoms.^[15] Inversely, ketamine users demonstrated that they had no obvious withdrawal symptoms, but they agreed they felt depressed during ketamine withdrawal.^[16]

Results of the Spirit subscale in the present study illustrated that Group 1 drug-users revealed they had poorer spiritual health than Group 2 drug-users did. Group 1 also had more serious withdrawal symptoms than Group 2 did. These results endorse those of NIDA in 2016,^[19] and 2017.^[15] Thus, Schedule I and II drug-users "needed to use" drugs to avoid withdrawal symptoms. These results illustrate that Schedule I and II drug-users were "controlled" by the drugs and they had "used" drugs for a long time. In this study, 49.7% ($n = 99$) of Group 1, (Schedule I, II drug-users) had used drugs for over four years and 36.7% of Group 1 drug-users ($n = 73$) were unemployed. Overall, they felt that "life is meaningless" and they had "no hope" for the future hence, influencing their spiritual health.^[14,17] Alternatively, Schedule III, IV drug-users rarely experienced withdrawal symptoms.^[11,16] Moreover, their drug-use duration was shorter and most of them were employed. In this study, 42.9% ($n = 120$) of Group 2 (Schedule III, IV) drug-users "used" drugs for less than one year and 80.7% of them ($n = 226$) were employed. Therefore, they felt their lives had some "meaning" and they expressed "hope for the future".

Demonstrated also in this study were some factors that could predict the health condition of drug-users. For example, results illustrated that: stress; history of disease; status of employment; religious beliefs; gender, schedule of controlled

drug, and duration of drug-usage impacted negatively on their health. Specifically, stress influenced the health condition of body, mind, and spirit of drug-users, echoing Cibrian-Llenderal, Melgarejo-Gutierrez, and Hernandez-Baltaza's^[26] views of substance abusers. Moreover, these results support other research, which demonstrates that stress is a particularly prevalent form of psychological tension, and is harmful to health and wellbeing.^[27,28] In this study, a history of disease could be used to predict the health conditions of body and spirit of drug-users. These results together with those of other researchers illustrated that using different Schedules of drugs could impact on the health of different organs leading to cardiovascular, kidney, and liver diseases.^[7,9,10,12] Further, in this study it was found that employment-status and religious belief helped promote the drug-users' mental health. "Meaningful" work has long been one of the important ways to feel good about oneself, enhancing people's mental health. Pardini et al.^[28] reported that a strong religious belief was associated with a more optimistic life orientation in 236 individuals recovering from substance abuse. Pardini et al.^[28] hypothesized that an optimistic life orientation plays a primary role on the personal growth of humankind, which enhances their mind health.

There are two limitations in this study. First, the study recruited a convenience sample of 479 participants from only one drug-abuse prevention centre focusing on a certain type of controlled drug-user. This might have caused some bias. However, this drug-abuse prevention centre is a government department in Taiwan, which would increase the diversity of the recruiting sample, and improve the generalizability of the study sample. Second, all information sources based on participants' self-reported data have a limitation due to social desirability bias. For example: regarding perceptions

of body, participants might have either overstated or deflated their self-report and regarding feelings of depression, participants might have denied this feeling.

5. CONCLUSIONS

In this study, results illustrated that Schedule I and II drug-users (Group 1) fared worse on mind and spiritual health than in Schedule III and IV drug-users (Group 2) did. Stress effect, history of disease, employment status, religious beliefs, gender, type of drugs, and the duration of drug usage were factors, which impacted on the health and wellbeing of body, mental, and spirit.

6. IMPLICATIONS FOR NURSING PRACTICE

In clinical practice, the health professionals should create and maintain appropriate and effective patient-centered rehabilitative programs for drug-users to enhance their holistic health and well-being, especially for Schedule I and II drug-users (Group 1). Moreover, the programs should include teaching substance users effective coping strategies to deal with their stress. In future research, the sample size could be increased, and, data could be collected from more drug-abuse prevention centres in Taiwan in order to decrease the sample bias.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

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