The Relationship between Lifestyle Choices and Substance Addiction in Young Adults

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Abstract

This study looked at the relationship between lifestyle choices and various substance addictions in young adults by applying the Relapse Prevention model of addiction. The data was obtained from a cross-sectional questionnaire (Depression and Anxiety Assessment Test) of 926 young adults aged 18-24 from 24 countries. Of these, 17.6% reported that they had a serious substance addiction, with alcohol addiction being the highest (11.2%), followed by nicotine (10.3%) and illicit drug (8.7%) usage. Results of chi-square test and logistic regression analysis revealed a significant association between all lifestyle factors (exercise patterns, intake of dietary nutrients like tryptophan, folic acid, omega-3 fatty acids and micronutrients, spiritual habits such as Bible reading and prayer) and addiction to substances (illicit drugs, alcohol and nicotine). Depression was also found to be a significant factor influencing substance addiction. Interestingly, the risk of alcohol addiction was the highest at 9.87(95% CI: 4.525-21.525) times among those who didn't have the habit of daily Bible reading. The highest risk of nicotine and illicit drug addiction was among those who consumed ‘less than 1 serving’ of dietary micronutrients per day compared to those who consumed ‘5 or more servings’, with odds ratios of 9.606(95% CI: 2.726-30.111) and 8.642(95% CI: 2.022-37.378), respectively. These findings suggest that holistic lifestyle interventions may help prevent and reduce substance addiction in young adults.

INTRODUCTION

Young adults are the age-group most likely to use substances.[1] This study looked into the factors affecting the substance addiction in young adults by applying the Relapse Prevention (RP) model. Well-known as a cognitive behavioral model, the RP is based on the principle of moderation and identifies lifestyle imbalances as a precipitant of relapse.[2,3] The authors intend the term ‘lifestyle’ to mean the key ingredients that make up a person’s health and well-being, including (but not limited to) nutrition, exercise and spiritual activities.[2,3]

In a recent study by Clarke (2020), in terms of examining wellness factors and substance addiction relapse, only Physical Self wellness (pertains to components of one’s physical well-being and consists of nutrition and exercise) showed a significant correlation with the number of relapse days (r=-.20, p<.01).[4] For instance, Schroeder and Higgins (2017) found that micronutrient intake was a strong predictor of substance use.[5] In the same study, nutrient imbalance (“empty calories” intake, or a diet high in calories/macronutrients but low in micronutrients, such as junk food) was also significantly associated with illicit drug use in women. As with nutrition, physical exercise releases neurotransmitters that help keep the brain healthy. Both animal and human studies have shown that exercise effectively reduces cravings for substances, suppresses substance-seeking behavior, and stops addiction.[6,7,8] Moreover, Hope and Cook (2010) found that spiritual lifestyle factors such as ‘read the bible every week’ and ‘pray most days’ were the most important predictors of never having smoked, drunk alcohol or tried drugs amongst a group of young people aged 17-30.[9]

Based on the evidence provided above, the present study suggests that lifestyle imbalance can influence substance addiction in young adults.

METHODS

This is a multi collaborative research project between Sahmyook University, Weimar University and the Nedley Clinic. The data was obtained from a cross-sectional (online/offline) survey questionnaire (Depression and Anxiety Assessment Test, registration TX 7-398-022) of 926 young adults aged 18 to 24 from 24 countries. The collected data were analyzed in SPSS 21 using descriptive statistics, chi-square (χ^2) test, and binary logistic regression analysis. The study was approved by Sahmyook university’s IRB committee.

RESULTS

• General characteristics

Mean age of the sample was 20.62 years (SD = 2.001 years), and 65.8% (n=609) of the participants were female. With regard to nationality, 70.6% (n=654) of the participants were from the United States, 12.9% (n=119) from South Korea, and 5.6% (n=52) from Australia. The majority were Caucasian (46.7%, n=434), followed by Asian 21.9% (n=203), Hispanic 14.5% (n=134), and Black (8.8%, n=82).

Among the subjects, 17.6% (n=163) responded that they had severse addiction to one or more of the following substances: illicit drugs, alcohol, nicotine. The most commonly used substance was alcohol (11.2 %, n=104), followed by nicotine (10.3%, n=95), and illicit drugs (8.7%, n=81). Lastly, participants had the mean PHQ-9 score of 10.93 (SD±8.041). More than half (51.4 %, n=476) of the participants were depressed (PHQ-9 score of 10 or higher).

• Chi-square test results

The prevalence of substance addiction varied across sociodemographic and lifestyle related groups. Males had significantly higher prevalence of illicit drug addiction (12.6%) than females (6.7%, p<0.01). The 24-year-old group had the highest rate of alcohol addiction at 18.9% compared to other age groups (p<0.05). And Caucasians (11.6%, p=0.06) had significantly higher rates of illicit drug addiction. However, within the country and ethnic variables, some groups were excluded from interpretation as they showed adjusted residual values that failed to exceed the +/- 2 criterion.

Results of chi-square test revealed a significant association between all lifestyle factors (exercise patterns, intake of dietary nutrients like tryptophan, folic acid, omega-3 fatty acids and micronutrients, spiritual habits such as Bible reading and prayer) and substance addiction (illicit drugs, alcohol, nicotine). And depression was also found to be a significant factor influencing substance addiction.

• Binary logistic regression analysis results

Following table represents sociodemographic, lifestyle-related and psychological (depression) risk factors associated with substance addiction. Males reported more illicit drugs and nicotine addiction than females, and those who reported to have alcohol addiction was significantly higher in the 24-year-old group than the 18-year-old group. Having major depressive disorders (MDD, PHQ-9≥10) predicted illicit drugs, alcohol, nicotine addiction by six times (OR=6.17, 95% CI: 3.296-11.566, p=.000), almost three times (OR=2.97, 95% CI: 1.875-4.704, p=.000), and almost four times (OR=3.69, 95% CI: 2.230-6.111, p=.000), respectively. Interestingly, the risk of alcohol addiction was the highest at 9.87 (95% CI: 4.525-21.525) times among those who didn't have the habit of daily Bible reading. The highest risk of nicotine and illicit drug addiction was among those who consumed ‘less than 1 serving’ of dietary micronutrients per day compared to those who consumed ‘5 or more servings’, with odds ratios of 9.06(95% CI: 2.726-30.111) and 8.69(95% CI: 2.022-37.378), respectively.

Variables		Illicit drugs				Alcohol				Nicotine			
		OR	(95% C.I.)		p	OR	(95% C.I.)		p	OR	(95% C.I.)		p
Gender	Female	1				1				1			
	Male	2.00	1.26	3.16	0.003**	1.14	0.74	1.74	0.552	1.56	1.01	2.40	0.045*
Age	18	1				1				1			
	19	0.99	0.40	2.46	0.983	0.67	0.28	1.65	0.389	0.58	0.24	1.40	0.228
	20	1.95	0.89	4.27	0.094	1.28	0.77	3.31	0.204	1.73	0.88	3.40	0.115
	21	1.54	0.66	3.62	0.317	1.41	0.65	3.08	0.383	1.03	0.47	2.26	0.942
	22	1.37	0.53	3.52	0.52	1.98	0.9	4.34	0.09	1.04	0.44	2.44	0.936
	23	1.53	0.63	3.74	0.347	1.73	0.79	3.78	0.172	1.25	0.57	2.76	0.576
	24	2.12	0.91	4.93	0.08	2.72	1.31	5.66	.007**	1.54	0.72	3.3	0.266
Prayer	Yes	1				1				1			
	No	2.87	1.73	4.76	.000***	3.91	2.41	6.34	.000***	4.75	2.80	8.085	.000***
Bible reading	Yes	1				1				1			
	No	8.64	3.72	20.08	.000***	9.87	4.53	21.53	.000***	7.56	3.61	15.80	.000***
Tryptophan	Regularly	1				1				1			
	Occasionally	1.49	0.82	2.70	0.189	2.06	1.18	3	0.011	1.70	0.96	3.01	0.067
	Almost never or never	3.91	2.07	7.41	.000***	4.70	2.55	8.64	.000***	4.52	2.45	8.34	.000***
Folic acid	Regularly	1				1				1			
	Occasionally	2.03	1.07	3.87	.031*	2.58	1.43	4.65	.002**	1.68	0.92	3.05	0.092
	Almost never or never	3.53	1.93	6.47	.000***	4.10	2.33	7.21	.000***	3.48	2.01	6.04	.000***
Micronutrient (servings)	5 or more	1				1				1			
	3-4	3.89	0.87	17.33	0.074	2.33	0.77	7.05	0.135	2.76	0.79	9.67	0.113
	2-3	5.72	1.36	24.10	.017*	3.06	1.07	8.72	.037*	3.67	1.11	12.14	.033*
	Less than 1	8.69	2.02	37.38	.004**	7.18	2.49	20.67	.000***	9.06	2.73	30.11	.000***
Omega-3 fatty acids	Yes	1				1				1			
	No	2.15	1.06	4.39	.035*	3.33	1.59	6.98	.000***	3.46	1.58	7.61	.002**
Physical exercise	Yes	1				1				1			
	No	2.32	1.39	3.88	.001**	2.09	1.33	3.28	.001**	1.80	1.14	2.85	.012*
Depression	No	1				1				1			
	Yes	6.17	3.30	11.57	.000***	2.97	1.88	4.70	.000***	3.69	2.23	6.11	.000***

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

CONCLUSION/ FUTURE RESEARCH

- In young adults it seems that lifestyle choices and depression appear to be associated with the risk of substance addiction. The results of the current study suggest that these subjects may benefit from lifestyle improving interventions.
- The results support the RP model of addiction applied in the present study. Based on the principle of moderation, RP suggests that unnatural cravings arise from lifestyle imbalances, which lay the foundation for substance use. Therefore, it suggest developing a healthy physical, mental, and spiritual lifestyle habits, so that one can be freed from the craving for unnatural stimulants or substances.
- The data collected were from a cross-sectional study design, so a causal relationship could not be deteremined. Future research can include a longitudinal study design, possibly looking at young adults’ various lifestyle factors and whether substance use occurs in the future.
- This research focused on young adults. Future research can see if these results are replicable with stronger effects in highschool and college age participants.
- Based on the results from this study, educating young people on the principles of healthful living might be a place to begin for substance addiction prevention and intervention. The youth of today are a sure index to the future of society. Healthy lifestyle habits formed in youth will generally mark the course of the possessor through life. Youth is the time to establish healthy habits. “Youth is the sowing time, and the seed sown determines the harvest, both for this life and the life to come.”[10]