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Substance Use Disorder: Veterans

Introduction

Over the past 20 years, a number of veterans experienced a surge in the rates of SUDs. In essence, (Golub et al., 2013) believe that SES is one of the factors that promote the development of SUDs, particularly in veteran populations. Therefore, this research explores the complex interplay between these variables by examining the research question.

SUD problems emerge among the veterans mostly because some veterans may end up abusing substances like drugs. This issue of returning to abuse drugs is a secondary impact of mental health problems. Veterans are more likely to experience PTSD due to various negative experiences, particularly those encountered during war. Another aspect is socio-economic status. This factor may worsen the conditions of the veterans by adding to the risks. Low socio-economy can make people vulnerable to SUD. During the transition from active duty by veterans to civilian life, veterans always face many social and economic hurdles. These hurdles make them susceptible to substance abuse (Golub et al., 2013). Moreover, due to financial constraints, veterans might not afford mental health care and addiction treatment facilities.

The support that a person relies on helps a great deal when dealing with veterans coping with life stressors. This support system also plays a great deal in helping people prevent

substance use disorders. The support system for veterans with stress-related issues can be reduced by support systems such as governmental and non-governmental organizations. These organizations help a great deal in providing these veterans with tools for their successful reintegration back into society. Governments can offer support resources like healthcare, occupational training, housing assistance and economic aid. These resources help a great deal to support veterans as they adjust during this period. Also, an informal support system plays a great deal. These informal systems include relations such as relatives, peers, or soldier companions who have experienced the same things.

Literature Review

Many soldiers experience SUD problems. This issue has become a major issue among this group. Several factors, such as socio-economic status and support system, influence the incidence and severity of SUD among veterans. The current literature examines studies that link SES, the role of support systems and the impact of SUD among veterans. Examining recent researchers (Gray et al. 2023; Johnston et al. 2016) helps to understand more of these connections.

SDS and Socio-economic Status Among Adolescents

(Mericle et al., 2015) have shown that socio-economic status has a lot of impact on substance use disorders in veterans. This author also examined various aspects, including employment status, education level, and income. In this case, the author insinuates that there is strong evidence showing that veteran's low SES posed greater risks of SUD.

Another study by (Golub et al., 2013) insinuates that stress among veterans often occurs due to some factors such as unemployment or poverty. This author further stretches far into

treatment that focuses on the psychological aspects of veterans. This study notes that although there are different efforts by different stakeholders to combat this problem, low educational attainment may also hinder access to information and resources necessary to treat mental health issues that enhance SUD susceptibility appropriately.

Support Systems: The role of SES in modifying the relationship between SUDs.

Socio-economic status may also have an impact, though the level of support a veteran receives may be critical in counteracting this. This system comprises family members, friends, healthcare providers, and community-based services. (Sultan, 2023) emphasizes that social support from network members may reduce the association between low SE and substance misuse in their study conducted on PTSD veterans with comorbid SUDs.

More recently, (Sultan, 2023) conducted additional research reaffirming the critical role of using community-based programs to support economically disadvantaged veterans. Accessibility to healthcare services, mental health treatment, and social support are some of the advantages associated with these programs. This aspect refers to important components that can help tackle SUD risk factors in people with low SES. Subsequently, support systems act as mediators to weaken the association between SES and dependence on substances.

Limitations and Future Directions

Like with any field of research, when the effects of support systems and SES on SUD among vets are explored, the limits and opportunities follow. Most studies examine one or a few dimensions of socio-economic status. In contrast, studies that consider all dimensions, including but not limited to income, education level, occupation, and neighborhood, are needed (Swensen, 2015). This scholar suggests that though numerous aspects show the relationship between SES

and SUD in vets, researchers must still be on their toes to ensure they get the right way of cultivating reliable support resources both within the individuals and communities (Swensen, 2015). Thus, there is an urgent need to look into the complex connection between the SES and SUD among veterans. The problem originates from alarmingly high levels of drug abuse, which characterize veterans who have mental health problems and difficulties in their transition and settlement after military service.

Research Question

Does veteran's socioeconomic status influence the occurrence of substance use disorders (SUD)? Does the level of support they receive play a role in modifying this relationship?

Many studies indicate that veterans are at great risk of suffering alcohol substance abuse or other related substance abuse (Johnston et al., 2016). This point explains why it is important to understand the multitude of elements that influence the phenomenon. (Johnston et al., 2016) assert that veterans have always experienced enormous challenges as they try to adjust to normal life, especially unemployment and poor housing, among others that may lead to increased stress and addiction. This issue shows that a veteran can suffer from SUD. At the same time, the differences in socio-economic status prevent one from accessing quality healthcare and support.

This issue makes it even more necessary to critically question whether support systems act as mitigators or facilitators in veteran SES-SUD connections. According to recent studies by (Swensen, 2015), the influence of socio-economic factors on mental health outcomes among veterans is moderated by social support. Hence, it is important to understand how the levels of support received by veterans interact with their socio-economic status, which in turn affects the occurrence of SUD to inform interventions and support strategies that are targeted for these

groups. Research is needed to understand the connection between socio-economic status, social support and the development of SUD in veterans due to the increased rates of substance use disorders among them. The purpose of this research is to expose the processes behind the state of vulnerabilities that veterans find themselves in so as to come up with policies and measures that can be directed toward bettering the state of affairs of this deserving category of citizens in order to make them better prepared for their new life.

Methodology

In particular populations, researchers have found connections between socio-economic status, support services, and SUD instances (Pandey & Pandey, 2021). Nevertheless, these relationships require in-depth studies as their experiences are different from non-veteran populations. As such, this research was based on quantitative approaches to examine this connection between socio-economic parameters, assistive services, and substance use among this population. The quantitative research approach was instrumental in this study. This research approach was helpful in investigating the correlations between various variables (Pandey & Pandey, 2021). The techniques the researchers deployed helped a great deal to facilitate data collection. After the data collection, the data was then subjected to statistical analyses and inferences that are applicable to a larger population of veterans. This research approach helped to establish the relationship between indicators like the socio-economic situation and access to support programs, to predict SUD rates.

Study Design

This correlational study used NSDUH data as evidenced from 2015 to 2020 to attain retrospective information. Importantly, I created a special multiple regression model. The model

could help a great deal to determine the impact of predictor variables X1 (socio-economic status) and X2 (level of support received) on dependent variable Y (occurrence of substance use disorder).

Instrumentation

This research applied secondary data sources of already recoded data. The researchers obtained the data set, especially the validated datasets of NSDUH. This NSDUH does a great job at measuring characteristics such as socio-economic status, support service usage, and SUD diagnoses. Socio-economic status was determined by combining measures of income, education, and occupation. Involvement evaluation comprises frequency of service usage, marital status, drug therapy availability, and mental health services utilization.

Procedure for Data Collection

The primary source of data relevant to this study was NSDUH datasets. Finally, merging these datasets was part of the data analysis process. In contrast, ensuring data had been valid and relevant from 2015 to 2020 (Patel & Patel, 2019).

Collecting Dataset

The data used here was obtained from publicly available NSDUH studies covering the period of 2015-2020. Variables were recoded and transformed to suit study needs.

Sampling Strategy

NSDUH's existing multi-stage stratified cluster sample design was used in the sampling process. This way, US veterans were well reflected in the sample.

Size of Sample

The study was based on 9,904 data observations that were strong enough for multiple regression analysis.

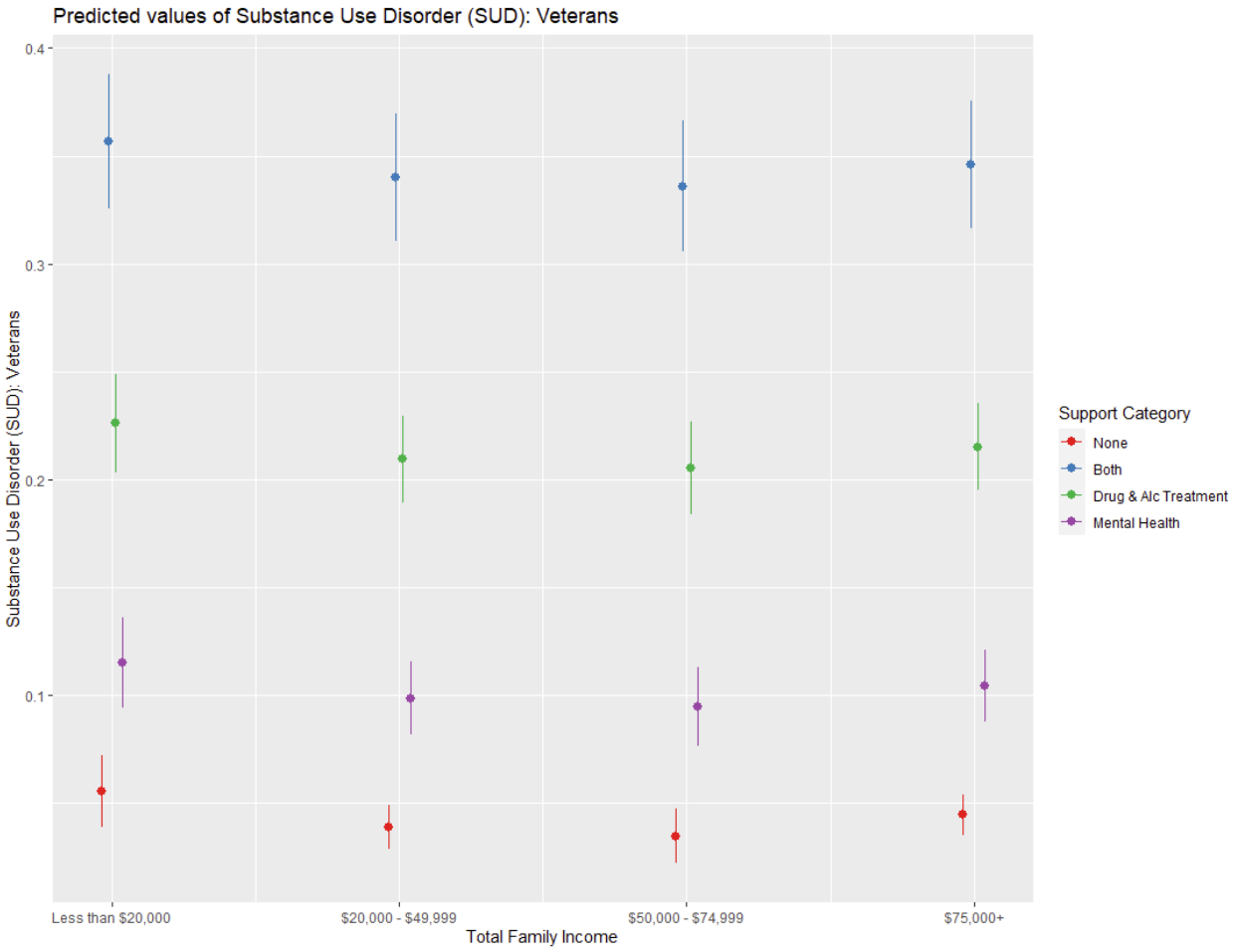
Sampling Technique

Multi-stage stratified sampling was used to select individuals from different parts of the country, USA (Weidema et al., 2013). The approach provides a wide sample representation while averting any sampling biases.

Methods of Data Analysis

Statistical software R Studio was used in multiple regression analysis, controlling for confounding variables such as gender, age, location, health insurance, physical health status, mental health history, type of military service, lifestyle, and time of service. This analysis involved examining multicollinearity as well as moderation effects to ascertain model validity and establish predictive relationships among the variables.

Results and Analysis



Findings

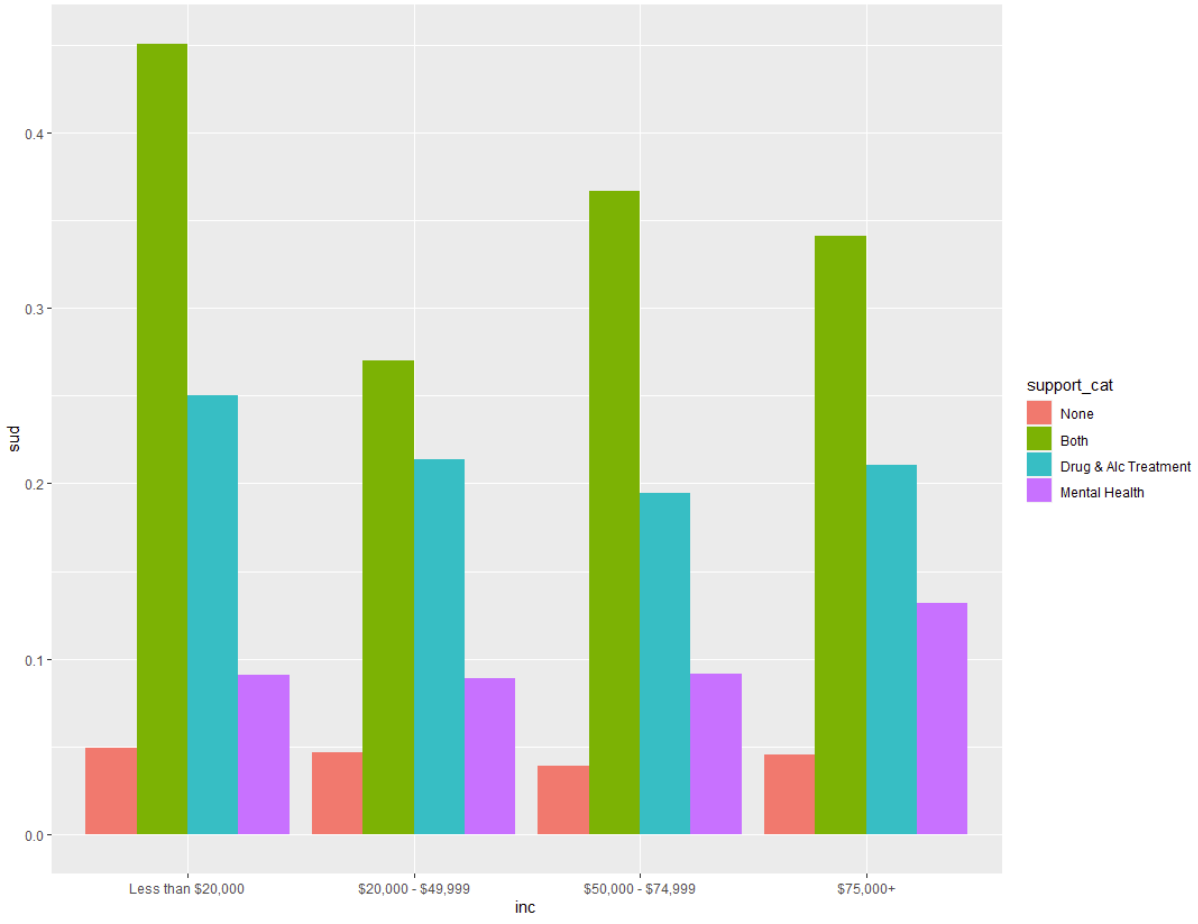
This part explores SUD in veterans. There was a statistically significant negative effect of having a total family income between $20,000 – $49,999 on SUD (Estimate = -0.017, $p < 0.05$). The study also revealed a statistically significant negative relationship between being in the family of income $50,000-$74,999 and substance use disorder (SUD) (Estimate = -0.021, $p <$ .05). There were large positive associations between support categories such as both drug and alcohol treatment and mental health and SUD (Estimate = 0.301 and 0.060, both $p<0.001$).

Analysis

The findings suggested that increased levels of total family income are associated with low occurrence of substance use disorder in veterans. It could be assumed that those with lower incomes are more susceptible to SUD compared to those in higher income brackets due to possible financial pressures or lesser access to preventive and treatment measures. Additionally, veterans receiving assistance from a dual treatment service for substance abuse and alcohol and mental health services were more likely to have SUD, implying the appropriateness of such interventions in treating the disorder. Nevertheless, this can also be due to these support categories being sought by veterans suffering from SUD more.

Findings

Note: These ggplot bar charts look at mean as opposed to the model proportion of people who have SUD. I added the tab_model regression toward the bottom of the analysis.

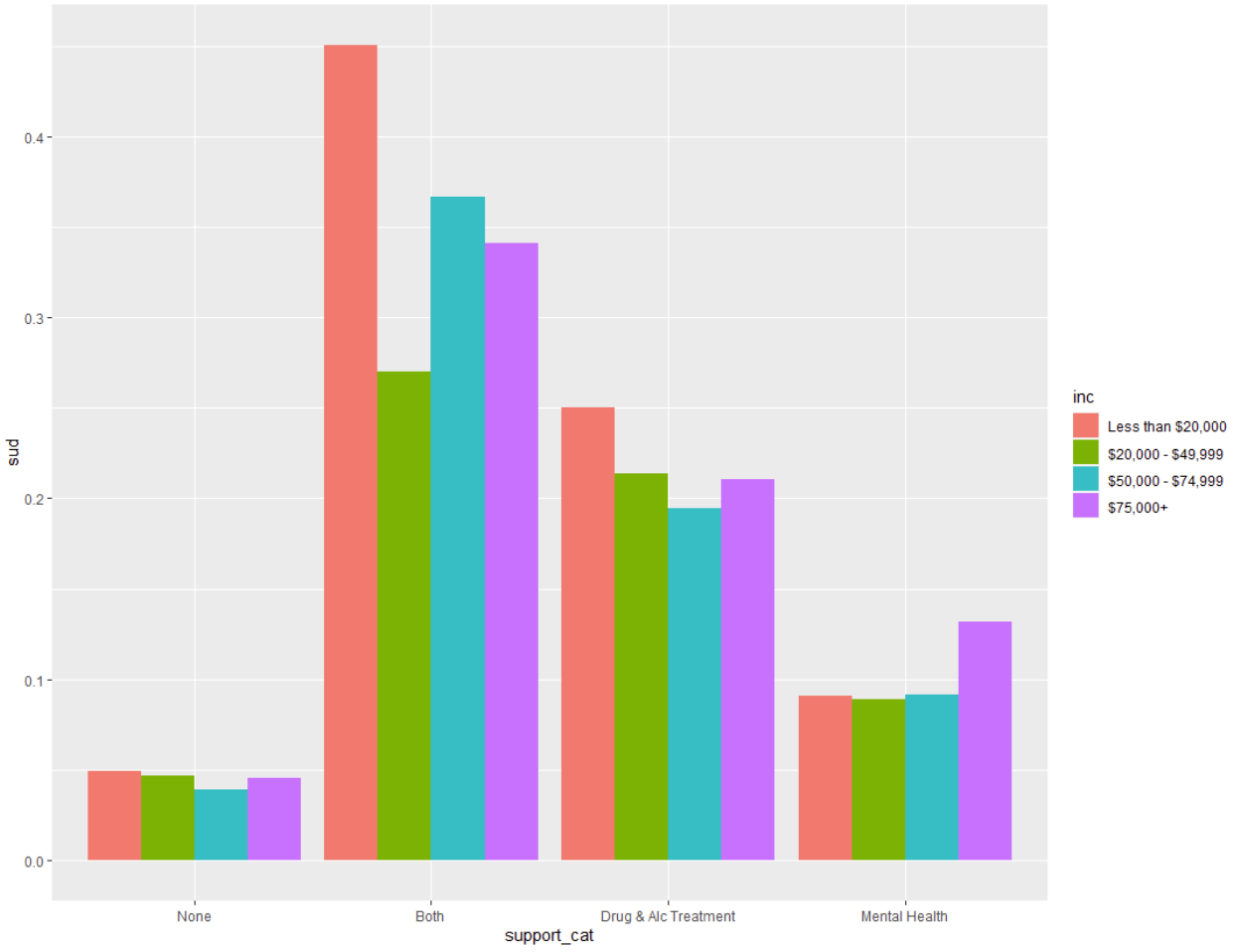


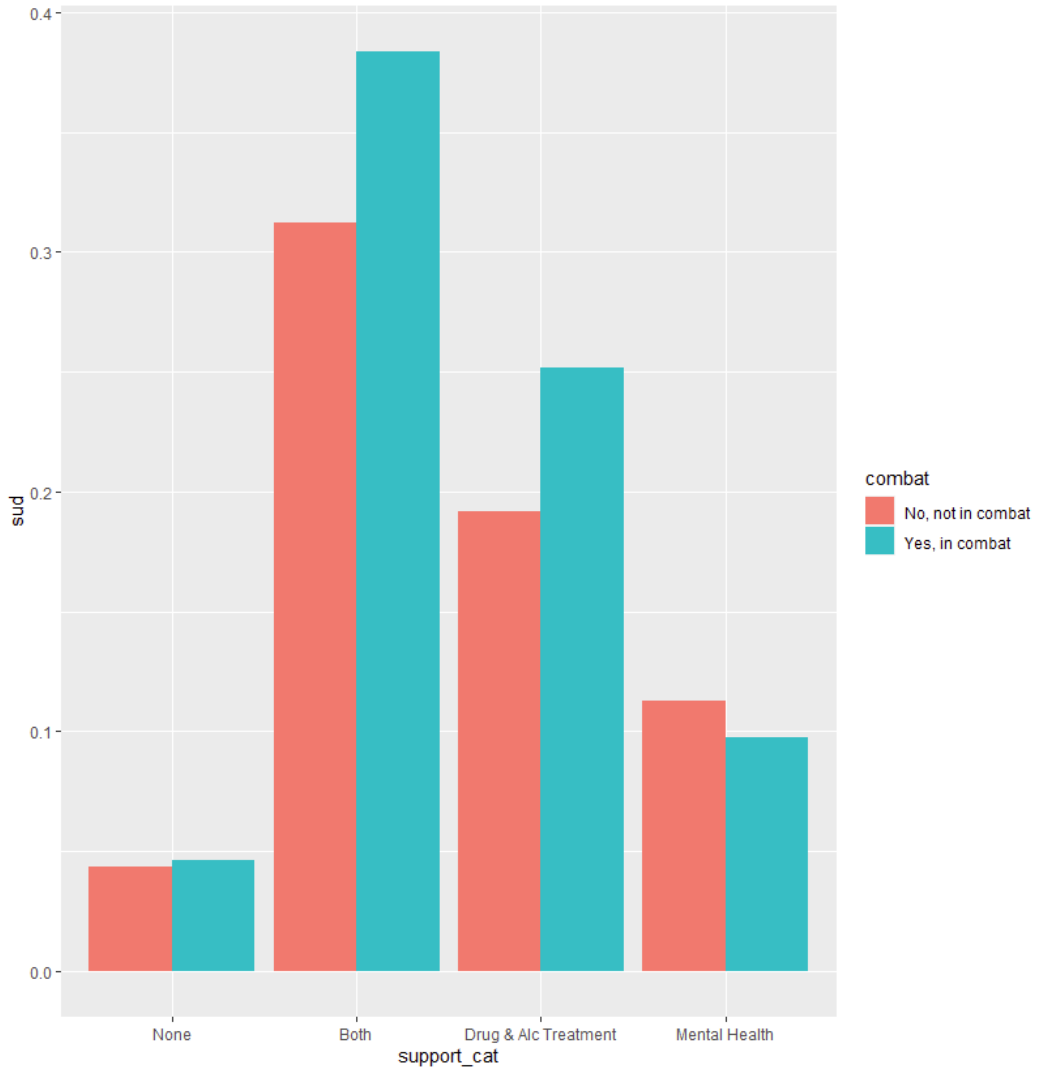
Income has also been a predictor variable that formed part of the analysis looking into the effects of SUD on the veterans. Substance use disorders showed negative correlations with total family income of $20,000 – $49,999, $50,000 – $74,999, and $75,000+ (Estimate=-0.02 In addition, professional assistance was found to be positively associated with SUD (Estimate = 0.129, $p < 0.001$).

Analysis

As far as this section of the study is concerned, it can be confirmed that lower-income veterans will likely suffer from SUD despite receiving formal support provisions at their disposal. The strong positive correlation between professional support and SUD suggests that providing this kind of help to veterans should be of utmost importance. This aspect could point out that availability may be an important factor in increasing professional support for veterans with substance use disorder.

Findings





These findings show that different predictors, such as total family income, support category, and the level of combat experience, affect different aspects of substance use disorder (SUD) in vets. Statistical tests showed that the baseline, control, moderation by support, and moderation by combat were significant at a p-value <0.001. The findings also indicate that a total of 9904 observations were utilized in this analysis. For total family income, different ranges were taken into account: $20K – $49,999, $50K – $74,999+, and over $75,000. Statistically significant results have been found for Mixed support categories of Both Drug and Alcohol

Treatment and Mental Health. Finally, combat experience was also considered as a possible mediator in the influence of other predictors on SUD.

Analysis

The findings above infer that certain factors are more impactful in predicting substance use disorder (SUD) in veterans. The one outstanding factor is total family income. This factor seems to be having a varying impact on SUD based on the range it falls into. Moreover, different support categories might have more considerable effects on veterans' SUD. Importantly, the study indicates that veteran experience is an essential factor when examining its relationship with SUD variables and understanding its role in moderating the other predictor variables' influence. This aspect implies that considering a veteran's experience (war cohort) as a separate factor could lead to more insightful outcomes. This aspect could be helpful in understanding how different factors may contribute to effective SUD measurement among veterans.

Output Regression/Interpretation:

LPM Regression: sud ~ inc + support_cat + combat:

	Substance Use Disorder (SUD): Veterans		
Predictors	*Estimates*	*std. Error*	*Statistic*
(Intercept)	0.055 ***	0.008	6.574
Total Family Income: $20,000 - $49,999	-0.017	0.009	-1.808
Total Family Income: $50,000 - $74,999	-0.021 *	0.010	-2.107
Total Family Income: $75,000+	-0.011	0.009	-1.212
support_cat: Both	0.301 ***	0.015	20.607
support_cat: Drug & Alc Treatment	0.171 ***	0.010	17.365
support_cat: Mental Health	0.060 ***	0.008	7.600
combat: Yes, in combat	0.007	0.005	1.354
Observations	9904		
R^2 / R^2 adjusted	0.069 / 0.068		

** p<0.05 ** p<0.01 *** p<0.001*

LPM regression:

Coefficients (Intercept): Baseline probability of having SUD, when other predictors are at reference levels.

Reference group would be Less than $20,000 for our model.

Reference for support_cat would be None.

Higher income brackets show a non-significant decrease in SUD probability.

Receiving support, whether both types, drug & alc treatment, or mental health support, is significantly associated with an increased likelihood of SUD. Being a combat veteran shows a non-significant slight increase in SUD probability.

The R-squared value is 0.069, indicating that about 6.9% of the variance in SUD is explained by the model. This is relatively low, suggesting other factors outside of the model may be important. Overall, the model explains a small portion of the variability among veterans.

LPM Regression: 4 category:

SUD: Veterans

	Baseline				Controls				Moderation: Support				Moderation: Combat			
Predictors	*Estimates*	*std. Error*	*Statistic*	*p*	*Estimates*	*std. Error*	*Statistic*	*p*	*Estimates*	*std. Error*	*Statistic*	*p*	*Estimates*	*std. Error*	*Statistic*	*p*
(Intercept)	0.112	0.008	13.650	**<0.001**	0.058	0.008	7.059	**<0.001**	0.049	0.010	5.038	**<0.001**	0.105	0.010	10.115	**<0.001**
Total Family Income: $20,000 - $49,999	-0.040	0.009	-4.188	**<0.001**	-0.016	0.009	-1.782	0.075	-0.003	0.011	-0.249	0.803	-0.043	0.012	-3.549	**<0.001**
Total Family Income: $50,000 - $74,999	-0.045	0.010	-4.437	**<0.001**	-0.020	0.010	-2.046	**0.041**	-0.010	0.012	-0.872	0.383	-0.045	0.013	-3.373	**0.001**
Total Family Income: $75,000+	-0.041	0.009	-4.447	**<0.001**	-0.010	0.009	-1.144	0.253	-0.004	0.011	-0.404	0.686	-0.033	0.012	-2.793	**0.005**
support_cat: Both					0.302	0.015	20.655	**<0.001**	0.401	0.032	12.684	**<0.001**				
support_cat: Drug & Alc Treatment					0.171	0.010	17.360	**<0.001**	0.201	0.023	8.712	**<0.001**				
support_cat: Mental Health					0.060	0.008	7.664	**<0.001**	0.042	0.023	1.777	0.076				
inc$20,000 - $49,999:support_catBoth									-0.178	0.041	-4.354	**<0.001**				
inc$50,000 - $74,999:support_catBoth									-0.074	0.046	-1.604	0.109				
inc$75,000+:support_catBoth									-0.105	0.042	-2.494	**0.013**				
inc$20,000 - $49,999:support_catDrug & Alc Treatment									-0.033	0.029	-1.160	0.246				
inc$50,000 - $74,999:support_catDrug & Alc Treatment									-0.045	0.032	-1.414	0.157				
inc$75,000+:support_catDrug & Alc Treatment									-0.035	0.029	-1.198	0.231				
inc$20,000 - $49,999:support_catMental Health									0.001	0.027	0.023	0.982				
inc$50,000 - $74,999:support_catMental Health									0.011	0.029	0.377	0.706				
inc$75,000+:support_catMental Health									0.045	0.027	1.697	0.090				
combat: Yes, in combat													0.017	0.017	1.007	0.314
inc$20,000 - $49,999:combatYes, in combat													0.007	0.019	0.354	0.723
inc$50,000 - $74,999:combatYes, in combat													-0.004	0.021	-0.184	0.854
inc$75,000+:combatYes, in combat													-0.020	0.019	-1.042	0.297
Observations	9904				9904				9904				9904			
R^2 / R^2 adjusted	0.002 / 0.002				0.068 / 0.068				0.071 / 0.070				0.003 / 0.003			

Baseline Model:

The positive significant intercept suggests a baseline prevalence of SUD.

The significant positive intercept in the baseline model suggests that there is a baseline level of SUD prevalence when all other variables are at their reference level.

Income shows a negative association with SUD across all brackets, indicating higher income is related to lower SUD prevalence.

Model with Controls:

After introducing control variables:

The significant negative association between SUD and the $20,000-$49,999 income bracket disappears.

The $50,000-$74,999 income bracket retains a negative association.

The $75,000+ bracket shows no significant link to SUD.

All support categories have a positive association with SUD, suggesting that those receiving any support have higher SUD prevalence. 'None' as a reference category is standard practice, ensuring it represents the baseline group without support services.

Moderation by Support:

Interaction terms mostly show no significant moderation by support categories,

except for the $20,000-$49,999 and $75,000+ brackets when combined with 'Both' support,

where a negative association with SUD is evident.

Moderation by Combat Experience:

Being a combat veteran does not significantly moderate the effect of income on SUD,

as all interaction terms are non-significant.

Overall Model Summary:

The LPM effectively captures the probability of SUD presence. It suggests that while higher income tends to be associated with lower SUD prevalence, receiving support correlates with higher SUD prevalence.

However, moderation effects are largely non-significant, with few exceptions.

The low adjusted R-squared values across models suggest additional factors may be influential in explaining SUD.

Findings

The regression models evaluated the impact that each of the predictor variables had on the drug abuse by veterans. The findings also illustrate that there is a significant difference between the baseline and the control group, as indicated by the noticeably different regression coefficients obtained for all the predictor variables included in this study.

Analysis

These findings confirmed the previously outlined results, according to which the key predictor variables that had the highest effect were the income level and most especially for both the moderate to high income levels and the type of support categories. In this sense, the low p-values obtained for the different main effects indicate that a moderate to high income level and support categories are statistically significant.

Discussion

The findings show how SUD among veterans is associated with several social and economic issues. It appears that higher overall family income levels are associated with reduced rates of SUDs in veterans, signifying that stability in the economy could be instrumental in averting this problem. Comparison of different income levels indicates that veterans with lower incomes might be more vulnerable to SUD, for instance, due to economic pressures or the lack of access to resources necessary for treatment or prevention. However, after adjusting for professional assistance received, it was noted that they were more likely to develop SUD despite receiving support and care as compared to their peers from wealthier backgrounds. This observation underlines that socio-economic dimensions must be factored in when designing interventions or coming up with treatment strategies for at-risk veterans with SUD.

Importantly, the study suggests that professional support (both items of support_cat) is correlated positively with SUD. This issue proves the importance of professional support on SUD management and prevention among veterans. Additional research on the specific professional support and their ability to optimize prevention, early detection, and intervention strategies would be valuable. Also, we considered predictors such as total-family income,

support category, and combat experience and its impact on veterans' SUD. This aspect gave varying statistical significance, suggesting that some factors may matter more in predicting SUD than others. However, it should be noted that total family income is affected differently by SUD, depending on the ranges. This point highlights the need for comprehension in specific situations experienced in various brackets which should be considered in addressing veteran mental health needs. Thus, it is important to design specific interventions for the enhancement of SUD among veterans that take into consideration these individuals' backgrounds and ability to receive assistance.

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