DEPRESSIVE SYMPTOMS AND ALCOHOL USE AMONG MALE AND FEMALE UNIVERSITY STUDENTS: IS INNER MEANING FULFILMENT PROTECTIVE?

SAMSON FEMI AGBEROTIMI¹, RACHEL B. ASAGBA²

¹*Lifestyle Diseases Research Entity, North-West University, Mafikeng Campus, South Africa*

²*Department of Psychology, University of Ibadan, Ibadan, Nigeria*

© 2020 Samson Femi Agberotimi, Rachel B. Asagba

This is an open access article distributed under the Creative Commons Attribution-NonCommercial-NoDerivs license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>)

DOI: 10.1515/eras-2020-0007

Abstract

Alcohol use among students in tertiary institutions has long been established as a major public health concern. Also, previous research has shown that individuals with depression are particularly susceptible to alcohol use. There is, however, a paucity of empirical studies focusing on whether this relation is moderated by gender or buffered by a sense of inner meaning fulfilment. We assessed the moderating roles of gender and inner meaning fulfilment in the relationship between depression and alcohol use among university students in Nigeria. A correlational survey design was utilized. Data were collected from 1,173 students (57% male) aged between 16 and 36 years selected across six Nigerian universities. Data were subjected to SPSS v.23 for statistical analysis. Our findings show that depression, gender, inner meaning fulfilment significantly correlated with alcohol use. The effect of depression on alcohol was positive and significant ($b=.439$, $se=.049$, $p=.000$). Inner meaning fulfilment significantly moderated the relationship between depression and alcohol use ($b=-.163$, $se=.034$, $p=.000$). Depression was established as a significant risk factor for alcohol use, regardless of gender, and inner meaning fulfilment may buffer this association. Implications and recommendations are discussed.

Keywords

alcohol use, depression, gender, inner meaning fulfilment, university students

Introduction

Globally, alcohol remains the most commonly used substance among university students (Substance Abuse and Mental Health Services Administration, 2012; Verankar & Vaz, 2018), with reports suggesting that as many as 90% of this population have a history of alcohol use, of whom between 25% and 50% may be considered “heavy drinkers (Johnston et al., 2011; Karam et al., 2007). Studies across different parts of Africa show that the problem of alcohol use among the student population is not limited to the western world. For instance, heavy drinking and hazardous use of alcohol were reported among university students in South Africa (Nkoana et al., 2016), Uganda (Choudhry et al., 2014), Ghana (Hormenu et al., 2018), and Kenya (Boitt et al., 2016). Findings from these studies also highlighted several factors including alcohol availability, sexual purpose, and psychological distress to be associated with drinking behavior among the students.

In Nigeria, alcohol use is considered a major public health concern. According to the World Health Organization (2018), Nigeria ranks second on the list of countries with heavy episodic drinking in Africa. Observing the phenomenon among university students, Adewuya,

and colleagues in 2007 reported that alcohol abuse, dependence, and alcohol use disorder are some of the common problems in Nigerian universities. Supporting this claim, Lasebikan et al. (2018) found that 39.5% of a sample of 1,119 university students reported drinking problem.

There is a high prevalence of alcohol-related consequences among university students ranging from academic problems to poor health outcomes, injuries, and death (Govender et al., 2015; Hingson & White, 2014; Olashore et al., 2018). University students drinking is associated with harmful drinking behaviors and subsequent negative alcohol-related consequences that endanger the well-being of both the individual and society (White & Hingson, 2014).

Generally, mood disorders constitute a significant risk factor for substance abuse. Affecting about 350 million people globally, depression is regarded as the most commonly diagnosed mental illness (WHO, 2016). Reports show that mental health problems including depression among university students have significantly risen in recent years, and the prevalence seems higher compared to that of the general population (Gallagher, 2014; Ibrahim et al., 2013). There are increasing findings linking alcohol use among university students to mental health challenges especially depression. In this vein, a group of researchers has reported that problem drinking is more predominant among university students who report poor mental health and depression (Dennhardt & Murphy, 2011; Gonzalez et al., 2009; Kenney et al., 2018; Peltzer and Pengpid 2015).

There has been an increase in research investigating the contribution of meaning in life to psychological symptoms such as depression, anxiety, and substance abuse (Mascaro & Rosen, 2005). Meaning in life is defined as “the extent to which people comprehend, make sense of, or see significance in their lives, accompanied by the degree to which they perceive themselves to have a purpose, mission, or overarching aim in life” (Steger, 2009, 682). Meaning in life has overtime been strongly associated with psychological well-being (Brassai et al., 2011; Krause & Hayward, 2013; Steger et al., 2008). A significant negative correlation between meaning in life and alcohol use among college students has repeatedly been reported in line with Frankl’s postulation that the students turn to alcohol use as a coping mechanism for dealing with their lack of meaning in life (Csabonyi & Phillips, 2020; Schnetzer et al., 2013).

It is evident that in the presence of other risk variables, such as depression, the absence of meaning in life increases the likelihood of engaging in substance abuse. Invariably, the presence of meaning in life/inner meaning fulfilment may decrease the likelihood of the use of substances including alcohol. In this regard, the protective impact of meaning in life against mental health challenges has also been examined by previous scholars. For example, Brassai et al. (2011) reported that having a sense of meaning in life serves as a strong protector against engaging in risky behaviors like substance abuse among young people. Also, higher scores on the measure of meaning in life significantly correlate with lower alcohol use (Hart & Carey, 2014; Schnetzer et al., 2013), and fewer accompanied negative consequences (Palfai et al., 2011; Palfai & Weafer, 2006) among university students. Meaning in life has also been associated with depression (Klefaras & Psarra, 2012), and found to mediate the relationship between depression and substance use (Harlow et al., 1986).

Until recent times, many studies on alcohol use among university students have reported a male preponderance (Ajayi et al., 2019; Lategan et al., 2017). Recent studies, however, suggest that alcohol use is increasing among the female population (Bratberg et al., 2016; Ndom et al., 2013; White et al., 2015). Also, some scholars have raised concerns about the increasing rate of alcohol use among female post-secondary students, noting a high risk for addiction and poorer outcomes. In this regard, Raveendranathan et al. (2020) observed that although more males (39%) than females (12.6%) reported lifetime alcohol use, more females than males had higher psychological distress including suicidal thoughts.

Evidence suggests that studies addressing gender differences in the relationship between depressive symptoms and alcohol use among students are few, the results have also been inconsistent. While some studies have reported a relationship between depressive symptoms and alcohol use among females, but not males (e.g. Edwards et al., 2014; Miettunen et al., 2014), others found the association among males, but not females (e.g. Tapert et al., 2003). Also, no significant gender difference in the association between depressive symptoms and alcohol use is reported by another set of studies (e.g. McCarty et al., 2012).

Nevertheless, increasing findings are showing the moderating effect of gender on the relationship between depressive symptoms and alcohol use among the student population. For instance, Pedrelli and colleagues in 2011 reported more heavy episodic drinking among students with major depressive disorder (MDD) than those without MDD, the finding was, however, more prominent among the female students. In another study, the gender difference in the relationship between depression and alcohol use was established, with the result showing this relationship among female participants only (Danzo et al., 2017). In a recent study investigating gender difference in the mental health of college students in China, Gao et al. (2020) observed that although males, more than females reported significantly higher depressive symptoms, the mental health outcome observed among the female students significantly influence their drinking behavior. In a similar vein, Harrell and Karim (2008) concluded from their investigation of gender difference in the relationship between alcohol use, substance-use coping, drinking to “feel high,” and depressive symptoms among college students that alcohol-related problems among female students were more associated with depressive symptoms compared to their male counterparts.

Previous research has also documented gender differences in the relationship between depression, meaning in life, and alcohol use. For instance, according to Schnitzer et al. (2013), meaning in life significantly mediate the relationship between depression and alcohol use only in the male gender. From another finding as reported by Harlow et al. (1986), it was indicated that in the absence of meaning women more than men seem to use drugs more often as a coping mechanism. Similarly, Schlesinger et al. (1990) affirmed that when comparing males and females with alcohol use disorder, females scored significantly lower than males on the measure of meaning in life.

From the aforementioned, it is evident that alcohol use among university students is associated with an array of problems like academic failure, sexual and other risky behavior, negative health outcomes, and criminal behavior (Govender et al., 2015; Hingson & White, 2014; Olashore et al., 2018; WHO 2019). Even so, the link of alcohol use with depression worsens the alcohol-related consequences among the student population. Addressing the problem of alcohol use, therefore, demands a holistic understanding of factors influencing it. Also, to develop efficacious interventions, it is important to identify protective factors that may buffer the relationship between depressive symptoms and alcohol use. One such protective factor that may be helpful is inner meaning fulfilment. Furthermore, there is increasing evidence for the moderating effect of gender in the relationship between depression and alcohol use among university students. Nevertheless, there is a paucity of empirical research addressing these phenomena among Nigerian university students. The aim of this study is, therefore, to examine the moderating effect of gender and inner meaning fulfilment in the relationship between depression and alcohol use among university students in Nigeria. In this view, the following objectives were raised:

1. To investigate the relationships between gender, depression, meaning in life, and alcohol use.
2. To examine the moderating effect of gender and inner meaning fulfilment in the relationship between depression and alcohol use.

Materials and Methods

Design

A correlational survey design was employed in this study to examine the moderating effect of gender and inner meaning fulfilment on the relationship between depression and alcohol use among university students in Nigeria.

Participants

One thousand, one hundred and seventy-three (1173) students drawn from six Nigerian universities participated in the study. The participants whose age range between 16 and 36 ($X = 21.68 \pm 5.42$) comprised of 673 (57.4%) male and 500 (42.6%) female selected using a purposive sampling method.

Instrument

A structured questionnaire was designed for data collection. The questionnaire is made up of four sections. The first section contains demographic information which includes Sex, Age, Ethnic group, Religion, Income level. The second section entails The Alcohol Use Disorders Identification Test (AUDIT); the third section entails Zung Self-Rating Depression Scale, and the fourth section entails Inner Meaning Fulfilment Test (Logotest).

AUDIT (Self Report): The Alcohol Use Disorders Identification Test (AUDIT) developed by the World Health Organization was contained in section three of the questionnaire. Audit was developed to screen for excessive drinking and in particular to help practitioners identifying people who would benefit from reducing or quitting drinking. The self-report test is comprised of ten questions on a mostly 5 response range except for two items that have 3 response options. A total score of 40 is obtainable on the test. Cronbach's alpha .95 was established in this study.

Zung Self-Rating Depression Scale: The Zung self-rating depression scale is responded to in a four respond to a range of "a little of the time" (1), "some of the time" (2), "good part of the time" (3), and "most of the time" (4). A reliability coefficient of $\alpha = .74$ was established in the present study.

Inner Meaning Fulfilment Test (Logotest): The Logotest (Lukas, 1986) consists of three parts. Part I contains nine statements that can be responded to in a "yes" or "no". Part II has seven statements with three response formats: "often", "once in a while", and "never". Part III is divided into two sections which require a subjective response. Asagba (2002) reported Cronbach's alpha of .59, .47, and .56 for part I, part II, and part III respectively. Similarly, Asagba, Alarape, and Chovwen (2009) reported alpha of .40, .50, and .62 for part I, part II, and part III respectively. For the present study, reliability coefficients of α .52, .67, and .56 were established for part I, part II, and part III respectively.

Procedures

A letter of introduction was written by the Academic Staff Union of Universities (ASSU) chairman of the University of Ibadan, to each selected institution ASUU chairman for permission to conduct the research in their institutions. Participants were approached at different locations including lecture theatres, lounge, and halls of residence. The purpose of the study was well explained to prospective respondents including the fact that the study does not pose any risk or harm to them. The principal researcher also took the time to answer every question raised by the participants. A detailed informed consent documentation signed by every

participant was obtained. Questionnaires were later administered to respondents who willingly consented to participate in the study by signing the informed consent documentation. No individual was forced to participate in the study. Participants were also assured of the confidentiality of their responses.

One thousand eight hundred (1,800: - 300 in each of the six universities) questionnaires were administered out of which 1,232 copies were returned indicating a 68.4% returned rate. The 1232 returned questionnaire was thereafter subjected to scrutiny, and a total number of 1173 questionnaires were found to be usable and subjected to statistical analysis using the SPSS version 22.

Results

Objective 1. To investigate the relationships between gender, inner meaning fulfilment, depression, and alcohol use among university students.

Correlations and Descriptive statistics

The results presented in Table 1 show the descriptive statistics for the variables. Correlation analysis that was conducted to determine the relationships between the research variables were also obtained in Table 1.

Table 1. Descriptive Statistics and Correlations among Variables

	Mean	SD	1	2	3	4
1 Gender			-			
2 Inner meaning fulfilment	16.89	1.36	.01	-		
3 Depression	38.13	7.92	-.02	-.15	-	
4 Alcohol use	3.83	8.81	.06*	-.23**	.36**	-

** $p < 0.01$

* $p < 0.05$

Note: Male = 1, Female = 0.

Results of the correlation analysis (see Table 1) revealed the relationships between gender, inner meaning fulfilment, depression, and alcohol use among university students. The result showed that gender ($r = .06$, $p < .05$) and depression ($r = .36$, $p < .01$) significantly positively correlated with alcohol use, while inner meaning fulfilment ($r = -.23$, $p < .01$) significantly negatively correlated with alcohol use among the population.

Objective 2. To examine the moderating effect of gender and inner meaning fulfilment on the relationship between depression and alcohol use of university students.

Moderation analysis

Hayes SPSS macro PROCESS 3.4 was used to test the effects of the moderating variables.

Table 2. Model showing the moderating effect of gender and inner meaning fulfilment on the relationship between depression and alcohol use

	b	se	t	p	LLCI	ULCI
Constant	5.370	.394	13.631	.000	4.596	6.144
Depression	.439	.049	9.004	.000	.343	.534
Gender	1.443	.710	2.032	.043	.049	2.837
Inner meaning fulfilment	-1.366	.293	-4.654	.000	-1.942	-.789
Depression*Gender	.117	.091	1.295	.196	-.061	.296
Depression*Inner meaning fulfilment	-.163	.034	-4.802	.000	-.230	-.096

The result presented in Table 2 showed that the effect of depression on alcohol use was positive and significant ($b=.439$, $se=.049$, $p=.000$). The result showed that there was a statistically significant interaction between depression and inner meaning in life ($b=-.163$, $se=.034$, $p=.000$), while the interaction term between depression and gender was not statistically significant ($b=.117$, $se=.091$, $p=.196$) in the model. The result indicates that inner meaning fulfilment was a significant moderator of the effect of depression on alcohol use.

Table 3. Tests of highest order unconditional interactions

	ΔR^2	F	df1	df2	p
Depression*Gender	.002	1.677	1.000	735.000	.196
Depression*Inner meaning fulfilment	.032	23.063	1.000	569.000	.000

The result presented in Table 3 indicated that there was an estimated 32% increase in the variance of alcohol use accounted for by the interaction between depression and the inner meaning of the participants.

Table 4. Test of simple slopes

Inner meaning fulfilment	b	se	t	p	LLCI	ULCI
-1.373	.662	.067	9.875	.000	.531	.794
0.000	.439	.049	9.004	.000	.343	.534
1.094	.260	.062	4.229	.006	.139	.381

The result obtained in Table 4 showed the probing of the interaction with simple slopes test of the relationship between depression at -1sd, mean, and +1sd on inner meaning fulfilment. It was found that the relationship between depression and alcohol use was negative and statistically significant at -1sd ($b=.662$, $se=.067$, $p=.000$), while positive and statistically significant at mean ($b=.439$, $se=.049$, $p=.000$), and +1sd ($b=.260$, $se=.062$, $p=.006$) on inner meaning fulfilment.

Figure 1. Interaction between depression and inner meaning fulfilment on alcohol use

Examination of the interaction plot (Figure 1) showed the protecting effect of inner meaning fulfilment in the relationship between depression and alcohol use. At low depression, the report of alcohol use by the students was relatively similar for low, average, or high levels of inner meaning fulfilment. At a high level of inner meaning fulfilment, however, least alcohol use was reported at all levels of depression, while the highest level of alcohol use was reported at the low level of inner meaning fulfilment. This implies that a sense of inner meaning fulfilment is a protective factor against alcohol abuse among university students with depression.

Discussion

The moderating effect of gender and inner meaning fulfilment in the relationship between depression and alcohol use among university students in Nigeria was examined in this study. First, findings from the correlation analysis conducted revealed that alcohol use by the participants was significantly positively associated with male gender and depression, and significantly negatively associated with inner meaning fulfilment. This shows that the higher the severity of symptoms of depression reported by the students, the higher the alcohol use reported. This result is as expected in line with numerous previous studies that have established a direct relationship between depression and alcohol use. For instance, Dennhardt et al. (2011) observed that problem drinking is more prominent among university students who report poor mental health and depression.

The observed significant negative association between inner meaning fulfilment and alcohol use implies that more alcohol use was reported by students who express low inner meaning fulfilment. This finding is supported by the assertion of previous researchers linking poor meaning in life with alcohol use (e.g. Schnetzer et al., 2013; Steger et al., 2008). Similarly, our finding is in line with Frankl's proposition that alcohol and drug use is a response to the feeling of despair and distress following a sense of meaninglessness. Also, it has been previously argued that for people who do not have a sense of inner meaning fulfilment experiences a void in their lives which is distressing and therefore leads to addiction, aggression, and depression (Csabonyi & Phillips, 2020).

Our finding also implies that males than females, students with higher reports of symptoms of depression, and those who indicated low inner meaning fulfilment reported more

alcohol use. Although the magnitude of the association between gender and alcohol use found in this study is low, in line with our finding, associating more alcohol use with the male gender has long been established in the literature (e.g. Ajayi et al., 2019; Lategan et al., 2017; Raveendranathan et al., 2020). The weak significant relationship established between gender and alcohol use in our study could be accounted for by the increasing prevalence of alcohol use among the female gender as being shown by emerging evidence in recent time (Bratberg et al., 2016), thus reducing the gender difference in alcohol use. Studies reporting a higher prevalence of alcohol use among females than their male counterparts are becoming popular (e.g. Ndom, et al., 2013; Varenkar & Vaz, 2018).

Our findings from the second objective of the study revealed that depression is a significant risk factor for alcohol use among university students. Although this finding is popular in the literature (e.g. Kenney et al., 2018; Peltzer et al., 2015), we proceeded to test the moderating effect of gender and inner meaning fulfilment in the relationship between depression and alcohol use. From the test of moderating effect, it was found that gender is not a significant moderator in this study, which implies that the effect of depression on alcohol use among the participants was similar among both males and females. The literature confirms mixed findings regarding the investigation of the moderating effect of gender in the relationship between depression and alcohol use (Danzo et al., 2017; Gao et al., 2020). While in line with our findings, McCarty et al. (2012) reported no significant interaction term between depression and gender concerning alcohol use. In contrary to our findings, however, Gao et al. (2020) in their study among Chinese college students reported that the mental health outcome observed among the female students significantly influences their drinking behavior. Furthermore, Harrell and Karim (2008) had earlier affirmed that alcohol-related problems among female students were more associated with depressive symptoms compared to their male counterparts. Finally, our finding indicates that inner meaning in life is a significant moderator of the effect of depression on alcohol use among the participants. It was found that the highest level of alcohol use was reported by students who reported a low level of inner meaning fulfilment. Whereas, a lower level of alcohol use was reported by students with high inner meaning fulfilment even when they manifest high depression. This implies that a sense of inner meaning fulfilment is a protective factor against alcohol abuse among university students with depression. Our finding is supported by the work of Schnetzer et al. (2013) who also reported that meaning in life significantly mediates the relationship between depression and alcohol use. Also, Harlow et al. (1986), indicated that in the absence of meaning women more than men seem to use drugs more often as a coping mechanism.

Limitation of the Study

First, although a relatively large sample was involved in this study, the non-probabilistic sampling method utilized limit the study in the extent to which the findings can be generalized to all the university student population in Nigeria. Second, there is a possibility of response bias that is common in the self-report survey as was conducted in this study. Also, apart from the variables investigated in this study, there are other possible variables such as socio-economic factors that may account for the observed relationship between depression and alcohol use in this study, this co-founding was not controlled for in this study. Aside from the identified limitations, however, this study has some significant strengths such as being the first of its kind (to the best knowledge of the researchers) investigating the role of gender and meaning in life in the relationship between depression and alcohol among university students in Nigeria. Also, this study recruits participants from universities across the six geopolitical zones of the country, which makes the sample fairly representative compared to studies limited to a particular location. Finally, a rigorous statistical analysis method was conducted in analyzing the data.

Recommendations

Given the findings of this study, the following are recommended:

First, in working towards promoting the mental well-being of Nigerian university students, the university authorities should be guided by the findings of this study in planning and implementing appropriate preventive and therapeutic interventions for the student population. In this regard, identifying students with mental health distress including depression and poor sense of meaning in life is crucial.

Similar to the above point, school administrators should strengthen their counseling and healthcare facilities by devising a student-friendly approach which will enable psychologically distressed students present for assessment and appropriate intervention. Competent mental health professionals should therefore be engaged.

Finally, the findings of this study have implications for future studies focusing on developing theoretical and empirical frameworks in the understanding and intervening of alcohol use problems among university students.

Conclusion

Findings from this study showed that alcohol use was significantly associated with depression, gender, with male students reporting higher scores on the measure of alcohol use. The relationship between alcohol use and depression and inner meaning fulfilment was also significant among the participants. Further, this study established that depression is a significant risk factor for alcohol use, regardless of gender among Nigerian university students. Also, inner meaning fulfilment may buffer the relationship between depression and alcohol use.

Declaration of Interest Statement

Authors have no conflict of interest to declare.

REFERENCES

- Adewuya, A., Ola, B., Aloba, O., Mapayi, B., Ibigbami, O., & Adewumi, T. (2007). Alcohol use disorders among Nigerian university students: Prevalence and sociodemographic correlates. *Nigerian Journal of Psychiatry*, 5(1), 5-9. <https://doi.org/10.4314/njpsyc.v5i1.39893>
- Ajayi, A. I., Owolabi, E. O., & Olajide, O. O. (2019). Alcohol use among Nigerian university students: prevalence, correlates and frequency of use. *BMC Public Health*, 19, 752. <https://doi.org/10.1186/s12889-019-7104-7>
- Asagba, R. B., Alarape, A. I., Chovwen, C. O. (2009). Cross-cultural validation of selected logotherapy tests among undergraduate students of university of Ibadan. *International Forum for Logotherapy*, 32, 78-83
- Asagba, R. B. (2002). Cultural aspects of Logotest: *An analysis of inner meaning fulfilment among the students of university of Ibadan*. Unpublished doctoral thesis, University of Ibadan, Ibadan, Oyo State, Africa.
- Boitt, R. K., Boitt, M. L., Othieno, C., & Obondo, A. (2016). Socio-demographic factors associated with alcohol abuse among Egerton university students in Njoro-Kenya. *Journal of Education and Practice*, 7, 189-197. <https://eric.ed.gov/?id=EJ1122543>
- Brassai, L., Piko, B. F., & Steger, M. F. (2011). Meaning in life: is it a protective factor for adolescents' psychological health? *International Journal of Behavioral Medicine*, 18(1), 44-51. <https://doi.org/10.1007/s12529-010-9089-6>
- Bratberg, G. H., Wilsnack, S. C., Wilsnack, R., Haugland, S. H., Krokstad, S., Sund, E. R., & Bjørngaard, J. H. (2016). Gender differences and gender convergence in alcohol use over the past three decades (1984-2008), the HUNT study, Norway. *BMC Public Health*, 16(1), 723. <https://doi.org/10.1186/s12889-016-3384-3>
- Choudhry, V., Agardh, A., Stafström, M., & Östergren, P. (2014). Patterns of alcohol consumption and risky sexual behavior: A cross-sectional study among Ugandan university students. *BMC Public Health*, 14(1), 128. <https://doi.org/10.1186/1471-2458-14-128>
- Csabonyi, M., & Phillips, L. J. (2020). Meaning in life and substance use. *Journal of Humanistic Psychology*,

- 60(1), 3-19.
- Danzo, S., Connell, A. M., & Stormshak, E. A. (2017). Associations between alcohol-use and depression symptoms in adolescence: Examining gender differences and pathways over time. *Journal of adolescence*, 56, 64-74. <https://doi.org/10.1016/j.adolescence.2017.01.007>
- Dennhardt, A. A., & Murphy, J. G. (2011). Associations between depression, distress tolerance, delay discounting, and alcohol-related problems in European American and African American college students. *Psychology of Addictive Behaviors*, 25(4), 595–604. <https://doi.org/10.1037/a0025807>
- Edwards, A. C., Joinson, C., Dick, D. M., Kendler, K. S., Macleod, J., Munafo, M., Hickma, M., Lewis, G., & Heron, J. (2014). The association between depressive symptoms from early to late adolescence and later use and harmful use of alcohol. *European Child & Adolescent Psychiatry*, 23(12), 1219-1230. <https://doi.org/10.1007/s00787-014-0600-5>
- Frankl, V. E. (1985). *Man's search for meaning*. Beacon Press.
- Gallagher, R. (2014). *National Survey of Counseling Center Directors 2014*. http://0201.nccdn.net/1_2/000/000/088/0b2/NCCCS2014_v2.pdf.
- Gao, W., Ping, S., & Liu, X. (2020). Gender differences in depression, anxiety, and stress among college students: a longitudinal study from China. *Journal of affective disorders*, 263, 292-300. <https://doi.org/10.1016/j.jad.2019.11.121>
- Gonzalez, V. M., Bradizza, C. M., & Collins, R. L. (2009). Drinking to cope as a statistical mediator in the relationship between suicidal ideation and alcohol outcomes among underage college drinkers. *Psychology of Addictive Behaviors*, 23(3), 443-451. <https://doi.org/10.1037/a0015543>
- Govender, I., Kathryn Nel, K., & Mogotsi, M. M. (2015). Experiences and opinions of first-year students at a previously disadvantaged medical university in South Africa about alcohol consumption. *South African Journal of Family Practitioners*, 57(5), 313-317. <https://doi.org/10.1080/20786190.2015.1071539>
- Harlow, L. L., Newcomb, M. D., & Bentler, P. M. (1986). Depression, self-derogation, substance use, and suicide ideation: Lack of purpose in life as a mediational factor. *Journal of Clinical Psychology*, 42(1), 5–21. [https://doi.org/10.1002/1097-4679\(198601\)42:1<5:aid-jclp2270420102>3.0.co;2-9](https://doi.org/10.1002/1097-4679(198601)42:1<5:aid-jclp2270420102>3.0.co;2-9)
- Harrell, Z. A., & Karim, N. M. (2008). Is gender relevant only for problem alcohol behaviors? An examination of correlates of alcohol use among college students. *Addictive behaviors*, 33(2), 359-365. <https://doi.org/10.1016/j.addbeh.2007.09.014>
- Hart, K., & Carey, T. (2014). *Ebb and flow in the sense of meaningful purpose: A lifespan perspective on alcohol and other drug involvement*. In A. Batthyany & P. Russo-Netzer (Eds.), *Meaning in positive and existential psychology* (pp. 347–413). Springer.
- Hingson, R., & White, A. (2014). New research findings since the 2007 surgeon general's call to action to prevent and reduce underage drinking: A review. *Journal of Studies on Alcohol and Drugs*, 75(1), 158–169.
- Hormenu, T., Hagan, J. E. J., & Schack, T. (2018). Predictors of alcohol consumption among in-school adolescents in the central region of Ghana: A baseline information for developing cognitive-behavioral interventions. *PloS One*, 13(11), e0207093. <https://doi.org/10.1371/journal.pone.0207093>
- Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of Psychiatric Research*, 47(3), 391–400. doi:10.1016/j.jpsychires.2012.11.015.
- Johnston, L. D., O'Malley, P. M., Bachman, J. G., et al. (2011). *Monitoring the future national survey results on drug use, 1975–2011: volume II, college students and adults ages 19–50*. Ann Arbor, MI: Institute for Social Research, The University of Michigan, 2011.
- Karam, E., Kypri, K., & Salamoun, M. (2007). Alcohol use among college students: an international perspective. *Current Opinion in Psychiatry*, 20(3), 213–221.
- Kenney, S. R., Anderson, B.J., & Stein, M. D. (2018). Drinking to cope mediates the relationship between depression and alcohol risk: Different pathways for college and non-college young adults. *Addictive Behaviors*, 80, 116–123.
- Kleftaras, G. F., & Psarra, E. (2012). Meaning in life, well-being and depressive symptomatology: Comparative study. *Psychology*, 3(4), 337–345. <https://doi.org/10.4236/psych.2012.34048>
- Krause, N., & Hayward, R. D. (2013). Religious involvement and feelings of connectedness with others among older Americans. *Archive for the Psychology of Religion*, 35(2), 259–282. <https://doi.org/10.1163/15736121-12341266>
- Lasebikan, V. O., Ayinde, O., Odunleye, M., Adeyefa, B., Adepoju, S., & Fakunle, S. (2018). Prevalence of alcohol consumption and alcohol use disorders among outdoor drinkers in public open places in Nigeria. *BMC public health*, 18(1), 400. <https://doi.org/10.1186/s12889-018-5344-6>
- Lategan, B. W., Du Preez, R., Prentz, C. D. (2017). Socio-demographic insights into South African student drinking behaviour. *South African Journal of Higher Education*, 31(5), 90- 115. <http://dx.doi.org/10.28535/31-5-1512>

- Mascaro, N., & Rosen, D. H. (2005). Existential meaning's role in the enhancement of hope and prevention of depressive symptoms. *Journal of Personality*, 73(4), 985–1014. <https://doi.org/10.1111/j.1467-6494.2005.00336.x>
- McCarty, C. A., Wymbs, B. T., King, K. M., Mason, W. A., Stoep, A. M., McCauley, E., & Baer, J. (2012). Developmental consistency in associations between depressive symptoms and alcohol use in early adolescence. *Journal of Studies on Alcohol and Drugs*, 73(3), 444-453. <https://doi.org/10.15288/jsad.2012.73.444>
- Miettunen, J., Murray, G. K., Jones, P. B., Mfaki, P., Ebeling, H., Taanila, A., Joukamaa, M., Savolainen, J., Tormanen, S., Jarvelin, M., Veijola, J., & Moilanen, I. (2014). Longitudinal associations between childhood and adulthood externalizing and internalizing psychopathology and adolescent substance use. *Psychological Medicine*, 44(8), 1727-1738. <https://doi.org/10.1017/s0033291713002328>
- Ndom, R. J. E., Igboke, D. O. & Ekeruo, N. (2013). Students' opinion on substance use, violent behavior and possible intervention strategies in a Nigerian public university. *European Scientific Journal* September edition, 8(19), 191 – 211
- Olashore, A. A., Ogunwobi, O., Totego, E., & Opondo, P. R. (2018). Psychoactive substance use among first-year students in a Botswana University: pattern and demographic correlates. *BMC Psychiatry*, 18(1), 270. <https://doi.org/10.1186/s12888-018-1844-2>.
- Palfai, T. P., & Weaver, J. (2006). College student drinking and meaning in the pursuit of life goals. *Psychology of Addictive Behaviors*, 20, 131-134. <https://doi.org/10.1037/0893-164x.20.2.131>
- Palfai, T. P., Ralston, T. E., & Wright, L. L. (2011). Understanding university student drinking in the context of life goal pursuits: The mediational role of enhancement motives. *Personality and Individual Differences*, 50, 169-174. <https://doi.org/10.1016/j.paid.2010.09.020>
- Pedrelli, P., Farabaugh, A. H., Zisook, S., Tucker, D., Rooney, K., Katz, J., & Fava, M. (2011). Gender, depressive symptoms and patterns of alcohol use among college students. *Psychopathology*, 44(1), 27-33.
- Peltzer, K & Pengpid, S. (2015). Extent of alcohol use and mental health (depressive and posttraumatic stress disorder symptoms) in undergraduate university students from 26 low-, middle- and high-income countries. *South Africa Journal of Psychiatry* 22(2), 39-43. DOI:10.7196/SAJP.662
- Raveendranathan, D., Jaisooriya, T. S., Nair, B. S., Menon, P. G., Rani, A., Thennarasu, K., & Murthy, P. (2020). Gender-Specific Correlates of Alcohol Use among College Students in Kerala, India. *Indian Journal of Psychological Medicine*, 42(4), 341-345. <https://doi.org/10.1177/0253717620927891>
- Schlesinger, S., Susman, M., & Koenigsberg, J. (1990). Self-esteem and purpose in life: A comparative study of women alcoholics. *Journal of Alcohol and Drug Education*, 36, 127–141.
- Schnitzer, L., Schulenberg, S., & Buchanan, E. (2013). Differential associations among alcohol use, depression and perceived life meaning in male and female college students. *Journal of Substance Use*, 18(4), 311–319. <https://doi.org/10.3109/14659891.2012.661026>
- Steger, M. F. (2009). *Meaning in life*. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 679–687). Oxford University Press.
- Steger, M. F., Kashdan, T. B., Sullivan, B. A., & Lorents, D. (2008). Understanding the search for meaning in life: personality, cognitive style, and the dynamic between seeking and experiencing meaning. *Journal of Personality*, 76(2), 199–228. <https://doi.org/10.1111/j.1467-6494.2007.00484.x>
- Substance Abuse and Mental Health Services Administration (2012). *Results from the 2011 National Survey on Drug Use and Health: Summary of national findings* (NSDUH Series H- 44 HHS Publication No. (SMA) 12-4713). Substance Abuse and Mental Health Services Administration.
- Tapert, S. F., Colby, S. M., Barnett, N. P., Spirito, A., Rohsenow, D. J., Myers, M. G., & Monti, P. M. (2003). Depressed mood, gender, and problem drinking in youth. *Journal of Child & Adolescent Substance Abuse*, 12(4), 55-68. https://doi.org/10.1300/j029v12n04_04
- Verankar, Y. J., & Vaz, F. S. (2018). Prevalence and pattern of alcohol consumption using alcohol use disorder identification test among students at a medical college in Goa, India. *International Journal of Community Medicine and Public Health*, 5(7), 2935-2938. DOI: <http://dx.doi.org/10.18203/2394-6040.ijcmph20182626>
- Verankar, Y. J., & Vaz, F. S. (2018). Prevalence and pattern of alcohol consumption using alcohol use disorder identification test among students at a medical college in Goa, India. *International Journal of Community Medicine and Public Health*, 5(7), 2935-2938. <http://dx.doi.org/10.18203/2394-6040.ijcmph20182626>
- White A, & Hingson R (2014). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research: Current Reviews*, 35, 201–218.
- White, A., Castle, I. P., Chen, C. M., Shirley, M., Roach, D., & Hingson, R. (2015). Converging patterns of alcohol use and related outcomes among females and males in the United States, 2002 to 2012. *Alcoholism: Clinical and Experimental Research*, 39, 1712-1726. <https://doi.org/10.1111/acer.12815>
- World Health Organization. (2016, April). *Depression*. <http://www.who.int/mediacentre/factsheets/fs369/en/>.

World Health Organization. (2018). *Global status report on alcohol and health*. World Health Organization.