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RELIGIOSITY AS A PROTECTIVE FACTOR AGAINST ALCOHOL AND SUBSTANCE USE AMONG FIRST-YEAR STUDENTS IN A SOUTH AFRICAN UNIVERSITY

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ABSTRACT

Religiosity modulates many aspects of human behaviour. However, there is paucity of empirical studies examining the protective effects of religiosity on alcohol and substance use among first-year students in South African universities. This study therefore assessed the protective effects of religiosity on alcohol and substance use among first-year students in a South African university. A total of 348 first-year students were purposively sampled for the study which lasted for 30 days. Results revealed that alcohol consumption, tobacco smoking, use of cannabis and any substance were 60.1%, 31.5%, 23.3%, and 36.9% respectively. High religiosity scores conferred protectives effects on alcohol consumption, (OR=0.33, p<0.01), tobacco (0.23, p<0.01), and on the use of any substance (0.38, p<.021). Being a male student, residing with parents and living in an urban area were associated with increased odds of alcohol use. Age and fathers' educational level were predictive of likelihood to use tobacco. The use of marijuana was associated with being a male student. Use of any substance was associated with being a male student and residing in the urban area. The current findings suggest that religiosity had restrictive role on alcohol consumption and substances use. Parental factors underscored the use of substances among the study population.

Keywords: Religiosity, alcohol, substance use, protective factors, university students

INTRODUCTION

Religiosity as a protective factor against alcohol consumption and substance use is gaining popularity in developed and developing countries. Chitwood, Weiss, and Leukefeld (2008) found 410 associations between religiosity and substance abuse in 105 peer reviewed articles published between 1997 and 2006. Sixty-two percent (62%) of the associations showed that religiosity had protective effects against alcohol and drug use, whereas 32.5% of the associations showed no link

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between religiosity and substance abuse. However, five instances suggested that higher religiosity was associated with higher levels of substance abuse. These studies concluded that religiosity had protective effects and the five instances could not have occurred by chance. Inverse associations between religiosity and adolescent substance use have been documented in several studies (Bahr, Hawks, and Wang 1993; Gryczynski and Ward 2011; Koenig, King, and Carson 2012; Rew and Wong 2006). Studies in developed countries have demonstrated that spiritual or religious practices offer protective effects from alcohol consumption (Jankowski, Hardy, Zamboanga, and Ham 2013; Harold G Koenig 2009; Menagi, Harrell, and June 2008). Furthermore, protective effect of religiosity was observed among student and adolescent populations who abused alcohol (Dulin, Hill, and Ellingson 2006; Johnson, Sheets, and Kristeller 2008; Harrell and Powell 2014) and substances (Hodge, Marsiglia, and Nieri 2011; Chu 2007; Ulmer Desmond, Jang, and Johnson 2012). In real life situation, religiosity and other contextual factors operate in a complex interaction to influence alcohol consumption and substance use. Empirical studies of primarily young populations have shown that religiosity regulates family influences (Bahr and Hoffmann 2010; Kim-Spoon, Longo, and McCullough 2014; Pearson, D'Lima, and Kelley 2011; Taha et al. 2010), self-regulation (DeWall et al. 2014; Jankowski et al. 2013), peer influences (Jackson et al. 2014; Kyei and Ramagoma 2013) and substance experimenting tendencies (Brown et al. 2008) with alcohol and illegal drug use. For instance, low likelihood to use drugs or experiment with drug in parent-adolescent bonds relationship was mediated by religiosity (Bahr, Hawks, and Wang 1993; Bahr and Hoffmann 2010; Litchfield, Thomas, and Li 1997). Similarly, studies have shown that religiosity mattered most in adolescents' low likelihood of drug use in parental monitoring (Bahr and Hoffmann 2010; Bahr et al. 1998; Kim-Spoon et al. 2014). In their studies, religiosity attenuated the relationship between peer influences and substance use (Bahr et al. 1998; Desmond, Soper, and Kraus 2011) and alcohol consumption (Desmond et al. 2011). Irrespective of religiosity dimensions, the practice often translates to protective effects against health risk outcomes (Gomes et al. 2013; Nonnemaker, McNeely, and Blum 2003; Salas-Wright et al. 2017; Sauer-Zavala, Burris, and Carlson 2014). Private and public religiosity had protective effects against cigarettes, alcohol and marijuana use among adolescents in America (Nonnemaker et al. 2003; Salas-Wright et al. 2017) and university students in Ethiopia, Beriut and Brazil (Gebreslassie, Feleke, and Melese 2013; Ghandour, Karam, and Maalouf 2009; Gomes et al. 2013). Protective effects of private religiosity was observed by deterring substance use initiation (Nonnemaker et al. 2003). Although private and public religiosity correlates as an intervening variable in protecting against alcohol consumption and substance use, studies have documented differential effects of religiosity dimensions on outcome variables (Luk et al. 2013; Martinez et al. 2015). However, nuanced integration of the two types of religiosity would reinforce each other as a health risk prevention strategy (Bahr et al. 1998; Jankowski et al. 2015). How unified dimension of religiosity may protect against alcohol consumption and substance use in student population could

be more effective than disaggregated dimensions. However, few studies combining multidimensional measure of private and public religiosity using factor analysis were carried out in developed countries (Hooker, Masters, and Carey 2014; Kendler et al. 2003).

However, studies linking protective effects of religiosity on alcohol consumption and substance use in South African universities are inadequate. Furthering secular interventions on health risk prevention negates the importance of religiosity as a risk protective factors in South African society. Few studies conducted have revealed inverse relationships between religious denominations and alcohol consumption (Osuafor, Maputle, and Ayiga 2016; Kyei and Ramagoma 2013), and substances use (Kyei & Ramagoma, 2013) among students in South African universities. However, these researchers did not evaluate the impact of religiosity on alcohol consumption and substance use in their study population. Furthermore, these studies focused on students in general while neglecting the most vulnerable first-year students. Most of the first-year students are experiencing separation and freedom from parental supervision for the first time in the university environment. This separation often gives leeway to socialization, exploration and experimenting with substance. While there are several studies among students, only one examined religiosity and substance use among first-year students at the University of the North (Peltzer, Malaka, and Phaswana 2002). Indeed, religiosity as a protective factor against alcohol consumption and substance use among first-year students has not been given adequate attention in South African universities. Given that about seventy-five percent of South Africans over the age of 18 years attributed their religion as guiding principle for moral behaviour (Pew Research Center, 2014), the role religiosity on alcohol consumption and substance use appeals for examination. The purpose of the paper is to examine the protective effects of religiosity on alcohol consumption and substance use among first-year students in a South African university. It was therefore hypothesized that high religiosity would have protective effects against alcohol and substance uses among the first-year students.

METHOD

Design: A cross-sectional survey on health risk behaviour among first-year students of age range 18 to 30 years old was carried out between April and June 2016 at Walter Sisulu University Mthatha campus in Eastern Cape Province. A list of lectures halls allocated for first-year modules was compiled. Five of these lecture halls were randomly selected for the survey. Before the data collection, the lecturers who should be in the selected lecture halls by university schedule were contacted to arrange the convenient time for the research. The lecturers whose lecture periods were used assisted the principal investigator in data collection. The purpose of the research was explained to the students and their consents were obtained before filling out the questionnaire. Data were collected by distributing self-administered questionnaire to first-year students during the lecture periods. The questionnaire was designed by the principal investigator from the review of related studies (Ghandour et al. 2009; Gomes et al. 2013; Peltzer et al. 2002;

Abu-Ras, Ahmed, and Arfken 2010). A total of 500 questionnaires were distributed but 400 questionnaires were returned. After screening the returned questionnaire, 338 were correctly filled and subsequently used for the data analysis. The research protocol for the survey was approved by the Research Ethics Committee, with project number REC/9b/2016.

Measures: The outcome variables were current alcohol consumption and substances use in the last 30 days prior to the survey. The following psychoactive substances were examined separately: 1. Cannabis; 2. Mandrax; 3. LSD; 4. Nyaope; 5. Tobacco; 6. Glue; and 7. Tranquilizers. A substance was considered used if it had been consumed at least once in the last 30 days prior to the study. The respondents were asked if they used any of these substances in the last 30 days. The responses were either "Yes" or "No". Those who reported that they consumed alcohol were further asked "How many times did they experience a subjective loss of control (drunkenness) within the 30-day period. Religiosity was measured on five questions representing private and public religiosity. Three questions were on religious practices; "How often do you attend services?", "Do you pray in the morning and at night?", and "How often do you read the Bible?". Respondents could choose one from four responses: 1. Never; 2. Rarely; 3. Few times; and 4. Regular. Two questions on the religious beliefs were "how important is your religious teachings to you?" and "how important is God in your daily life?". Respondents could choose one option from the level of importance: 1. Not Important; 2. Slightly Important; 3. Important; and 4. Very Important. The five questions were subjected to consistency and factor analysis tests and were found to have high coefficient reliability with Cronbach alpha of 0.812, suggesting internal consistency on the measure of religiosity. Factors analysis scores revealed KMO adequacy of 0.814 and explained 57% of variance on religiosity measures.

Covariates examined were sociodemographic profile which including age, sex, places of residence, religious affiliation, parents' educational levels, and the person residing with. Socioeconomic status was measured by one self-rated on "How would you describe your home socioeconomic status? Expressed as 1. Poor, 2. Middle, and 3. Rich.

Data Management and Analyses: Demographic characteristics, alcohol consumption and substance use were analysed using descriptive statistics. Individual multivariate logistic regression models were used to establish the predictors of alcohol consumption, cannabis, tobacco and any substance use in the past 30 days. Backward stepwise elimination was performed with religiosity and all the demographic variables were included as covariates in each of the models. The results were described using frequencies, odds ratio and confidence interval (95% CI). All data analyses were performed using IBM Statistical Package for Service Solutions (SPSS) version 24.

RESULTS

Demographic characteristics of the respondents

The mean and standard error of the respondents age was 20.9 ±0.12. Table 1 indicates that about two-third were

Table 1. Demographic characteristics of the first-year students

Characteristics	Frequency	Percentage
Sex		
Male	111	32.1
Female	235	67.9
Residence		
Urban	236	67.8
Rural	112	32.2
Residing with		
One parent or both	152	81.3
Relatives	35	18.7
Mother's Educational level		
<= Primary	73	24.9
Secondary	120	41.0
Tertiary	100	34.1
Father's Educational level		
<=Primary	73	31.1
Secondary	81	34.5
Tertiary	81	34.5
Socioeconomic status (SES)		
Poor	116	35.6
Middle	186	57.1
Rich	24	7.4
Religious Affiliation		
None	32	10.1
Methodist	77	24.2
Pentecostal	117	36.8
Other churches*	92	28.9
Preach against alcohol in the past one month		
No	49	24.3
Yes	138	68.3
Don't know	15	7.4
Preach against substance use in the past one month		
No	52	27.2
Yes	125	65.4
Don't know	14	7.3

*Other churches include Anglican, Roman Catholic, Lutheran, Twelve Apostles, Seventh Day Adventist and Baptist whose sample size were very small to stand alone in the analysis.

females. The same proportion resided in the urban area. About 8 out 10 were living with either one parent or both parents. In terms of education, 4 out of 10 and 3 out of 10 indicated that their mother and father respectively had secondary education. Over half reported that they belong to middle stratum in terms of socioeconomic class. About 10% did not have any religious affiliation. About two-third stated that message against alcohol consumption and substance use was preached in the last 30 days in their places of worship.

Religiosity measures among respondents

Table 2 showed that about 37.9% and 36.8% reported that they attend religious services few times or more regular. Over 80% engaged in spiritual activity of praying morning and night more often. Nearly two-third indicated that they read the Bible regularly or few times. Forty-seven

Table 2. Percentage distribution of religiosity among the respondents

Religiosity statements	Never % (N)	Rarely % (N)	Few times % (N)	Regular % (N)
How often do you attend services?	11.5 (40)	13.8 (48)	37.9 (132)	36.8 (128)
Do you pray morning and at Night?	3.2 (11)	14.5 (50)	37.2 (128)	45.1 (155)
How often do you read the Bible	9.0 (31)	26.1 (90)	37.1 (128)	27.6 (96)
	Not Important	**Slightly Important**	**Important**	**Very Important**
How important is Religious teachings to you?	7.0 (24)	25.3 (87)	46.6 (162)	20.6 (71)
How important is God in your daily life?	3.5 (12)	4.4 (15)	12.0 (41)	80.1 (274)

Table 3. Alcohol and psychoactive substances use among the first-year students in the last 30 days

Variables	No % (N)	Yes %(N)
Alcohol		
Alcohol consumption	39.1 (139)	60.1 (209)
Consumption with no episode of drunkenness	-	46.4 (97)
One or more episodes of drunkenness	-	53.6 (112)
Substances used consumed in the last 30 days other than alcohol		
Cannabis	76.7 (237)	23.3 (72)
Mandrax	95.0 (268)	5.0 (138)
LSD[a]	93.6 (42)	6.4 (18)
Glue	95.4 (269)	4.6 (13)
Nyaope[b]	92.3 (263)	7.7 (22)
Tobacco	68.5 (204)	31.5 (94)
Tranquilizers	93.1 (256)	6.9 (19)
Any substance	63.1 (178)	36.9 (104)

[a]Acid, Candy, Smarties; [b]Nyaope is fine powder that is usually combined with marijuana and other elements like rat poison, cleaning detergents and even crushed antiretroviral drugs.

percent reported that their religious teaching is important to them. Whereas over 80% stated that God is very important in their daily lives.

Alcohol and psychoactive substances

Table 3 above presents summary of respondents' alcohol and substance use in the last 30 days. About 60% had consumed alcoholic beverages, with 54% stating they had experienced one or more instances of drunkenness. About 37% had used psychoactive substances in the last 30 days. The substances consumed by largest number of the respondents were tobacco (32%), followed by cannabis (23%), nyaope (8%), tranquilizers (7%), LSD (6%), mandrax (5%) and glue (5%) in decreasing order.

Multivariate analyses

Multivariate logistic regression analysis was applied to identify salient variables which in combination predict alcohol consumption and substance use in the past 30 days among participants studied. Table 4 shows that religiosity had protective effect on alcohol consumption, tobacco and on any substance use. This confirmed the hypothesis that the greater the religiosity the less likely it is that a first-year student will consume alcohol, tobacco or use any psychoactive substance. However, the effect of

Table 4. Multivariate regression analysis of alcohol, cannabis, tobacco and any substance (other than alcohol) in the last 30 days

Variables	OR	CI 95%	P value
Alcohol			
Religiosity factor	0.34	0.15-0.73	0.006
Sex			
Male	3.32	1.01-10.97	0.049
Female	1.00	-	
Residence			
Urban	3.21	0.98-10.50	0.053
Rural	1.00	-	
Residing with			
Parents	3.73	1.04-13.35	0.043
Relatives	1.00	-	
Cannabis			
Sex			
Male	4.28	1.39-13.09	0.011
Female	1.00	-	
Tobacco			
Religiosity factor	0.23	0.09-0.55	0.001
Age	0.77	0.59-0.99	0.047
Father's Education			
<=Primary	1.00		
Secondary	2.92	0.68-12.53	0.148
Tertiary	8.54	1.75-41.60	0.008
Any substance			
Religiosity factor	0.38	0.17-0.87	0.021
Sex			
Male	9.30	2.44-35.37	0.001
Female	1.00	-	
Residence			
Urban	4.90	1.27- 19.01	0.021
Rural	1.00	-	

religiosity on cannabis use was not statistically significant. Male students were 3 times more likely than females to report alcohol consumption. The association between place of residence and alcohol consumption is marginally weak. Similarly, those who lived with their parents were about 4 times more likely to report alcohol consumption than those living with their relatives. Only sex was significantly associated with the use of cannabis; male students were more likely than female to report the use of cannabis. As the age increased, the chances that a first-year student will use tobacco decreased. Furthermore, respondents whose fathers had tertiary education were more likely than those their father had primary or no formal education to report tobacco use. Male students were 9 times more likely than females to report any substance use. In terms of place of residence, those living in the urban area were more likely to report any substance use compared to those in rural area.

DISCUSSION

This study examined the protective effect of religiosity on alcohol and substance

use among first-year university students. The hypothesis was confirmed by the findings that students who practiced high religiosity were less likely to report alcohol and substance use compared to those who were less religious. The results supported the findings of some earlier studies who reported that religiosity modulated low alcohol consumption among university students (Gomes et al. 2013; Moore, Berkley-Patton, and Hawes 2013; Scharer 2017). Results showed that over 60% of participants reported that messages against alcohol consumption were disseminated during services in their religious groups in the last 30 days. It was therefore plausible that anti-drinking preaching may have permeated as acceptable behavioural norm which deter alcohol consumption among first-year students.

The results of the present study also demonstrated that religiosity had protective effect on tobacco and any substance use in the last 30 days. This is consistent with previous studies that found inverse relationships between religiosity, tobacco (Salas-Wright et al. 2017) and substance use (Gomes et al. 2013) within the same time frame of the survey. Religious teachings such as human body as temple of God is a universal norm. Furthermore, negative attitude and proscriptive beliefs against substance use often disseminated by religious groups may create unfavourable ground to use tobacco or any substance. It is therefore suggestible that such religious beliefs have protective effects against the use of tobacco or any substance.

The results did not reveal significant association between religiosity and the use of cannabis. A result that contradicted some earlier empirical findings which showed significant inverse relationship between religiosity and cannabis use among university student population (Burke, et al. 2014; Gomes et al. 2013; Peltzer et al. 2002). The discrepancies would first be attributed to the complex multifaceted measure of religiosity used in the study. In the present study, five items which integrated private and public religiosity were used; whereas other studies (Burke et al. 2014; Gomes et al. 2013) used one or disaggregated dimensions of religiosity. Secondly, the proportion sampled population that use cannabis in this study was very small compared to large numbers in other studies.

The results of this study are similar to other reports that male students consume alcohol (Abu-Ras et al. 2010; Erevik et al. 2017; Heydari et al. 2015) and use psychoactive substance (Goel et al. 2015; Heydari et al. 2015) more than their female counterparts. Alcohol consumption is a means of socialization and making friend for males. South African society in the past and present has traditional festivals which make experimenting and testing of alcohol and other substance by young males unavoidable. The implication is that males use alcohol consumption and use of psychoactive substance as tests of resistance, pride and masculinity. However, it is suggestible that females still hold restrictive behaviour toward alcohol consumption and substance use among the study population.

Results further revealed that students living with their parents were more likely to consume alcohol than those living without their parents. This is not unexpected because about 60% of the students have consumed alcohol during their high school days. Another 43% indicated that the drugs were supplied by their friends while 42.6% obtained drugs by themselves. Poor parental monitoring,

supervision and parents being unaware of their children friends have been associated with alcohol consumption and substance use (Bahr and Hoffmann 2010; Bahr et al. 1998; Harrell and Powell 2014) With poor monitoring, parents are unaware of friends and situation that may encourage exposure to alcohol and substance use. The findings are line with previous studies in Iran (Khami et al. 2010) and Saudi Arabia (AlSwuailem, AlShehri, and Al-Sadhan 2014; Taha et al. 2010) that higher educational level of fathers predicted students' tobacco use.

Residing in urban areas significantly predicted alcohol consumption and use of any substance within the last 30 days. This finding is consistent with report among university students in Ethiopia (Gebreslassie et al. 2013). High urban alcohol and substance use may be linked to the fast urbanization and globalization processes in South Africa society. Previous studies predicted rise in alcohol and substance use in most developing countries due to urbanization (Babor, Robaina, and Jernigan 2015; Ferreira-Borges et al. 2015). This rapid transformation has made access to illicit substances easy for students living in urban area with high causalities. While delay in banning alcohol advertainment lingers in South Africa, prohibiting the use of urban university students for alcohol marketing and promotion is pertinent.

In conclusion, this study investigated the protective effect of religiosity on alcohol and substance use among first-year students in a South African university. Findings indicated that religiosity played protective roles against alcohol consumption and substance use. It was therefore suggested that encouraging first-year students involvements in religious activities help reduce their propensities to substance use and subsequently substance abuse and it attendant effects. It was further suggested that both private and public religiosity as an aggregate force may play a positive role in protecting against alcohol consumption, tobacco and any substance use. Finding that religious affiliation did not matter in prevention of substance use may suggest desertion of religious mission in teaching and values on alcohol use by the students. Given that this university has recorded losses of life due to substance use, management can draw from the findings of this study and encourage students, especially first-year students to get involved in religious activities as a strategy for reducing substance abuse tendencies.

However, despite the robustness of these findings, there are caveats to interpretations. The present study used cross sectional data which prohibit claiming causation on alcohol use by predicting variables. There are cultural variables which were not available in the dataset. Religiosity dimensions used signified an extreme level of internalised sense of religiosity which respondents may have responded to less than truthfully. Furthermore, our findings cannot be extrapolated to other religious groups because all respondents were Christians. Nevertheless, these dimensions have been used extensively with other items in predicting protective effects of religiosity. The present findings may not be generalised to the whole student population because data was collected from the first-years students.

Conflict of interest

We have no conflict of interest. The manuscript is our original work and has not been submitted for publication or under review by any other journal.

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