

Religiosity, Gender, and Educational Attainment as Predictors of Drug Abuse in South Africa: A Logistic Regression Approach*

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Abstract: The study examined religiosity, gender, and educational attainment as predictors of drug abuse in South Africa. Cross-sectional data from 2015 South Africa General Household survey was used for the study. Data was analyzed on 47,275 respondents ages 18 to 114 years. The mean age of the respondents was 40.3 (SD = 16.42). Results showed that religiosity has significant effect on drug abuse χ^2 (df = 3) = 37.81, $p < .001$. Results further showed that gender has significant effect on drug abuse χ^2 (df = 3) = 26.77, $p < .001$. Finally, the outcome of the study showed that educational attainment has significant effect on drug abuse χ^2 (df = 3) = 14.13, $p < .001$. The result of the logistic regression showed that the hazard rate for the males was higher than that of the females. It was also revealed that as educational attainment increases, hazard rate for drug abuse decreases. The result further showed the hazard rate for the religious respondents to be lower compared to that of the non-religious respondents. As a conclusion, we recommend that drug abuse can be controlled by encouraging more religious practices, make education more accessible and affordable, and control the accessibility/availability of drugs of abuse, especially among the males citizens.

Keywords: Drug abuse, Educational attainment, Gender, Religiosity, South Africa.

Introduction

The problem of drug abuse is a universal health challenge. The 2015 United Nations Office on Drugs and Crime Report estimated that globally a total number of 246 Million people, aged 15 to 64 used illicit drugs in 2013 (UNODC, 2015). The 2016 World Health Statistics report also estimated that as at 2010, 38% of the world population aged 15 and above had drunk alcohol in the last 12 months (WHO, 2016). Both these reports have pointed to the fact the problem of drug abuse transverse race, nationalities, and geographical locations. It cuts across gender, religion, socio-economic and demographic enclaves. The nation of South Africa is not exempted from the burden of drug abuse. According to the WHO World Health Statistics (WHO, 2016), 11.5 total alcohol per capita consumption for the population aged 15 and above was estimated for 2015. This figure is the highest in Africa following Gabon and Namibia with estimated total alcohol per capita consumption of 11.8. Furthermore, the analysis of the South African Community Epidemiology Network on Drug Use has shown that drug

* We are appreciative to the Statistics South Africa (statssa) for the opportunity to use the 2015 General Household survey for this study. We are indeed, grateful.

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abuse is still a problem in South Africa and that more effort will be required to curb its escalating trend (Parry, Morojele, Myers, & Plüddemann, 2013).

Alcohol and tobacco remain the most commonly abused drugs in South Africa (Madu & Matla, 2003; Mohasoa & Fourie, 2012; Parry *et al.*, 2002; Peltzer & Ramlagan, 2009, 2010; Ramlagan, Peltzer, & Matseke, 2010). Madu and Matla (2003) noted that alcohol use in South Africa has become a lifestyle for its users. According to these authors, most users of alcohol and cigarette use them to relax, to reduce tension, to mark weekend, and at parties. Other authors have indicated reasons why people engage in substance abuse to include childhood experiences (Collings, 2015; Darke & Torok, 2013), peer deviance (Kendler, Ohlsson, Mezuk, Sundquist, & Sundquist, 2015), cognitive factors such as attitude, outcome expectations, and self-control (Jalilian *et al.*, 2015), depression (Edlund *et al.*, 2015), school failure (Gauffin, Vinnerljung, Fridell, Hesse, & Hjern, 2013), advertisement and availability (Ondieki & Mokuu, 2012), parental substance abuse (Lehikoinen, Orden, Heinonen, & Voutilainen, 2016; Ovens, 2008; Parolin, Simonelli, Mapelli, Sacco, & Cristofalo, 2016) among others.

Rogers (2011) defined drug abuse as the excessive, maladaptive, or addictive use of drugs for nonmedical purposes despite social, psychological, and physical problems that may arise from such use. Drugs of abuse can be classified according to their structures, pharmacology and primary effects (Hill & Thomas, 2016). The physical, psychological, economic, and social implications of substance use to the user and the society can be overwhelming. Drug abuse has been linked to poor psychological wellbeing (Visser & Routledge, 2007), criminal behavior (Hamdulay & Mash, 2011; Pillay, 2000), HIV/AIDS risks (Akindipe, Abiodun, Adebajo, Lawal, & Rataemane, 2014), violence and aggression (Swartz *et al.*, 1998; Thesnaar, 2011), poor oral health (Du *et al.*, 2001; Van Zyl, 2014), dependence syndrome (Hall & Degenhardt, 2009) *et cetera*

The term religiosity may be associated with various beliefs, behaviors, feelings, attributes, relationships, and experiences with the divine. It has been defined as a system of beliefs in a divine or superhuman power, and practices of worship or other rituals directed towards such a power (Zinnbauer & Pargament, 2014). Although it is often used interchangeably with spirituality, it is not synonymous with spirituality. Religiosity manifests in such acts like attendance at religious meetings, participating in religious rituals and rites, religious prayers, fasting *et cetera*. Studies have established links between religiosity and other psychological variables such as wellbeing, recovering, life satisfaction, purpose in life (Zinnbauer & Pargament, 2014). Wallace *et al.* (2007) in their study on religiosity and adolescent substance abuse established that religiosity affects substance abuse among American adolescents. Klein, Elifson, and Sterk (2006) in their study also reported that greater amount of drugs were used by respondents who were less religious. In another study, Bahr, Maughan, Marcos, and Li (1998) noted that students who were religious tended not to use drugs or have as close friends as students who abuse drugs. Similarly, Adamczyk and Felson (2012) found that religious programs have positive effects on adolescents' health-related behaviors.

A number of studies have also examined the effect of gender on the abuse of drugs. Buccelli, Della Casa, Paternoster, Niola, and Pieri (2016) examined gender differences in drug abuse in the forensic toxicological approach and found that male adults are more likely to abuse drugs than the female adults. Visser and Routledge (2007) found that nearly twice as many males as females abused substances in their study. Similarly, Simoni-Wastila (1998) reported gender differences in illicit drug use in a UK study. Also, Becker and Grilo (2006) in their study on drugs and alcohol use in hospitalized adolescents reported a distinct pattern of drug use for males and females. Cotto et al. (2010b) investigated gender effects on drug use, abuse, and dependence, and found a significantly higher rate for males than for females.

The effect of educational attainment on drug use behavior has also been a subject of study among researchers. Obot and Anthony (1999) assessed the level of education on injecting drug use among African Americans and found a significant difference in the level of education and drug use. The study specifically found that drop-outs were 2-3 times more likely to have started and maintained injecting drug use (IDU) as compared to high school graduates. Also, Fothergill *et al.* (2008) investigated the effect of education on drug use disorders. Respondents with no education, poor education were more at risk compared to those with college degrees.

Given that studies have been carried out on the variables under investigation, these studies were not exhaustive as we have combined three variables in this study. Moreso, none of the above individual studies on the effect of gender, religiosity and educational attainment on drug abuse emanated from South Africa. An understanding of the effect of these independent variables on the dependent variable will complement existing efforts at addressing the problem of drug abuse in South Africa.

Method

Data

This study uses the latest (2015) South Africa General Household Survey. The population consists of all private (non-institutionalized) households and residents in workers' hostels in all the nine provinces in South Africa. The South Africa General Household survey uses a Master Sample frame which was developed for as a general-purpose household survey frame. The sample for the GHS is based on a stratified two-stage design with Probability Proportional to size (PPS) sampling of primary sampling units (PSUs) in the first stage and sampling of dwelling units (DUs) with systematic sampling in the second stage. A standard questionnaire was used to elicit data from the respondents.

Measures

The dependent variable for the study is drug abuse. This was measured by having taken alcohol of any other drugs in the past three months. The independent variables included Religiosity, Gender, and educational attainment. Religiosity was measured by the question: "Aside from weddings and funerals, how often do you attend religious services?" Gender was measured with the question: "Are you a male or female?" while educational attainment was measured with the respondents' highest educational qualification. There were 32-category responses to educational attainment in the original questionnaire which were recoded into four of (1) No Education, (2) Primary Education, (3) Secondary Education, and (4) Tertiary Education.

Data Analysis

Since there is a policy on the ground that forbids children ages 0 to 18 from accessing drugs in South Africa, all respondents in that age category were screened out of the study. Final responses were analyzed on 47, 275 South Africans ages 18 to 114 years from all the 9 provinces. Simple percentages were used for the descriptive analysis (univariate analysis); chi-square test was used to test the effect of the individual IVs on the DV (Bivariate analysis), while logistic regression was used to confirm the predictive effects of the IVs on the DV (Multivariate analysis). The choice of Chi-square and logistic regression were informed by the dichotomous nature of the dependent variable and the nature of the population under study (Babbie, Wagner, & Zaino, 2015; Ho, 2013). Statistical Package for Social Sciences (IBM® SPSS®) version 23 was used for the data analysis.

Results

Table 1 presents the demographics of the respondents. Their age ranges from 18 to 114 years ($M_{age} = 40.03$, $SD_{age} = 16.42$). Young adults constituted 57.4%, middle adults constituted 34.1% while late adults were only 8.5% of the total respondents. Twenty-one thousand, eight hundred and five (21805) and twenty-five thousand, four hundred and seventy (25470) participated in the study. Further analysis of the table showed that 6.8% of the total respondents had no education, 11.1% had primary education, 68.7% had secondary education, and 13.4% had tertiary education. In addition, 75.9% of the respondents were religious while 24.1% were not religious. The percentages of study participants by province is as follows: Western Cape (10.6%), Eastern Cape (12.9%), Northern Cape (4.6%), Free State (5.9%), KwaZulu-Natal (17.6%), North West (6.4%), Gauteng (23.8%), Mpumalanga (7.6%), and Limpopo (10.4%). In terms of race, 79.7% of the participants were Africans/Blacks, 9.8% were colored, and 2.7% were Indians/Asians, while 7.9% were whites.

Table 1: Descriptive Statistics (Univariate Analysis)

Variable	Number	Percentage
Age:		
Young Adults	27137	57.4
Middle Adults	16120	34.1
Late Adults	4018	8.5
Gender:		
Male	21805	46.1
Female	25470	53.9
Educational level:		
No Education	3215	6.8
Primary	5239	11.1
Secondary	32473	68.7
Tertiary	6348	13.4
Religiosity:		
Non Religious	11406	24.1
Religious	35869	75.9
Province:		

Western Cape	5028	10.6
Eastern Cape	6104	12.9
Northern Cape	2198	4.6
Free State	2784	5.9
KwaZulu-Natal	8323	17.6
Gauteng	11275	6.4
Mpumalanga	3612	7.6
Limpopo	4909	10.4
Race:		
African/Black	37675	79.7
Colored	4630	9.8
Indian/Asian	1254	2.7
White	3716	7.9

Table 2 presents the results of the Chi-square analysis. The result showed that there is a significant effect of gender on drug abuse: $\chi^2 (df = 3) = 26.77, p < .001$. The effect of educational attainment on drug abuse was also significant: $\chi^2 (df = 3) = 14.13, p < .001$. Furthermore, we examined the effect of religiosity on drug abuse and was significant: $\chi^2 (df = 3) = 37.81, p < .001$.

Table 2: Chi-Square Analysis of the effect of gender, educational attainment, and on drug abuse (Bivariate Analysis)

Variable	Drug use		χ^2	P
	No	Yes		
Gender:				
Male	21729	76	26.77	0.00
Female	25439	31		
Educational level:				
No Education	3204	11	14.13	0.00
Primary	5218	21		
Secondary	32404	69		
Tertiary	6342	6		
Religiosity:				
Non Religious	11353	53	37.81	0.00
Religious	35815	54		

Table 3 presents the result of the logistic model (logit model), with drug use as the dependent variable and gender, educational level and religiosity as the independent variables. The results show that the hazard for female respondents is about 42%, implying a decrease of about 58% as compared to that of the male respondents taken as the reference category. This implies that males are more likely than females in drug and alcohol abuse. On educational attainment, we noticed that as the educational level increases, hazard rate decreases. For example, the hazard rate for primary education is about

110.8%, that of secondary education is 62% and that of tertiary education is 30%. This showed that as the educational attainment progresses, people are less likely to be involved in drugs and alcohol use. On the religiosity of the respondent, those that religious have hazard rate of about 42% compared to 100% for those that are not religious. This means that religious plays a significant role in determining the possibility of a person taking hard drugs or not.

Table 3: Logit regression model of the effect of Gender, Educational Attainment and Religiosity on Drug Abuse (Multivariate Analysis)

Variable	B	Exp(β)	P	Confid. Interval
Gender:				
Male (Ref.)	-	1.000	-	-
Female	-0.881	0.415	0.000	(0.270, 0.637)
Educational level:				
No Education(Ref.)	-	1.000	0.012	-
Primary	0.103	1.108	0.783	(0.533, 2.306)
Secondary	-0.478	0.620	0.144	(0.327, 1.177)
Tertiary	-1.203	0.300	0.000	(0.110, 0.817)
Religiosity:				
Not Religious (Ref.)	-	1.000	-	-
Religious	-0.862	0.422	0.000	(0.285, 0.625)
Constant	-4.760	0.009	0.000	-

Discussion

This study found religiosity to be a significant predictor of drug abuse in South Africa. It was revealed that the hazard rate for the non-religious sample was higher than the religious group. Previous studies have also established similar results (Bahr *et al.*, 1998; Brizer, 1993; Klein *et al.*, 2006; Pullen, Modrcin-Talbott, West, & Muenchen, 1999; Wallace *et al.*, 2007). It is a general notion that standard moral conduct is part of the core tenets of most religious organizations, just as the use of alcohol and other drugs are prohibited. This is accomplished through standard beliefs, values, norms, and behaviors practiced in most religious organizations. Human beings are also believed to be composed of spirit, soul, and body, and that the internal controls the external; the unseen control the seen. Through the acts of prayer and other religious rites/rituals, men are able to overcome the problems that come from within. Also, most religious leaders play the role of the counselor in advocating against social vices and health-risk behaviors.

This study also finds a significant relationship between gender and drug abuse. The hazard rate for substance abuse was found to be higher than that of the females. This result is consistent with the outcome of previous studies (Becker & Grilo, 2006; Buccelli *et al.*, 2016; Cotto *et al.*, 2010a; Prendergast, Huang, Evans, & Hser, 2010; Simoni-Wastila, 1998; Visser & Routledge, 2007; Wu *et al.*, 2010). This gender differences in drug abuse may be attributed to the greater sensitivity and

vulnerability to drugs among females to the males. Furthermore, types and direction of sensation seeking among males and females differ. While men may prefer the use of drugs and other substances as means of gratifying sensation, females prefer less hazardous means of gratifying sensations.

The findings of this study also showed that educational attainment has a significant effect on drug abuse. It was noted in the result that hazard rate for drug abuse was going down as the level of education was going up. Other studies such as (Barros, Santos, Mazoni, Dantas, & Ferigolo, 2008; Blum *et al.*, 2014; Fothergill *et al.*, 2008; Klisch, Bowling, Miller, & Ramos, 2013; Obot, Hubbard, & Anthony, 1999) have also found similar results. Education afford people the opportunity to know the danger involved in using drugs. Through education, most people are exposed to life skill training, drug prevention program, counseling et cetera. Some universities have drug abuse as part of their curricular while others encourage students to organize anti-drug clubs. All of these, in the long run, help to reduce the menace of drug abuse among students.

Conclusion and Recommendations

Based on the findings of this study, we concluded that religiosity, gender, and educational attainment are predictors of drug abuse. Therefore, as part of measures to curb the menace of drug abuse;

- i. Religious intervention should be included as part of drug treatment program
- ii. Religious leaders should be incorporated into drug counseling program
- iii. More recreational facilities should be available for the men as a way of gratifying sensations
- iv. More restrictions/regulations should be placed on the drugs of abuse
- v. More effort should be investing in drug education
- vi. Education should be made more accessible and affordable.

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