PROFILING RHODES UNIVERSITY STUDENTS' SUBSTANCE USE DURING THE COVID-19 PANDEMIC LOCKDOWN: COMPARING THE AUDIT AND CCAPS-62 SUBSTANCE ABUSE SUB-SCALE

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Abstract

Students are vulnerable to academic distress and mental health concerns. Many struggle to effectively cope with the many demands placed on them from various factions; included but not limited to institutional demands, financial concerns, and parental expectations. With the most recent outbreak of the SARS-Co V-2 (better known as the COVID-19 pandemic) many students have struggled to effectively cope with the changes relating to the nationwide lockdown. Universities had to change the way in which they provide students with the necessary academic material, and many had to return to their familial homes. This had a deleterious effect on the way students performed their daily activities and coping. A rise in impaired mental health was noted. Many students used alcohol as a means of coping during this tumultuous and unprecedented time. Undergraduate students at Rhodes University were asked to complete a survey questionnaire via SurveyMonkey, an online survey service. Data was collected over a ten-day period during July 2020. The AUDIT and the CCAPS-62 Substance Use subscale were used to measure their alcohol intake during lockdown and results was compared. Results indicated a significant positive correlation between the CCAPS-62 substance use subscale and the AUDIT ($r = 0.80$, $n = 930$, $p < 0.01$). Outcomes identified that men tend to drink more than females, and white students tend to drink more than black students. Findings suggests that the CCAPS-62 a multidimensional instrument measuring general distress among students could positively contribute to the reliability and validity of the measure used in a multicultural and multilingual society such as South Africa.

Keywords: COVID-19, lockdown, coping, pandemic, alcohol, alcohol use, academic distress, students, CCAPS-62, AUDIT

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Introduction

Research conducted in academic settings have indicated that stress has become an important and under-researched phenomenon among undergraduate students at universities both locally (Kaminer & Shabalala, 2019; Mason, 2017; Van Breda, 2017) and internationally (Bataineh, 2013; Bedewy & Gabriel, 2015; Dada, et al., 2018; Elias, Ping, & Abdullah, 2011; Portoghese, et al., 2019; Ribeiro, et al., 2018). Academic stress as identified by researchers include the lack of time management, obligation to meet assessment deadlines, high rates of competition among students, information overload, overcrowded lecture halls, insufficient resources to accomplish academic work (financial resources, lowered concentration, exhaustion, family and personal relationship problems, stress around exams, and low self-esteem), as well as pressure to perform well in university settings by their parents, specifically related to first generation students (Bataineh, 2013; Bedewy & Gabriel, 2015; Dada, et al., 2018; Ham & Hope, 2005; Kumaraswamy, 2013; Portoghese et al., Ribeiro et al., 2018; Schreiber, 2007; Stewart, Zvolensky, & Eifert, 2001; Zajacova, Lynch, & Espenshade, 2005). Empirical evidence indicates that university students are exposed to several challenges daily (Bojuwoye, 2002; Mason, 2017; Van Breda, 2017, Laher, Bain, Bemath, De Andrade, & Hassem, 2021), including performance demands, having to adjust to the new academic environment and the management of finances. Furthermore, data collected highlighted that many students view and experience stress negatively and in turn adopt ineffective coping strategies (Mason, 2017; Van Breda, 2017). According to Mason (2017) coping strategies

employed by students are therefore of utmost importance in relation to regulating their emotions and problem solving. Based on these psychosocial vulnerabilities' students may find it difficult to fully adjust to the new academic environment they find themselves in and succumb to the development of psychological disorders (i.e., chronic stress, anxiety, depression, and substance abuse to name a few) and academic attrition (Mason, 2017).

COVID-19 and its impact on students

The most recent outbreak of the SARS-Co V-2 (better known as the COVID-19 pandemic) has largely affected university students as an increase in psychological symptoms of stress, anxiety, depression, and adjustment were identified. Students were unsure when campus life and associated activities would resume (Husky, Kovess-Masfety, & Swendsen, 2020). Previous research on pandemic outbreaks conducted in China involving the severe acute respiratory syndrome (SARS) found a profound increase in stress, post-traumatic stress disorder (PTSD), and global psychological distress. Considering the pandemic authorities have placed emphasis on the infectious nature of COVID-19 and in many countries such as the United Kingdom, Brazil, Italy, USA, and South Africa authorities have implemented strict lockdown regulations to lower the curve of the infection rate (Pedrosa, Bitencourt, Froes, Cazumba, Campos, De Brito, & Simoes de Silva, 2020). Lockdown regulations resulted in limiting individuals' movements such as having to study and work from home, limited social activities, and social distancing (Rall, 2021; Visser & Law-van Wyk, 2021). Among students decreased mental health were related to fears around being infected with the virus and the considerable decrease in social interactions (Visser & Law-van Wyk, 2021). These restrictions were specifically disruptive to students and their way of learning as many universities worldwide moved to online teaching platforms (Laher et al., 2021;

Visser & Law-van Wyk, 2021). Academic distress experienced by students centred around decreased academic performance, increased academic pressure, adjusting to new ways of teaching and learning, understanding course material, lack of resources such as access to libraries, the internet, computers to effectively perform tasks, and fears surrounding post-graduation plans (Laher et al., 2021; Pretorius, 2021). In South Africa and few other countries, governments-imposed restrictions on the sale of alcohol to further reduce the rate of infections (Biddle, Edwards, Gray, & Sollis, 2020; Rall, 2021) and provide short-term relief to already over extended health care systems and personnel. Due to many underlying psychological disorders (depression and anxiety, to name a few) coming to the fore during the worldwide lockdown many sought the comfort of alcohol as a measure of coping (Barbosa, Cowell, & Dowd, 2021; Biddle et al., 2020; McPhee et al., 2020).

Drinking culture among students

Alcohol as a form of coping is well documented among students (De Klerk & Young, 2012; McConnachie, 2019; Young & De Klerk, 2008; Young & Mayson, 2010). Due to its sedative and depressant-like properties alcohol tends to have a mind altering and numbing effect on the user leading to short-term positive feelings and relaxation (Maphisa & Young, 2018; McConnachie, 2019). When compared to other African countries, South Africa is ranked among the countries with the highest per capita alcohol use among adults (WHO, 2014). For first year university students transitioning from school to tertiary educational settings is a major life event as they leave the safety of their familial home (McConnachie, 2019; Muthén & Muthén, 2000). Experiencing freedom for the first time (for many) as well as the autonomy associated with living on their own can be overwhelming for some, whereas others may find it exciting (McConnachie, 2019; Muthén

& Muthén, 2000). This transitional phase of dependence to independence is often identified as a period when students tend to experiment with alcohol and an increase in alcohol use is observed (McConnachie, 2019). Early adulthood has been identified as a period for increased alcohol use and heavy episodic drinking as students are not psychologically equipped to manoeuvre between added academic pressure placed on them and everyday life challenges, which places them in a precarious position to experience academic distress (McConnachie, 2019; Muthén & Muthén, 2000). Often universities drinking culture is adopted by students entering the institution and end up having a profound impact on how students' cope with the added pressure placed on them (Skog, 1980; 1981). A local study conducted by De Klerk and Young (2012) among undergraduate students focusing on their drinking behaviour found that half of the students were drinking safely, a third were drinking dangerously, and the rest of the population (18.4%) were drinking at levels considered detrimental with many of the participants possibly dependent on alcohol. Du Preez, Pentz, and Lategan's (2016) study among undergraduate and postgraduate South African students echoed the findings of De Klerk and Young (2012). Results indicated that 18.78% of students practiced binge drinking behaviour as alcohol use among students are widely associated with relieving the symptoms of stress (McConnachie, 2019). A study of alcohol consumption by students during the pandemic, a period of unusual academic and other forms of stress and reduced opportunities for drinking, is a significant contribution to the research literature (Young & De Klerk, 2009).

Historically, measures to assess students' mental health have tended to be single domain instruments such as the Beck Depression Inventory (BDI) and the Alcohol Use Disorders Identification Test AUDIT measure (Babor, et al., 2001). The Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62) was therefore developed as a multidimensional,

comprehensive, concise, and practical assessment tool to assess university students' mental health (Locke et al., 2011; McAleavy et al., 2012). The CCAPS-62 is a multidimensional instrument made up of 8 subscales measuring psychological symptoms and distress among university students, including a general measure of distress, the Distress Index (DI) (Locke et al., 2011; McAleavy et al., 2012). The eight subscales include; Depression, Generalised Anxiety, Social Anxiety, Academic distress, Eating concerns, Family distress, Hostility, and Substance use (Locke et al., 2011). While this comprehensive instrument is widely used in the US and in other countries, the CCAPS-62 has not yet been adopted in South Africa.

The aims of the present study therefore include the following: (1) To compare the mean, standard deviations, and Cronbach alpha scores of the 8 CCAPS-62 subscale scores calculated for the Rhodes University student sample with the reported US normative scores. Additionally, the study will explore the performance of the CCAPS-62 substance use subscale by (2) calculating the correlation with the established AUDIT measure and (3) comparing the group differences for the CCAPS-62 substance use subscale and AUDIT. The benefits of surveying alcohol consumption during a period of reduced access to alcohol and limited access to campus gives a useful baseline of drinking behaviour without the many campus factors that support and encourage student drinking.

Method

Undergraduate students who had not withheld permission to receive such invitations were invited to participate in the study. Emails were sent to all prospective participants detailing the scope of the study as well as providing a link to the demographic questionnaire and the survey questionnaire via SurveyMonkey, an online survey service. Prospective participants were

provided with two hyperlinks from which they could choose; one allowing the participants to opt out and one which proceeded to the survey and confirmed consent. In addition to a variety of demographic and other items, the AUDIT and CCAPS-62 measures were included in the survey. After completing the survey, the data was automatically captured on a database and extracted for analysis. Data was collected over a ten-day period in July 2020.

Participants

Participants were undergraduate students from Rhodes University. Emails were sent to 3878 undergraduate students: of these, 1015 accessed and completed the survey, and of those a final sample of 930 (24%) participants completed most or all of the survey items. Of this sample, 622 identified their gender as female (67%), 243 as male (26%), and 63 as non-binary gender (7%). Participants included 803 black students; including African, Coloured, and Indian (86%) and 127 white students (14%), as well as 394 first years (42%), 260 second years (28%), 215 third years (23%), and 61 fourth years (7%). The mean and median age of participants was 20 years.

Measures

The online survey included various demographic items of the AUDIT and CCAPS-62 measures (McAleavy et al., 2012). The Alcohol Use Identification Test (AUDIT) was developed by the World Health Organisation (WHO) in order to detect risky or harmful alcohol consumption as well as well as alcohol dependence and abuse (Allen, Litten, Fertig, & Barbor, 1997; Babor, La Fuente, Saunders, & Grant, 1992; Conigrave & Saunders, 1995; De Meneses-Gaya, Zuardi, Loureiro, & Crippa, 2009; Saunders, Aasland, Barbor, De La Fuente, & Grant, 1993). Several

research studies have recently measured its usefulness in a variety of healthcare and community settings including university counselling centres in both developed and developing countries (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Young & Mayson, 2010). The AUDIT comprises of 10-items which assess the amount and frequency of alcohol intake (items 1-3), alcohol dependence (items 4-6), and problems related to alcohol consumption (items 7-10) (De Meneses-Gaya, Zuardi, Loureiro, & Crippa, 2009; Shevlin & Smith, 2007). Scores range from 0-40 with a maximum cut-off score of 8 which identifies potentially hazardous alcohol intake. Many studies identified the validity of the AUDIT (see also Adewuya, 2005; Bradley et al., 2003; Dawson, Grant, & Stinson, 2005a; Dybek et al., 2006; Gache et al., 2005; Knight, Sherritt, Harris, Gates, & Chang, 2003; Pal, Jena, & Yadav, 2004; Pérula et al., 2005) and recently research has indicated the need for different cut-off scores for males and females (Reinert & Allen, 2002; 2007). Research conducted worldwide has indicated that the AUDIT has good test-retest reliability and concurrent construct validity among adult and student populations ascribing to different cultural groups (De Meneses-Gaya, Zuardi, Loureiro, & Crippa, 2009; Kokotailo et al., 2004; Reinert & Allen, 2007; Verhoog et al., 2019).

The Counselling Center Assessment for Psychological Symptoms-62 (CCAPS-62) was initially developed and designed as a multidimensional instrument to measure psychological stressors among American university students (Locke et al., 2011; McAleavy et al., 2012; Youn et al., 2015). The measure comprises of 8 subscales; including Depression, Generalised Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Family Distress, and Substance Use, which together gives an overall composite score for the General Distress Index (Locke et al., 2011). The Substance Use subscale is the focus of this research. Though it is called the Substance Use subscale, 5 of the 6 items refer to alcohol or drinking.

Two preliminary versions of the CCAPS were developed. The first consisted of 101-items which was shortly followed by a 70-item version. Preliminary studies focusing on the development of the CCAPS was used on a national sample of more than 22,000 American students resulting in the 62-item version used currently. These studies concluded the reliability of the CCAPS subscales across varying identity groups, ultimately establishing its validity among diverse groups establishing evidence for test-retest reliability and consistent construct validity (Locke et al., 2011).

Data analysis

Collected data was analyzed using the MedCalc version 20; and Statistica version 14. Descriptive and inferential statistics were calculated. Student t-tests and one-way analysis of variance were used to compare mean scores. Chi-square analysis was used to compare group frequencies. Cronbach's alpha was calculated to measure the internal consistency of the two main measures.

Ethics

Data collection began once permission was granted by the Rhodes University Ethical Standards Committee (RUESC, See Appendix) and the Academic Registrar. Participants indicated consent, they were free to decline to participate in the study, and their privacy was protected through confidentiality and anonymity.

Results

Descriptive and inferential statistics

Table 1 below reports the means, standard deviations, and Cronbach alphas for the Rhodes University sample and the US normative sample. Student t-tests are calculated using the reported summary scores for each of the subscales, while the Cohen's d scores are the effect sizes of the differences between the mean scores (the rule of thumb is that 0.2 is regarded as a small difference, 0.5 a medium difference and 0.8 a large one).

Table 1. Comparison between Rhodes University Student data and the US normative data

RU Data					Published Normative Data				Differences	
Subscale	n	Mean	SD	Internal Consistency (alpha)	n	Mean	SD	Internal Consistemcy (alpha)	p <	Cohen's d
Distress Index	930	1,91	0,92	n/a	142560	n/a	n/a	n/a		
Depression	930	1,79	1,00	0,92	142560	1,56	0,94	0,92	0,01	0,242
Generalized Anxiety	930	1,92	1,00	0,87	142560	1,63	0,94	0,85	0,01	0,301
Social Anxiety	930	2,15	0,86	0,81	142560	1,84	0,96	0,84	0,01	0,341
Academic Distress	930	2,36	0,99	0,81	142560	1,83	1,02	0,82	0,01	0,525
Eating Concerns	930	1,29	0,89	0,82	142560	0,98	0,87	0,89	0,01	0,346
Family Distress	930	1,53	0,98	0,80	142560	1,28	0,96	0,83	0,01	0,256
Hostility	930	1,35	0,98	0,83	142560	0,99	0,86	0,86	0,01	0,395
Substance Use	930	0,62	0,81	0,81	142560	0,74	0,85	0,85	0,01	-0,145

There was a significant positive correlation between the CCAPS-62 substance use subscale and the AUDIT ($r = 0.80$, $n = 930$, $p < 0.01$).

Table 2 reports the descriptive statistics between the groups for each of the CCAPS-62 substance use subscale and AUDIT. The differences in means for the groups are calculated by student t-test for bivariate group means and by one-way analysis of variance for multivariate group means.

Table 2. Descriptive statistics for alcohol abuse according to groups

	CCAPS Substance Abuse Subscale				AUDIT			
	n	Mean	SD	p	n	Mean	SD	p
Non-Binary gender orientation	5	0,15	0,34	-	6	4,00	3,41	-
Male	243	0,74	0,85		250	4,88	5,71	
Female	620	0,56	0,77	0,00	646	4,06	5,15	0,04
Black	803	0,59	0,79		836	4,15	5,42	
White	127	0,80	0,86	0,01	127	5,80	5,21	0,00
First-generation student	313	0,54	0,80		326	3,72	5,21	
Not a first-generation student	617	0,66	0,80	0,03	637	4,70	5,50	0,01
NSFAS funded	465	0,55	0,75		489	3,91	5,33	
Other funded	464	0,69	0,85	0,01	473	4,85	5,48	0,01
Lockdown accommodation with parents / guardians	711	0,59	0,80		739	4,10	5,34	
Independent lockdown accommodation	219	0,71	0,82	0,07	224	5,26	5,60	0,01
Year 1	394	0,48	0,74		415	3,23	4,65	
Year 2	260	0,72	0,85		263	4,98	5,87	
Year 3	215	0,65	0,75		224	4,95	5,08	
Year 4	61	0,98	1,00	< 0.01	61	7,38	7,35	< 0.01
First language is the language of instruction	270	0,67	0,82		275	4,76	5,28	
First language is not the language of instruction	625	0,58	0,78	0,15	652	4,10	5,41	0,09

Table 2 reports descriptive statistics for alcohol abuse for the various groups. Students who identified as male reported a statistically higher mean score than those students who identified as female, those who identified as non-binary gender constituted to small a group for meaningful statistical comparison. Black students reported a statistically lower mean score relating to alcohol abuse, whereas white students reported a statistically higher mean score relating to alcohol abuse, which was the same as previous literature conducted among student populations. First generation students reported a statistically lower mean score relating to alcohol abuse thus consuming less

alcohol than non-first-generation students. Furthermore, students who reported receiving financial assistance from NSFAS showed a statistically lower mean score than those who received financial funding from other avenues. Students who returned to their familial home during lockdown reported a statistically significant lower mean score relating to alcohol abuse than students who lived independently during the lockdown period. First year students reported a statistically significant lower score relating to alcohol abuse than second, third, and fourth years. This could be since they have not yet been introduced and learned to become accustomed to "campus life". Due to the COVID-19 pandemic outbreak many first-year students were unable to fully experience specific rites of passage. Although statistics for the various groups indicate high alcohol usage among students the pandemic has played a significant role in the reduction of alcohol consumption as many campuses closed during lockdown and many students had to return home. Data were collected during the lockdown period when the South African government banned the sale of alcohol. Students were unable to attend gatherings or outings with their friends nor consume or purchase alcohol as they normally would.

Finally, Table 3 reports the proportions who score below (low), between (mild) and above (elevated) the substance use cut-off scores (0.64 and 1.10) for race, gender, and the total sample. Differences in the proportions for race and gender are calculated by chi-squared tests. Again, white and male students are statistically overrepresented in the elevated categories.

Table 3. CCAPS-62 Substance Use subscale by Race and Gender

	Low		Medium		Elevated		p
	n	%	n	%	n	%	
Black	567	71%	118	15%	118	15%	
White	75	59%	22	17%	30	24%	0,02
Women	452	73%	85	14%	85	14%	
Men	150	62%	44	18%	49	20%	0,01
Total	642	69%	140	15%	148	16%	

Discussion

The present study aimed to profile Rhodes University students' alcohol use/abuse during the lockdown period instituted by the South African government during the COVID-19 pandemic by comparing the scores from the AUDIT and the CCAPS-62 substance abuse subscale.

The internal consistency as measured by Cronbach alpha for each of the CCAPS-62 subscale scores for the Rhodes University sample are very similar to the US normative data, suggesting that the measure can tentatively be assumed to be reliable in this context. The comparison of the Rhodes University student sample mean scores with the US norms indicates that the Rhodes University scored statistically significantly higher on all of the subscales with the exception of the substance use subscale. The most likely explanation is that the Rhodes University scores are elevated as a result of the stress and uncertainty of the COVID-19 pandemic. Additionally, the proportions of students who exceed the higher drinking clinical cut-off scores are relatively small, offering further support for the finding that drinking appears to be significantly lower than would otherwise have been expected. The exception is the result of the fact that the South African government has restricted the sale of alcohol, which has reduced alcohol consumption in the general population (Biddle et al., 2020; Rall, 2021) and most likely in the student population. Additionally, with the lockdown, most students had returned home and removed from the campus drinking influences. The result, therefore, is that while the Rhodes University students may have been unusually distressed as a result of the lockdown, their drinking may have been unusually lower than usual.

With regards to the specific performance of the substance abuse subscale, the scores correlate highly with the well-established psychometrically sound AUDIT measure, which further supports the validity of the CCAPS-62 subscale. Similarly, both the AUDIT and

CCAPS-62 show statistically significant differences where expected, suggesting again that the CCAPS-62 substance use subscale contains fewer items than the AUDIT does.

As reported previously in this context, male students continue to drink more than female students do, while white students drink more than black students do. First-generation students drink at lower rates than those who have a family history of university attendance. While this may well reflect financial disparities, it could also be that first-generation students do not have the social capital of other students which puts them at greater academic risk and they therefore cannot risk participating in the university drinking culture as many other students do (see Young & Mayson, 2010). Furthermore, they are less likely to have been exposed to student drinking expectations than other students.

Students in receipt of national funding drink less than those who are not, which is probably a factor of limited financial opportunity to participate in the established drinking practices at Rhodes University. Prior research has shown that disposable income correlates with alcohol consumption (Lategan, Du Preez, & Pentz, 2017; Young & De Klerk, 2012).

Finally, first-year students report the lowest average substance use scores while fourth year students report the highest scores. Senior students have already been indoctrinated into the campus drinking norms, while first-year students have not, especially since their attendance on campus was a relatively short one before most had to return home and participate in online learning with the start of the lockdown period.

Limitations of the study

A noteworthy limitation of the study would be that data was collected during the COVID-19 pandemic, when many students returned to their familial home as campus life ceased to exist due to the period of lockdown. Consequently, the results underestimate normal student drinking behavior; however, this study offers a useful baseline of drinking without the

many factors that support and encourage student drinking. Additionally, many students were therefore unable to access the questionnaire as the sample and data collection was reliant on online participation. Sample bias occurred as students who were possibly most distressed, and disadvantaged were unrepresented as they were unable to complete the questionnaire due to limited or no resources. Finally, a survey that measures drinking on a single time point is not able to show the way in which drinking behavior changes over time.

Future recommendations

Data collected suggests that the multidimensional assessment tool, CCAPS-62 may very well yield significant results among the student population. Expansive research conducted among the student population, assessing their mental health, could contribute to the reliability and validity of the measure in our multicultural and multilingual context.

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