

Differences

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Highlights

1. Findings of several personal variables predicting alcohol use
2. High narcissism, low conscientiousness, high excitement values and high Energetic & Rhythmic music preference predicts alcohol use
3. Neuroticism, agreeableness and Intense & Rebellious music dimension did not predict alcohol use or misuse.

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1. Introduction

There are several problems related to alcohol abuse worldwide, such as increased risk for sexual transmitted infections, like HIV (Kalichman, Simbayi, Kaufman, Cain & Jooste, 2007) or psychiatric syndromes (Shivani, Goldsmith, & Anthenelli, 2002). In this sense, numerous researchers have developed investigations to explore predictors of alcohol use or misuse (Andrew & Cronin, 1997; Borsari, Murphy & Barnett, 2007; Guo, Hawkins, Hill, & Abbott, 2001; Yeh & Chiang, 2005). This

intent can be useful to better understand of the drinking abuse behavior and, consequently, to prevent and control it. Our research aims to explain alcohol use and misuse through personality traits (Dark Triad and Big Five), human values and music preference.

1.1. Dark Triad and alcohol use

The Dark Triad (DT) is a recent model that focuses on the dark side of personality, comprising for Machiavellianism and subclinical psychopathy and narcissism (Paulhus & Williams, 2002). The DT has been used to understand impulsive risk behaviors, such as gambling, sexual risk behavior, and substance abuse (Crysel, Crosier, & Webster, 2013; Jones, 2013; Kraljević, 2014). Specifically, people with high scores in DT have difficulties delaying gratification; as substance use can enable the user experience rewards (e.g., euphoria and positive affect), individual differences in these personality traits may predispose individuals to consumption (Stenason & Vernon, 2016).

Some research showed positive correlations between alcohol use and narcissism (Luhtanen & Croker, 2005) and psychopathy (LaLiberte & GreKin, 2015; Smith & Newman, 1990). These traits shared the impulsivity portion of DT. On the other hand, Machiavellianism seems to have no significant relationship with substance use, besides being the dark trait with weaker association with the alcohol use (Jonason, Koenig & Tost, 2010; Stenason & Vernon, 2016) - perhaps due to the Machiavellians being less impulsive (Jones & Paulhus, 2011) in comparison to individuals more guided by the other dark traits. Nevertheless, it is necessary more empirical research to understand the link between DT and alcohol.

1.2. Big Five and alcohol use

The Big Five is another personality model relevant to understand the alcohol use. Researchers showed significant correlations between alcohol use and personality

traits, as for example, positive with neuroticism and negative with conscientiousness and agreeableness (Martin & Sher, 1994; Paunonen, 2003). Yet, it was verified high levels of neuroticism predicting alcohol use and problems related to it. Besides, low levels of conscientiousness and agreeableness predicted alcohol use and misuse and the extraversion facet of excitement-seeking predicted higher levels of alcohol use and misuse (Ruiz, Pincus, & Dickinson, 2003). Furthermore, a meta-analysis with 20 studies, 119 effect sizes and 7.886 participants support these relations, finding alcohol use related to high neuroticism, low conscientiousness and low agreeableness (Malouff, Thorsteinsson, Rooke, & Schutte, 2007).

1.3. Human values and alcohol use

Human values is also a construct that helps to understand drug use (Coelho Júnior, 2001; Ludwig & Pittman, 1999; Pimentel, Gouveia, Medeiros, Santos & Fonseca, 2011; Tamayo, Nicaretta, Ribeiro & Barbosa, 1995). With Schwartz's theory of values, for example, it has been verified a negative correlation between conformism values and drug use (Tamayo et al., 1995).

In this sense, it was observed a positive correlation with excitement values and drug use as well as a negative correlation with normative values (Coelho Júnior, 2001), according to Gouveia's Functional Theory (Gouveia, Milfont, & Guerra, 2014). Apart from, some authors showed positive correlations between excitement values and alcohol use, and negative correlations with normative values (Chaves, 2006; Medeiros, Pimentel, Monteiro, Gouveia, & Medeiros, 2015). Once more, there is very little research on these relations.

1.4. Music preference and alcohol use

Music is also related to drugs (Arnett, 1991, 1992; Pimentel, Gouveia, & Vasconcelos, 2005) and alcohol use or misuse (Mulder et al., 2009, 2010; ter Bogt et al., 2012). Some research has shown that the preference for anti-conventional musical

genres correlates with alcohol consumption (Chen, Miller, Grube, & Waiters, 2006; Mulder et al., 2009, 2010). In fact, it was verified that listening to rap, techno, and reggae music is also correlated with alcohol use, including heavy consumption (Chen et al., 2006). In some of these lyrics, the alcohol use is commonly mentioned, specifically in urban music genres (e.g., rap, hip-hop; Hardcastle, Hughes, Sharples, & Bellis, 2015).

Furthermore, regarding a large sample of seven thousand adolescents in Holland, it was found positive correlations with several youth music genres preference, such as punk, techno, and reggae with higher substance use, considering alcohol. On the other hand, it was verified a negative correlation between classical and pop music preferences with alcohol use (Mulder et al., 2009). Moreover, it was identified a negative correlation between pop music, jazz and classical music preference with substance use (including alcohol), and a positive correlation between dance music (house and techno) and rock (rock, heavy metal, punk and gothic) with substance use, such as alcohol (ter Bogt et al., 2012).

1.5. Current Study

In sum, it is clear that the use and abuse of alcohol can be explained when considering a large number of variables. Among the individual predictors, we observed that research has focused on the role of the Big Five factors on alcohol use. On this occasion, the purpose is to verify personal predictors of alcohol use and misuse, focusing on the dark side of personality, human values and musical preference, controlling for the Big Five factors.

Method

2.1. Participants and procedure

Participants were 264 individuals ($M_{age} = 22.0$, $SD = 6.42$; 76.4% women). The data was collected through paper and pencil questionnaires ($N = 225$ undergraduates of

a north-eastern Brazilian public university in João Pessoa, Paraíba) and online (N = 39 persons). Prior to this questionnaire administration, the students were informed about the research purposes, whose participation was voluntary and anonymous.

1.2. Measures

Dark Triad was assessed with the 12-items Dirty Dozen (Jonason & Webster, 2010). Therefore, participants ought to answer according to their agreement level (1 = *Strongly disagree*; 5 = *Strongly agree*) about items such as “I tend to seek prestige or status” (narcissism), “I have used flattery to get my way” (Machiavellianism) and “I tend to be unconcerned with the morality of my actions” (psychopathy). In the present research, we observed the following reliabilities: narcissism ($\alpha = .85$), Machiavellianism ($\alpha = .81$), psychopathy ($\alpha = .73$).

Big Five Inventory (BFI; John, Donahue, & Kentle, 1991) it is one of the most popular measures for the Big Five model. We used a short version with 20 items, following the best items showed by Schmitt et al. (2007). Participants indicated their agreement level (1 = *Strongly disagree*; 5 = *Strongly agree*) about items such as “Is full of energy” (Extroversion), “Worries a lot” (Neuroticism), “Is considerate and kind to almost everyone” (Agreeableness), “Is ingenious, a deep thinker” (Openness), “Does a thorough job” (Conscientiousness). Regarding the reliabilities, we found: Extroversion ($\alpha = .77$), Conscientiousness ($\alpha = .72$), Openness ($\alpha = .72$), Agreeableness ($\alpha = .63$) and Neuroticism ($\alpha = .78$).

Human Values was assessed with Basic Values Survey (BVS; Gouveia, Milfont, Fischer, & Santos, 2008). These measure evaluate the value priorities through 18 specific values, which are distributed in six factors or value subfunctions. The participant indicates the degree of importance (1 = *Totally not important*; 7 = *Extremely important*) taking by those values as a guiding principle in their lives, such as “Emotion. Enjoy life challenge the danger; seek adventures” (Excitement) and “Obedience. Do

your duties and daily responsibilities; respect the elderly and parents” (Normative). As far as reliabilities are concerned: excitement ($\alpha = .58$), promotion ($\alpha = .60$), suprapersonal ($\alpha = .54$), existence ($\alpha = .61$), interactive ($\alpha = .67$) and normative ($\alpha = .69$).

Short Test Of Music Preference (STOMP, Rentfrow & Gosling, 2003) was used to measure music preference. Participants are instructed to estimate their music preference (1 = *Strongly dislike*; 7 = *Strongly like*) to 14 music genres, for instance, Classical Music (Reflexive & Complex); Heavy Metal (Intense & Rebellious); Religious (Upbeat & Conventional) and Dance (Energetic & Rhythmic). In this case, the following reliabilities were verified: Reflexive & Complex ($\alpha = .72$), Intense & Rebellious ($\alpha = .62$), Upbeat & Conventional ($\alpha = .39$) and Energetic & Rhythmic ($\alpha = .70$).

CAGE (Ewing & Rouse, 1970) was used to estimate alcohol misuse. This measure is composed of for dichotomous items (Yes or No), as in “Have you ever felt bad or Guilty about your drinking?”, “Have people Annoyed you by criticizing your drinking?”. In this occasion, we observed the following reliability: KR-20 = .52.

Single-item of alcohol consumption was used to measure the frequency of alcohol use or consumption, varying from 0 (*never*) to 4 (*4 times or more a week*).

Finally, the participants were requested to answer demographic questions, in order to profile the sample and Informed Consent, according to APA ethical principles.

2. Results

The zero order correlations are presented in Table 1. Both Machiavellianism and narcissism presented positive correlations with the use and misuse of alcohol.

Psychopathy presented a positive correlation with the alcohol misuse and a marginally positive correlation with the alcohol consumption. Regarding the Big Five model, the alcohol use presented negative correlations with conscientiousness and agreeableness

traits. In contrast, both alcohol use and misuse presented a positive correlation with neuroticism.

Considering the human values correlates, the alcohol use presented a positive correlation with the excitement subfunction and negative correlations with the normative and interactive subfunctions. Regarding the alcohol misuse, it presented significant and positive correlations with the subfunctions promotion and suprapersonal. Considering the music preference factors, it was detected a positive correlation between Intense & Rebellious with alcohol consumption. Also, Energetic & Rhythmic was related with alcohol use and misuse. Finally, there was a marginally positive correlation between Reflective & Complex with alcohol use.

Insert Table 1

After the correlational analysis, we did hierarchical regression analysis. In the first model, demographic variables (gender and age) and personality traits (Big Five and Dark Triad) explained 11% of the variability in the use of alcohol. After including human values in the second regression step, the explained variance went up to 21%, being this addition statistically significant [$F(16) = 3,661, p < 0,001$]. Finally, with personality traits and demographic variables in the first step and human values in the second, the music preference factors were added in the third step. Results showed a statistically significant 24% of alcohol use variance [$F(20) = 3,39, p < 0,01$].

These steps were repeated to predict alcohol misuse. In the first step, we entered the demographic variables and personality traits which explain 6% of CAGE score. While in the second step, with the inclusion of human values, the explained variance went up to 9%, -not a statistically significant increase. At last, when the music preference factors were inserted in the third step, the explained variance went up to 11%, which was also not statistically significant.

Insert Table 2

3. Discussion

3.1. Findings of present research

The present research aimed to verify associations between alcohol use and misuse with Dark Triad, Big Five, human values and music preference. In this sense, we verified several predictors of alcohol use and misuse, adding a contribution to empirical research.

Narcissism was a positive predictor of alcohol use, controlled by the Big Five personality traits, gender, age, human values and music preference. Although the result is aligned with previous research (Luhtanen & Croker, 2005), it adds a significant different set of controllers. For the narcissists, the use of alcohol is probably one more way to get noticed by the public. Also, the alcohol effects engage the narcissistic behavior.

Furthermore, it was observed that high levels of conscientiousness explained lower levels of alcohol use, corroborating several studies (Malouff et al., 2007; Martin & Sher, 1994; Paunonen, 2003; Ruiz et al., 2003). The conscientiousness individual is responsible in their day-by-day environment (e.g., school, work), and the abuse of alcohol is considered a counter-productive behavior, affecting the development of his\her activities. Thus, it is natural that these individuals use less alcohol.

Notwithstanding, in contrast with previous findings, neither high neuroticism nor low agreeableness predicted alcohol use (Malouff et al., 2007).

Regarding human values, the excitement subfunction showed the strongest predictive role on alcohol use of all, confirming previous research (Chaves, 2006; Medeiros et al., 2015). According to the functional theory of human values, individuals guided by this subfunction are more likely to pursue adventures, being more related to emotions and antisocial behavior, which can be found when using substances such as

alcohol and drugs (Gouveia, 2013). Yet, normative values showed only a marginal significance for predicting alcohol use, contrary to our expectations and, surprisingly, the suprapersonal values predicted alcohol misuse.

Finally, the Energetic & Rhythmic dimension of music preference (soul/funk and rap/hip hop) showed its predictive role on alcohol use and misuse, supporting previous findings (Chen et al., 2006; ter Bogt et al., 2012). Besides, in the lyrics from these music genres, like rap, alcohol is commonly mentioned (Primack, Nuzzo, Rice, & Sargent, 2012). Therefore, according to the social cognitive theory, these mentions to the use of alcohol in the lyrics can influence the behavior of those who consume this type of music (Mulder et al., 2010). Contradicting our expectations (Arnett, 1991, 1992), Intense & Rebellious music dimension did not predict the alcohol use or misuse.

3.2 Limitations and future research

Despite the validity of the aforementioned findings, our study has some limitations. First of all, we relied exclusively on self-report measures. Although the majority of studies in personality research are based on these kinds of measures, participants' answers might be imprecise. In addition, our sample was non-probabilistic, not allowing the generalization of present findings. Besides, the reliabilities of some sub-scales were low (excitement, $\alpha = .58$) or very low (Upbeat & Conventional, $\alpha = .39$). Future research should overcome these limitations. Likewise, new studies with different kinds of measurements are suggested, as well as implicit association tests, direct observations or physiological measurements. Moreover, it is important to provide cross-cultural evidence of the present predictors and investigate if these predictors are useful to explain other types of substance, such as marijuana, ecstasy or LSD.

3.2. Conclusions

In sum, our results showed several significant predictors of alcohol use. Indeed, it was observed the importance of the Dark Triad, Big Five personality traits, human

values and music preference to a better understanding of alcohol use and misuse. Based on our results, we can draw an alcohol-user picture. This picture consists of high levels of narcissism and excitement values, low levels of conscientiousness and preference for dance music, soul/funk and rap/hip hop.

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Table 1
Correlations among the variables of this research.

	Alcohol use	Alcohol misuse
Dark Triad		
Machiavellianism	0.15**	0.21**
Psychopathy	0.10 [†]	0.16**
Narcissism	0.23**	0.24**
Big Five		
Openness	-0.07	0.005
Conscientiousness	-0.20**	-0.09
Extraversion	-0.07	-0.01
Agreeableness	-0.14**	-0.01
Neuroticism	0.11*	0.13*
Values		
Excitement	0.18**	0.06
Promotion	-0.02	0.14*
Suprapersonal	-0.03	0.15*
Existence	-0.02	-0.04
Interactive	-0.12*	0.04
Normative	-0.28**	-0.04
Music Preference		
Reflexive & Complex	0.10 [†]	-0.04
Intense & Rebellious	0.21**	0.04
Upbeat & Conventional	-0.04	-0.02
Energetic & Rhythmic	0.27**	0.16**

** $p < 0.01$; * $p < 0.05$; [†] $p \leq 0.06$

Table 2

Predictors of alcohol use and misuse.

Predictors	Alcohol use (Alcohol misuse)		
	Step 1	Step 2	Step 3
Gender	-0.11 (-0.04)	-0.08 (-0.05)	-0.08 (-0.06)
Age	0.11 (-0.04)	0.12 [†] (-0.02)	0.16* (0.01)
Machiavellianism	-0.10 (0.01)	-0.09 (0.00)	-0.06 (0.01)
Psychopathy	-0.03 (0.10)	-0.05 (0.13)	-0.07 (0.11)
Narcissism	0.20* (0.13)	0.24** (0.10)	0.18 [†] (0.06)
Openness	-0.03 (-0.01)	-0.05 (-0.03)	-0.07 (-0.04)
Conscientiousness	-0.16* (-0.03)	-0.18* (-0.06)	-0.16* (-0.03)
Extraversion	0.04 (-0.01)	0.09 (-0.03)	0.07 (-0.06)
Agreeableness	-0.12 (0.05)	-0.08 (0.05)	-0.06 (0.05)
Neuroticism	0.10 (0.07)	0.06 (0.07)	0.07 (0.09)
Excitement		0.32** (-0.05)	0.28** (-0.08)
Promotion		-0.17* (0.05)	-0.14 (0.06)
Suprapersonal		-0.04 (0.15 [†])	-0.11 (0.18*)
Existence		0.10 (0.00)	0.05 (-0.05)
Interactive		-0.14 (0.07)	-0.12 (0.07)
Normative		-0.13 [†] (0.00)	-0.12 (0.01)
Reflexive & Complex			-0.10 (-0.11)
Intense & Rebellious			0.10 (0.00)
Upbeat & Conventional			0.00 (-0.02)
Energetic & Rhythmic			0.16* (0.17*)

** $p < 0.01$; * $p < 0.05$; [†] $p < 0.1$