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MUSIC PREFERENCE AND ATTITUDES TOWARD DRUGS USE: THE MODERATING ROLE OF HUMAN VALUES

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ABSTRACT
Music has a fundamental importance in people's lives, and preference for certain music genres has been associated to substance abuse and favorable attitudes toward drug use. We replicate previous findings by showing that greater preference for alternative music (rap, heavy metal, punk, reggae, rock, and electronic) was positively associated to favorable attitudes toward use of alcohol, marijuana and other drugs. Extending past research, we examined whether human values moderate the observed music–drug link. Participants were 269 Brazilian undergraduate students with a mean age of 21 years, mostly female (65.8%). They answered the *Alternative Music Scale*, *Attitudes toward Drugs Use Scales* (Alcohol, Marijuana and Other Drugs), *Basic Values Survey*, and demographic questions. Results indicated that the correlations between alternative music preference and favorable attitudes toward drug use were stronger among students who placed less emphasis on normative values (e.g., obedience, tradition). Normative considerations are thus important when examining associations between alternative music preference and attitudes toward drug use.

Keywords
music preference; drug use; attitudes; values.

RESUMO
A música tem uma importância fundamental na vida das pessoas, e preferência por determinados estilos de música tem se relacionado com o abuso de substância e atitudes favoráveis frente ao uso. Replicaram-se achados prévios mostrando que preferência por música alternativa (*rap*, *heavy metal*, *punk*, *reggae*, *rock* e eletrônica) tem correlação positiva com atitudes favoráveis frente ao uso de álcool, maconha e outras drogas. Estendendo pesquisas anteriores, nós examinamos se os valores humanos podem moderar esta relação entre música e drogas. Participaram do estudo 269 estudantes universitários brasileiros com média de idade de 21 anos, majoritariamente mulheres (65,8%). Estes responderam a *Escala de Música Alternativa*, a *Escalas de Atitudes frente ao Uso de Drogas (Alcool, Maconha e Outras Drogas)*, o *Questionário dos Valores Básicos* e perguntas demográficas. Os resultados indicaram que as correlações entre música alternativa e atitudes favoráveis ao uso de drogas foram mais fortes em estudantes que dão menos ênfase a valores normativos (e.g., obediência, tradição). Considerações normativas são portanto importantes quando se examinam associações entre preferência musical e atitudes em relação ao uso de drogas.

Palavras-chave
preferência musical; uso de drogas; atitudes; valores.

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PREFERENCIA MUSICAL Y ACTITUDES HACIA USO DE DROGAS:
EL PAPEL MODERADOR DE LOS VALORES HUMANOS

Music has a fundamental importance in people's lives. It is relevant for the creation, maintenance, and expression of cultural and national identities (Boer et al., 2013; Ferguson et al., 2016), explains lifestyles, such as number of friends and sexual partners and voting preferences (North & Hargreaves, 2007), and reveals particular personality traits. For instance, individuals open to experience prefer intense and rebellious music (e.g., rock), whereas these individuals dislike upbeat and conventional types of music (e.g., pop music) (Langmeyer, Guglhör-Rudan, & Tarnai, 2012). Adolescents with a preference for heavy metal or rock music show more reckless behavior (e.g., drink-driving, unprotected sex, vandalism) than those with a preference for other music genres (Baker & Bor, 2008). Moreover, music preference can be an important factor in explaining substance use among adolescents (ter Bogt et al., 2012).

Music Preference, Values and Drug

Drug use is directly linked to the history of rock and pop music, often leading to the death of artists (Friedlander, 1996). Recent examples include the drug-related deaths of Amy Winehouse in the UK and Chorão in Brazil. The links between drug use and music preference is not confined to artists but also music lovers. Research has shown that drug use is more pronounced among individuals who prefer alternative music genres, such as heavy metal and reggae compare, than those who prefer mainstream music genres (e.g., Arnett, 1991; Baker & Bor, 2008; Chen et al., 2006; Mulder et al., 2009, 2010; ter Bogt et al., 2012). To illustrate, Arnett (1991) observed more drug use among US adolescents who preferred heavy metal compared to adolescents who did not like this music genre. Similar findings were observed with Dutch adolescents, with more substance use among those who preferred punk/hardcore, techno/hardhouse and reggae compared to those who preferred classical and pop music (Mulder et al., 2009). Another study with adolescents from ten European countries also observed a positive relationship between substance use and preference for rock (rock, heavy metal, punk, and gothic) and dance music (house and techno) (ter Bogt et al., 2012).

The research reviewed above examined substance use behavior, and other studies have demonstrated that attitudes toward substance use predicts use of licit and illicit substances (see, e.g., Gouveia, Pimentel, Medeiros, Gouveia & Palmeira, 2007; Petraits et al., 1995; Simons & Carey, 2000; Simons & Gaher, 2004). However, overt and direct questions on drug use might be sensitive, and adolescents might underreport their drug taken experiences. As a result, researchers have preferred to measure overall attitudes toward drug use as a proxy behavioral measure (e.g., Hawkins, Catalano, & Miller, 1992; Petraits, Flay, & Miller, 1995; Simons & Carey, 1998, 2000), a strategy adopted in the present study. Notably, previous studies have also observed a positive correlation between preference for certain music genres and attitudes toward drug use. For instance, Pimentel, Gouveia, and Vasconcelos (2005), observed that preference for unconventional music genres (i.e., rap, punk, heavy metal, and reggae) among 548 Brazilian adolescents (M_{age} = 16.2; 54.9% female) was positively correlated with favorable attitudes toward marijuana use ($r = 0.27$, $p < 0.001$).

Related research has examined the associations between human values and drug use or attitudes towards drug use (e.g., Ludwig & Pittman, 1999; Pimentel et al., 2011; Tamayo et al., 1995). These studies have shown that greater drug use or more favorable attitudes toward drug use is observed among individuals who give priority to values related to openness to experience (e.g., excitement, stimulation) compared to those who give priority to values related to stability and conservation (e.g., obedience, pro-sociality).

In brief, the extant literature has shown a positive association between preferences for alternative music genres and drug use or favorable attitudes toward drug use, while at the same time showing a positive association between endorsement of openness-to-experience values and attitudes/behavior related to substance use. We therefore expected that endorsement of certain human values would moderate the observed music–drug link. In particular, and drawing from the functional theory of human values (Gouveia, Milfont, & Guerra, 2014a), we predicted that excitement values would enhance the music–drug link while normative values would weaken this link.

The Functional Theory of Values

The functional perspective in attitudes is relatively common (Maio & Olson, 2000), but less attention has been given to values functions (Allen, Ng, & Wilson, 2002). However, it is possible to identify two major functions values fulfil: values guide actions (Rokeach, 1973) and give expression to needs (Maslow, 1954). Taking into account these functions, Gouveia and his colleagues (Ardila et al., 2012; Fischer et al., 2011; Gouveia, 2003, 2013; Gouveia et al, 2014a) have proposed two functional value dimensions. The first outlines 'circles of goals' based on the type of orientation values serve when guiding behaviour (personal, central or social goals). Personal values are intrapersonal in focus, whereas social values are interpersonal in focus. Central values are located between social and personal values because central values are congruent with both social and personal goals. The second functional dimension outlines 'levels of needs' based on the type of motivator values

serve when cognitively representing human needs (materialistic or thriving needs). Materialistic values are related to practical ideas and orientation toward specific goals and normative rules, while humanitarian values express thriving needs and reveal a universal orientation, focusing on more abstract principles and ideas. Crossing these dimensions yield six basic values, as presented in Figure 1.

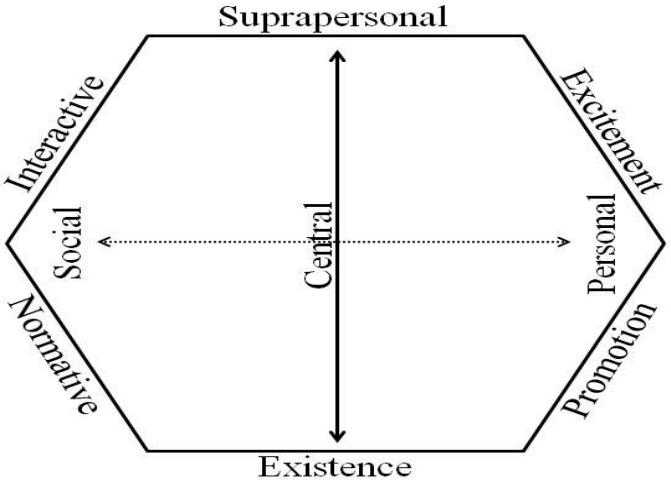

Figure 1. An overview of the functional theory of values

The functional theory of values is based on primary value functions and has similarities with alternative models (e.g., Inglehart, 1977; Schwartz, 1992), but it also presents differences. For instance, the functional theory assumes an inherent harmony in the individual's values system (i.e., conflict between values is an exception, not the rule), it discards the need of differentiating cultural and individual approaches to values, and restricts the set of specific values to six basic values or subfunctions (Gouveia, 2013; Gouveia, Milfont, & Guerra, 2014b). In addition, the functional theory is an additional theoretical tool for understanding the value system by reconciling distinct value traditions in a parsimonious and theory-driven model (Gouveia, Milfont, Vione, & Santos, 2015).

The Present Study

In the present study we focus on only two basic values or subfunctions: excitement and normative. While excitement values (emotion, pleasure, sexuality) emphasize appreciation of new stimuli, adventures and extreme situations, and to seek personal satisfaction, normative values (obedience, religiosity, tradition) emphasize the stability of social life and order, seeking socially accepted behaviors and respect to others (Gouveia et al., 2014a). Moreover, while excitement values guide behavior toward personal goals and express thriving needs, normative values guide behavior toward social goals and express survival needs (Gouveia, Milfont, & Guerra, 2014a, 2014b).

Given these distinct characteristics of excitement and normative values and previous findings (Coelho et al., in press; Gouveia et al., 2011; Medeiros et al., 2015; Pimentel et al., 2011), we predicted that excitement values would boost the negative impact of preference for alternative music genres on attitudes toward drug use (i.e., stronger music–drug link for those scoring high on excitement values), while normative values would buffer this negative impact (i.e., weaker or nonsignificant music–drug link for those scoring high on normative values).

It is worth noting that despite the similar labels between normative values and subjective norms in the theory of planned behavior, these constructs are not the same. Subjective norms in the theory of planned behavior refer to perceived social pressure to perform or not to perform a specific behavior (Ajzen, 1991). In contrast, normative values are general axiological principles individuals use as guiding principles in their life based on specific set of basic human needs (e.g., social control) and pre-conditions for the satisfaction of these needs (e.g., respect for tradition) (Gouveia et al., 2014a), and are not restricted to any given behavior.

The goals of the present study are twofold. We first try to replicate findings from previous studies showing a positive association between preference for alternative music genres and attitudes toward drugs use. Extending past studies, we then examine whether excitement and normative values moderate this music–drug link.

Method

Participants

Participants comprised a convenience sample of 269 undergraduate students from a public university in Paraíba (Brazil), studying mainly accounting (31.2%) and Psychology (24.5%). Their mean age was 21 years (*SD* = 2.27), and mostly were female (65.8%).

Instruments

Besides demographic questions (sex, age, and university course), the respondents answered a survey questionnaire with the following instruments.

Alternative Music Scale. This scale has eight items or music genres (rap, heavy metal, punk, religious music [reversed], reggae, rock, electronic), being part of the *Music Preference Scale* (Pimentel, Gouveia, & Pessoa, 2007). Participants are asked to consider the music genre and indicate extent to which they like each music genre on a 5-point scale anchored by 1 (*Dislike*) to 5 (*Like a lot*). Cronbach's alpha for this 8-item scale was .70.

Attitudes toward Drugs Use Scales. The Simons and Carey (2000) scale assessing attitudes toward marijuana was modified to measure attitudes toward use of alcohol, marijuana and other drugs (cocaine, crack and ecstasy). Previous research has validated these distinct scales in the Brazilian context (e.g., Gouveia et al., 2009). Four semantic differential items were used to access each of these three attitude objects: positive-negative, pleasant-unpleasant, good-bad, and desirable-undesirable. Answers were given on a 9-point scale with lower values representing favorable attitudes and higher values representing unfavorable attitudes. The answers were then reverse coded so that higher a score reflects more positive attitudes toward use of alcohol, marijuana and other drugs. Cronbach's alphas were: .92 (alcohol), .94 (marijuana), and .91 (other drugs).

Basic Values Survey. This instrument has 18 marker values grouped into the six basic values of excitement, promotion, existence, suprapersonal, interactive, and normative (see Figure 1; Gouveia et al., 2014a). As noted above, only excitement values (emotion, pleasure, sexuality) and normative values (obedience, religiosity, tradition) were considered in the present study. Participants were asked to indicate the importance of each value-item as a guiding principle in their life on a 7-point scale anchored by 1 (*Completely unimportant*) to 7 (*Of the utmost importance*). Cronbach's alpha was of .51 (excitement) and .63 (normative).

Procedure

Four trained collaborators were responsible for data collection. After permission was gained from teachers, the collaborators entered the classrooms, explained the nature and aims of the research to potential respondents, and informed their participation was completely voluntary and anonymous. Participants were informed that participation would require answers to questions about their music preference, attitudes toward drugs use as well as their human values. Questionnaires were then distributed to all students, who were asked to answer all questions honestly. Willing students completed the survey individually in the collective context of classroom, and took on average 15 minutes to complete the survey.

Results

Descriptive statistics and bivariate correlations can be obtained upon request. To test the predicted interactive effect we used moderated multiple regressions by first standardizing the scores and then creating the product terms by multiplying the standardized scores. We followed the procedures by Milles and Shevlin (2001), entering the independent and the moderate variable in step 1, and their interaction term at step 2. Table 1 presents the regression hierarchical results.

Table 1
Moderated regression hierarchical results predicting favorable attitudes toward drug use

	Alcohol				Marijuana				Other drugs			
	B	***SE***	**B**	***T***	***B***	***SE***	**B**	***T***	***B***	***SE***	**β**	***T***
Excitement values												
Constant	6.01	.14			7.55	.12			7.97	.11		
Alternative music preference	.72	.14	.30	5.21***	.62	.13	.29	4.96***	.38	.11	.21	3.38***
Excitement values	.66	.14	.28	4.87***	.48	.13	.23	3.87***	.29	.11	.17	2.68**
Alternative music preference × Excitement values	-.05	.13	-.02	-.43	.19	.12	.09	1.61	.10	.10	.06	1.04
Normative values												
Constant	5.99	.14			7.58	.12			8.03	.10		
Alternative music preference	7.68	.14	.32	5.35***	.62	.12	.29	4.92***	.31	.10	.18	3.00**
Normative values	-.49	.52	-.21	-3.28**	-.45	.13	-.21	3.42	-.45	.11	.26	4.08
Alternative music preference × Normative values	-.12	.21	-.05	-.79	-.27	.13	-.12	-2.01*	-.27	.11	-.15	-2.47*

Note. $N = 269$. * $p < .05$. ** $p < .01$. *** $p < .001$.

The results in Table 1 replicated previous findings demonstrating a positive association between preference for alternative music genres and attitudes toward drug use. Individuals who have greater preference for alternative music genres are more likely to have more favorable attitudes toward use of alcohol, marijuana and other drugs (cocaine, crack and ecstasy). The results also indicate a positive correlation between attitudes toward alcohol use and excitement values, while the correlation with alcohol use was negative for normative values. No significant correlations were observed for the associations between human values and attitudes toward use of marijuana and other drugs.

Table 1 also reveals that the predicted moderation effect of excitement values on the music–drug link was not supported. However, the predicted moderation effect for normative values was supported. Although normative values had no direct effect on attitudes toward use of marijuana and other drugs, normative values moderated the music–drug link. To model the significant interactions we calculated simple effects representing the mean differences in positive attitudes toward use of marijuana and other drugs for different levels of alternative music preference at low (1 SD below the mean) and high (1 SD above the mean) endorsement of normative values using ModGraph (Jose, 2013).

Figure 2 presents the post-hoc probing of the interaction for marijuana use. Individuals with low endorsement of normative values had a steeper slope between alternative music preference and attitudes toward marijuana use compared to those individuals with high endorsement of normative values. Simple slopes analysis revealed that greater preference for alternative music was overall related to favorable attitudes toward marijuana, but this association was more pronounced for those with *low* endorsement of normative values (simple slope = 0.89, $t = 4.69$, $p < .001$) than for those with *medium* endorsement of

normative values (simple slope = .62, t = 6.2, p < .001) and *high* endorsement of normative values (simple slope = .35, t = 2.25, p < .03).

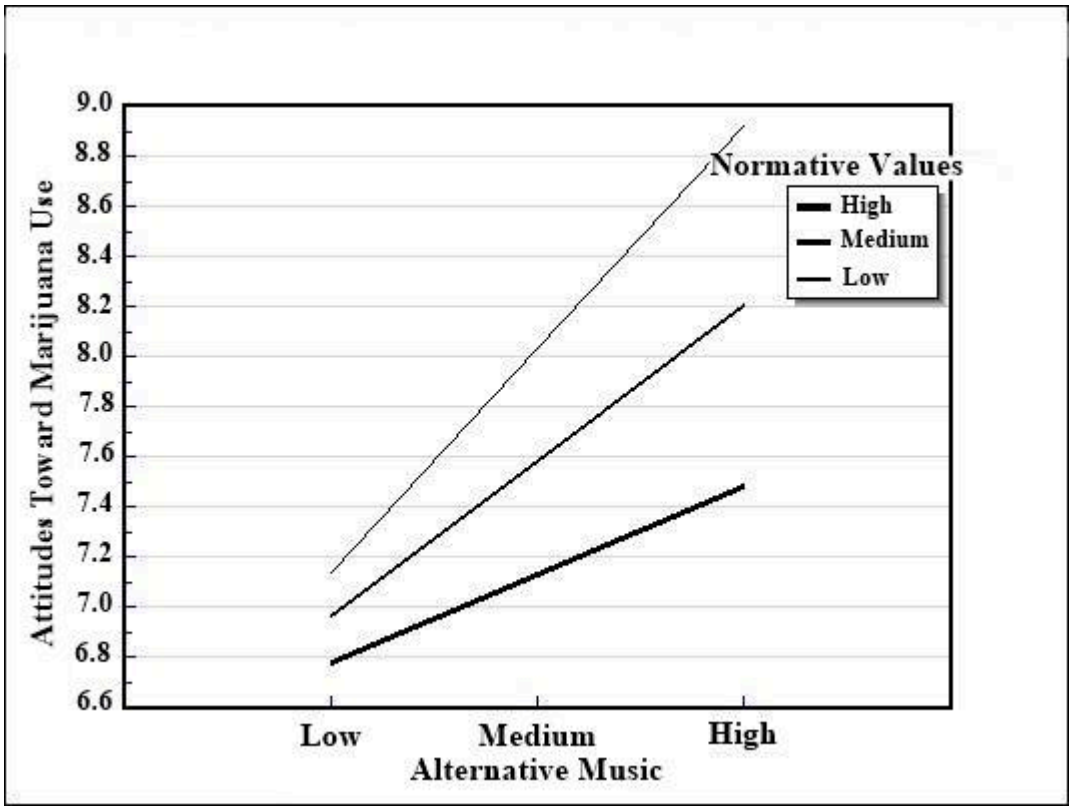

Figure 2. Mean levels of favorable attitudes toward marijuana use for low/medium/high preference for alternative music genres as a function of normative values endorsement

Similar results were observed for attitudes toward use of other drugs (see Figure 3). Individuals with *low* endorsement of normative values evidenced a stronger relationship between alternative music preference and attitudes toward use of other drugs (simple slope = .58, t = 3.14, p < .001), than for those with *medium* endorsement of normative values (simple slope = .31, t = 3.1, p < .002), while the association between alternative music preference and attitudes toward use of other drugs was non-significant for those with *high* endorsement of normative values (simple slope = .04, t = .24, p = .80).

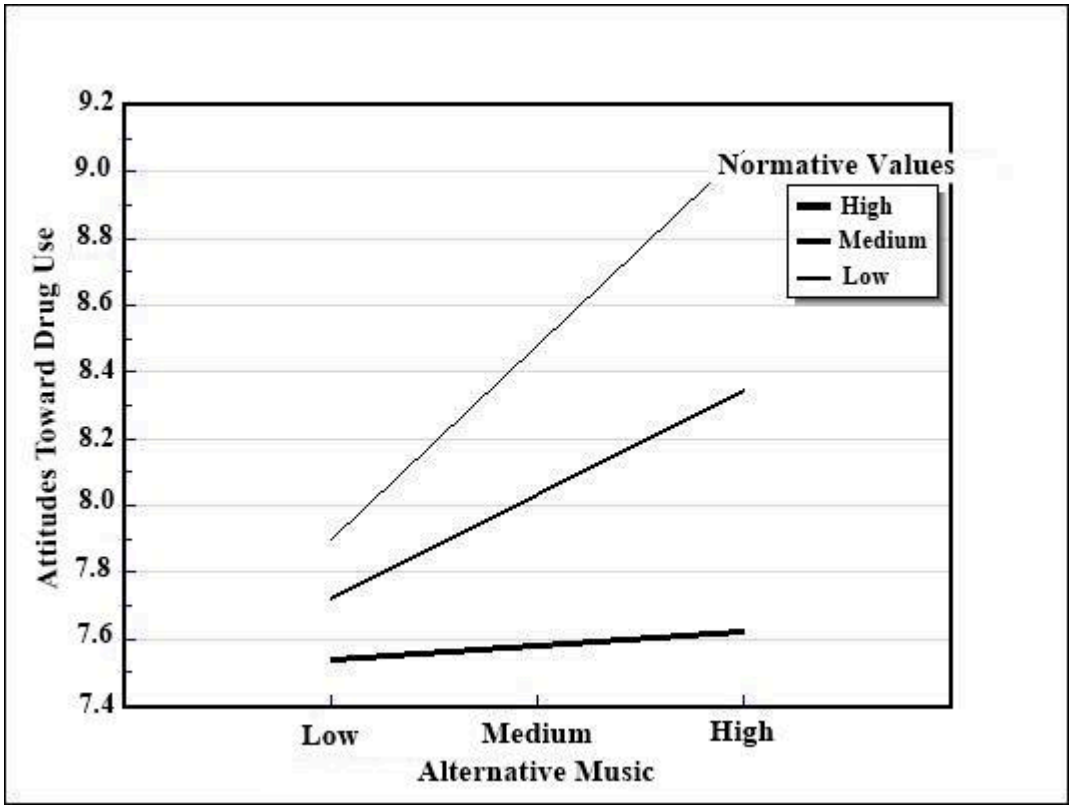

Figure 3. Mean levels of favorable attitudes toward use of other drugs for low/medium/high preference for alternative music genres as a function of normative values endorsement

Discussion

The extant literature has reported a consistent association between preferences for certain music genres and greater drug use or favorable attitudes toward drug use (e.g., Arnett, 1991; Mulder et al., 2009; Simons & Carey, 1998; ter Bogt et al., 2012). Our findings corroborated this music–drug link in an undergraduate sample in Brazil. Greater preference for alternative music (rap, heavy metal, punk, reggae, rock, and electronic) was associated with more favorable attitudes toward use of alcohol, marijuana and other drugs (cocaine, crack and ecstasy).

Mulder et al. (2010) propose two explanations for the observed music–drug link. From a social cognitive learning perspective, behaviors that are depicted and stimulated in lyrics such as substance use may have an effect in modelling the "accepted" or normative behavior for those who like such music genres. Alternatively, the relationship between music preference and substance use might reflect behavioral dispositions as individuals tend to prefer music genres that express their held behaviors and attitudes. However, further research is needed to provide a better theoretical understanding of the processes that might explain the positive associations between preference to certain music genres and drug use.

Contributing to this quest and extending past research, we examined whether endorsement of certain human values would moderate the music–drug link. First, and supporting previous findings (e.g., Ludwig & Pittman, 1999; Pimentel et al., 2011; Tamayo et al., 1995), we observed a direct association between human values and positive attitudes toward drug use. More favorable attitudes toward use of alcohol, marijuana and other drugs were observed among individuals who endorsed excitement values (emotion, pleasure, sexuality) as guiding principles in their lives, while more unfavorable attitudes to drug use was observed among those who endorsed normative values (obedience, religiosity, tradition). These findings support the view that excitement values emphasize appreciation of new and extreme situations whereas normative values emphasize stability of social life (Gouveia, 2003; Gouveia et al., 2014a, 2014b).

Notably, the predicted moderation role of human values on the music–drug link was partially supported. First, the predicted moderation effect of excitement values was not supported, and suggests that preference for alternative music is linked to attitudes toward drug use irrespective of endorsement of these values. However, moderation effects were observed for normative values. The associations between preferences for alternative music genres and favorable attitudes toward use of marijuana and other drugs were stronger among individuals

who place *less* emphasis on normative values (see Figures 2 and 3). In other words, endorsement of normative values can buffer the association between preference for alternative music and attitudes to drug use.

Overall, our findings suggest that the relationship between music preference and drug use can be understood not only based on the attitudes young people have (see Mulder et al., 2009), but also in terms of the human values they endorse. Therefore, the direct and interactive effects of human value priorities on music preference and drug use should be pursued in future research. Since our findings are based on a convenience sample of undergraduate students, it is important to replicate the findings (particularly the observed interaction effects) in a larger and diverse sample. The literature has suggested that risky behaviors (e.g., substance use and abuse) tend to diminish with age, possibly due to decreases in dispositional sensation seeking (Arnett, 1992). Thus, future research could consider examining developmental patterns in the associations between the variables considered in the present study. Moreover, it might be useful to consider implicit measures of attitudes toward drug use to examine whether the direct and moderated associations observed here would be stronger for implicit (automatic, unconscious) attitudes.

The present findings might be useful for attitude change and drug use prevention programs. In particular, our findings suggest that promoting normative values could be an avenue for campaigns trying to reduce substance abuse among young people. However, it is worth noting the cross-sectional nature of our findings which should be replicated in longitudinal or even experimental studies before used in intervention attempts. The absence of a moderation effect of normative values for alcohol use should also be examined further, but might reflect indicate a normativity of alcohol consumption among undergraduate students in the Brazilian context (Ramis et al., 2012).

In conclusion, our findings suggest that normative values might work as protective factor for the associations between preference for alternative music genres and favorable attitudes toward use of marijuana and other drugs. Greater endorsement of normative values can buffer the music–drug link by making it less likely that preference for alternative music such as rock, heavy metal or punk would lead to positive attitudes toward marijuana and other drugs.

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