Association between alcohol and tobacco consumption and religiosity

Associação entre o consumo de bebidas alcoólicas e tabaco e a religiosidade

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Keywords
Primary care nursing; Tabacco use; Consumption drinking; Religion; Public health nursing

Descritores
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Abstract

Objective: To verify the association between religiosity and the pattern of alcohol and tobacco consumption among the population assisted by primary health care services.

Methods: A cross-sectional study was conducted with 363 individuals over 18 years of age. The variable of exposure, religiosity, was evaluated according to the Duke University Religion Index. The outcome, alcohol and tobacco consumption, was evaluated through the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) questionnaire. The association between exposure and outcome was verified based on a multivariate logistic regression analysis.

Results: There was a high prevalence of alcohol and tobacco consumption among most vulnerable groups. Organizational and intrinsic religiosity were protective factors in relation to moderate and high alcohol and tobacco consumption.

Conclusion: The higher the score for organizational and intrinsic religiosity, the lower the consumption of alcohol and tobacco.

Resumo

Objetivo: Verificar a associação entre a religiosidade e o padrão de consumo de álcool e tabaco em população atendida na Atenção Primária à Saúde.

Métodos: Estudo transversal realizado com 363 indivíduos, maiores de 18 anos. A variável de exposição, religiosidade, foi avaliada segundo o Índice de Religiosidade da *Universidade de Duke*. O desfecho, consumo de álcool e tabaco, foi avaliado pelo questionário *Alcohol, Smoking and Substance Involvement Screening Test* (ASSIST). Verificou-se a associação entre exposição e desfecho, com base na análise de regressão logística multivariada.

Resultados: Foi alta a prevalência no consumo de álcool e tabaco nos grupos mais vulneráveis. As religiosidades organizacional e intrínseca mostraram-se fator de proteção em relação ao consumo moderado/alto de álcool e tabaco.

Conclusão: Quanto maior o escore para a religiosidade organizacional e intrínseca, menor o consumo para essas substâncias.

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Introduction

According to the United Nations estimates, the global prevalence of tobacco consumption is ten times higher and of alcohol is eight times higher than the annual prevalence of illegal drugs consumption.[1] Disorders related to alcohol and tobacco consumption are among the ten main health conditions that contribute to explain the years of life lost from premature deaths among the adult population all over the world.[2] In Brazil, a study with a representative sample of the population showed alarming data regarding alcohol and tobacco consumption. Nearly 74.6% used alcohol at least once in life, whereas 44% used tobacco. According to authors,[3] 6,109 deaths from alcohol consumption were registered in 2005, whereas 375 were related to the use of tobacco. In addition, there is evidence that the mean age to start using tobacco is 16 years old and to alcohol that is 17 years old.[3]

In this sense, it is worth mentioning that, due to damages to health, family and society in general regarding the use of alcohol, tobacco and other psychoactive substances, factors associated with the use of and protection against these substances have been identified.[4] Religiosity is one of the protective factors frequently quoted in literature.[5,6] Among the many religiosity dimensions that could be investigated, those frequently associated with health outcomes and most used in studies are religious affiliation, subjective religiosity (importance of religion to the individual) and organizational religiosity (attending the mass, worships and other religious services).[7]

By virtue of the prevalence of problems related to alcohol and tobacco consumption, it is worth mentioning that primary health care (PHC) services developed by the Family Health Strategy enable tracking the abusive use of these substances. In addition, it is a field to develop actions on early identification, preventive actions and health promotion.[8,9] Studies show the need for identifying the pattern of consumption of psychoactive substances in the population served, mainly in PHC, to provide them with the required level of care, information about the damages resulting from the use of these substances, assisting the prevention of diseases caused by consumption.[9-12]

In the context of problems related to the use of alcohol and other drugs, and due to short national literature on the topic, the authors would like to emphasize that this is a different study because it understands religiosity relevance as an additional element to prevent diseases and to assist the actions implemented in the practice of health professionals.

In face of the aforementioned, the objective of this study was to verify the association between religiosity and the pattern of alcohol and tobacco consumption in the population assisted by primary health care services.

Methods

A cross-sectional study was developed with users of a Family Health Care Clinic located in the central area of the city of Rio de Janeiro (state of Rio de Janeiro), in the southeast region of Brazil.

All individuals over 18 years of age, of both sexes, who sought for services for any reason in the aforementioned Basic Health Care Unit were considered to be eligible participants. The study sample included 363 subjects, of whom 269 were women, selected from a convenience sample.

Data were collected from October 2012 to January 2013. Individuals were invited to participate promptly after a nursing visit or by the end of home medical visits. Interviews were performed by a professional trained in the Family Health Care Clinic or during home medical visits, at reserved sites with no presence of third parties.

The instrument adopted is made up of a semi-structured questionnaire with questions about the living and health habits of participants, and socio-demographic questions. In addition, the instrument included the Duke University Religion Index[7] and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) questionnaire.[13]

The Duke University Religion Index includes three dimensions of religiosity: organizational reli-

giosity with one item; non-organizational religiosity with one item; and, intrinsic religiosity with three items. The first dimension (organizational religiosity) concerns which frequency the person uses to go to church or religious temples, presenting six options of answer (">1 time/week", "1 time/week", "2 to 3 times/month", "some times/year", "≤1 time/year" and "never"). Non-organizational religiosity concerns time devoted to religious activities and also presents six options of answer (">1 time/day", "daily", "≥2 times/week", "1 time/week", "few times/month", and "barely or never"). Intrinsic religiosity evaluates how individuals feel the presence of God in their lives, if religious beliefs rule their way of living and the effort to live religion in all aspects of their lives. All items that evaluate the intrinsic religiosity dimension present five options of answer in a Likert scale, ranging from "totally true to me" (score zero) to "not true" (score 4). For the purposes of analyses, the three dimensions (organizational, non-organizational and intrinsic religiosity) were analyzed in separate. Organizational religiosity was pooled in two levels >"weekly/monthly" (">1 time/week", "1 time/week" and "2 to 3 times/week") – reference group - and "annual/never" ("some times/year", "≤1 time/year" and "never"). Non-organizational religiosity was also ranked in two levels: "daily/weekly" (">1 time/day", "daily", "≥2 times/week" and "1 time/week") - reference group - and "monthly/never" ("few times/month" and "barely or never"). To investigate the variable "intrinsic religiosity" the relative score of each item of the Likert scale was summed. This procedure generated a continuous variable with scores ranging from 3 to 15. This way, lower scores referring to intrinsic religiosity would represent a stronger presence of religiosity in the lives of the individuals being studied.

Alcohol consumption was evaluated according to the ASSIST questionnaire, version 3.1.[13] This is a worldwide renowned tracking questionnaire developed by the World Health Organization and validated in Brazil. The instrument bears the objective of identifying - in PHC services - individuals with low, moderate and high risk consumption of nine classes of psychoactive substances. To that end, it considers the frequency of use along the individual's life and in the last three months; problems related to use; concern about use; and, use through injectable route.

The ASSIST answers score from zero to 33. Scores ranging from zero to three stand for occasional use; from 4 to 26 for abuse; and 27 or more suggests dependency. It is worth mentioning that scores to evaluate the alcohol consumption pattern are different from the remainder substances. Alcohol presents higher tolerance with scores ranging from zero to 10 indicating occasional use; 11 to 26 as indication of abuse; and 27 or above as indication of dependency.

These scores served as ground to create the variables "consumption patterns", both of tobacco and alcohol, ranked in two levels. The group reporting "low consumption" of tobacco included individuals scoring from zero to three; individuals with scores ≥ 4 were included in the group with "moderate/high consumption". The group of "low consumption" of alcohol was composed of participants scoring ≤10, in opposition to >11 values classified as "moderate/high consumption" of alcohol.

As potential factors of confounding, the following variables were tested: sex, age, skin color, education, marital status and family income. The association between religiosity (organizational, non-organizational and intrinsic religiosity) and alcohol and tobacco consumption pattern was analyzed in two stages. The first stage concerned the definition of confounding variables based on bivariate analyses using the Chi-square test. The multivariate model included all variables associated to both outcome and exposure ($p<0.2$). The second stage referred to the multivariate logistical regression model. The Statistical Package for the Social Sciences (SPSS, IBM) software version 19.0 was used for analyses.

The development of this study complied with national and international ethical standards for research involving human subjects.

Results

The group studied was aged, on average, 29.0 years (standard deviation ±12.4 years) ranging from 18

Table 1. Association between socio-demographic characteristics and alcohol and tobacco consumption pattern, based on the odds ratio (OR) and respective confidence interval of 95% (CI95%)

Characteristics studied	Moderate/high consumption of alcohol (n=51)			Moderate/high consumption of tobacco (n=68)		
	n(%)	OR (CI95%)	p-value	n(%)	OR (CI95%)	p-value
Sex						
Male	5(5.3)	1.0		16(17.0)	1.0	
Female	46(17.1)	3.67(1.41-9.54)	0.008	52(19.3)	1.16(0.63-2.16)	0.621
Age, years						
18-32	31(14.0)	1.0		43(19.4)	1.0	
33-59	20(14.2)	1.01(0.55-1.87)	0.953	25(17.7)	0.90(0.52-1.55)	0.696
Skin color						
White	5(9.8)	1.0		15(29.4)	1.0	
Non-white	46(14.7)	1.59(0.60-4.21)	0.346	53(17.0)	0.49(0.25-0.96)	0.035
Education						
Up to complete elementary school	30(13.2)	1.0		45(19.8)	1.0	
From incomplete high school onwards	21(15.4)	1.19(0.66-2.19)	0.554	23(16.9)	0.82(0.47-1.43)	0.278
Marital status						
Married	27(14.8)	1.0		37(20.3)	1.0	
Not married	24(13.3)	0.88(0.49-1.59)	0.665	31(17.1)	0.81(0.48-1.37)	0.434
Employment status						
Employed	26(13.9)	1.0		31(16.6)	1.0	
Unemployed	25(14.2)	0.97(0.54-1.76)	0.934	37(21.0)	0.75(0.44-1.27)	0.278
Per capita income						
≥R$622.00 (≥1 MW)	26(12.6)	1.0		34(21.8)	1.0	
R$0 to 622.00 (up to 1 MW)	25(16.0)	1.32(0.73-2.40)	0.348	34(16.4)	0.70(0.42-1.20)	0.194
Has a religion						
Yes	32(13.4)	1.0		47(19.7)	1.0	
No	19(15.2)	0.87(0.47-1.60)	0.647	21(16.8)	1.21(0.69-2.15)	0.493

MW - Minimum Wage

to 59 years, mainly made up of women (74.1%) and 86.0% self-declared to be black or brownish. Regarding education, 62.5% had concluded only elementary education and 50.1% were married. As regards monthly family income 43% of respondents stated earning up to one minimum wage (R$678.00). Regarding religion, 33.3% said to be Catholic; 29.5% were Evangelical and 34.4% said to have no religion. As regards alcohol consumption 14% of respondents reported moderate / high-risk consumption. The moderate and high-risk tobacco consumption pattern was found among 18.7% of participants.

The evaluation on the association between the characteristics of the population studied and alcohol consumption resulted in a significant association between sex and moderate/high consumption of alcohol. When compared to men, women had 3.67 more chances of presenting this alcohol consumption pattern (Table 1). Regarding tobacco, there was a significant association between consumption and skin color with a 0.49 odds ratio, i.e., non-white individuals had less chance of presenting moderate/high consumption of tobacco.

After the adjustment by sex, age and income, a significant association was found between organizational and intrinsic religiosity and alcohol consumption pattern. Individuals reporting low attendance to churches/temples (annually or never) had about three times more chances to present higher alcohol consumption when compared to those who attended churches/temples more regularly (weekly or monthly). Regarding intrinsic religiosity, a protective factor in relation to moderate/high consumption of alcohol was found. In other words, results showed that the higher the score for intrinsic religiosity, the lower the consumption of alcohol (Table 2).

Similar results were found in the evaluation of tobacco consumption in relation to exposure to religiosity. Both organizational and intrinsic religiosity showed to be strongly associated to moderate/high consumption of tobacco. Individuals who attended churches and religious temples less frequently had 3.4 more chances of moderate/high consumption

Table 2. Association between religiosity and alcohol consumption pattern. Odds ration (OR) and respective confidence interval of 95% (CI95%) based on the multivariate logistical regression model

Adjustment model	OD	95%CI	p-value
OR			
M1 = OR	3.20	1.74-5.87	<0.001
M2 = M1 + sex	3.39	1.83-6.28	<0.001
M3 = M2 + age	3.44	1.86-6.40	<0.001
M4 = M3 + income	3.41	1.83-6.36	<0.001
NOR			
M1 = NOR	1.25	0.65-2.40	0.504
M2 = M1 + sex	1.31	0.68-2.55	0.423
M3 = M2 + age	1.31	0.66-2.60	0.437
M4 = M3 + income	1.31	0.66-2.61	0.440
IR			
M1 = IR	0.77	0.69-0.87	<0.001
M2 = M1 + sex	0.79	0.70-0.88	<0.001
M3 = M2 + age	0.77	0.69-0.87	<0.001
M4 = M3 + income	0.77	0.69-0.87	<0.001

OR - Organizational Religiosity; M1 - Model 1; M2 - Model 2; M3 - Model 3; M4 - Model 4; NOR - Non-Organizational Religiosity; IR - Intrinsic Religiosity

of tobacco if compared to individuals who attended more frequently. On the other hand, intrinsic religiosity seemed to have a protective effect on tobacco consumption (Table 3).

Table 3. Association between religiosity and tobacco consumption pattern. Odds ratio (OR) and respective confidence interval of 95% (CI95%) based on the multivariate logistical regression model

Adjustment models	OR	95%CI	p-value
OR			
M1 = OR	3.84	2.22-6.63	<0.001
M2 = M1 + skin color	3.75	2.17-6.50	<0.001
M3 = M2 + income	3.86	2.19-6.71	<0.001
NOR			
M1 = NOR	1.78	1.01-3.15	0.044
M2 = M1 + skin color	1.78	1.01-3.15	0.047
M3 = M2 + income	1.74	0.98-3.10	0.057
IR			
M1 = IR	0.86	0.77-0.95	0.004
M2 = M1 + skin color	0.86	0.78-0.95	0.004
M3 = M2 + income	0.87	0.78-0.96	0.006

OR - Organizational Religiosity; M1 - Model 1; M2 - Model 2; M3 - Model 3; M4 - Model 4; NOR - Non-Organizational Religiosity; IR - Intrinsic Religiosity

Discussion

Among the limitations of the present study, it is important to highlight its sectional nature, which does not allow to establish a cause and effect relationship between religiosity and the outcomes investigated. The convenience sample (rather than random) employed could have influenced on results, and the fact that the group of participants came from one single health care unit in the municipality of Rio de Janeiro demands caution when generalizing the findings of this study to other populations.

This investigation reached the objectives proposed and can support the development and planning of actions to prevent alcohol and tobacco consumption among adolescents and youngsters, mainly through activities performed by nurses and other members of the Family Health Strategy team. That is possible because of the greater possibility of these professionals to coordinate and work with partners from social and religious organizations active in the community where they work.

This is a current and relevant topic for collective health, but with few references in national literature, mainly in religiosity-related aspects in the scope of PHC. According to the findings of this study, investments in longitudinal studies are important to evaluate to which extent factors like religiosity could curb the abusive consumption of alcohol, tobacco and other drugs by the population.

This study includes young, married, non-white, low-education and low-income individuals. These data are similar to those found in studies performed at this health care level in Brazil.[10,14,15] As regards religion, there was a significant percentage of Catholics and Evangelicals; these data are shown in the 2010 Brazilian census and other studies about the Brazilian population profile.[16]

The association between female sex and higher consumption of alcohol is in line with national and international studies[3,17-19] that described the global increase in alcohol consumption among women in the last few years. The national survey about alcohol consumption patterns in the Brazilian population identified that young women make up the group with highest indexes of increase in alcohol consumption, and are in higher risk of presenting harmful consumption.[3] In brief, studies show universalization of consumption in relation to sex, and men cannot be thought as the main consumers.[18,19] It is worth emphasizing the importance of understanding this specific change of behavior observed among women. In order to plan intervention strategies focused on women with consumption similar

to men, there were differences regarding location, kind of substance and situation of use.

The association between skin color and tobacco consumption disagreed with the results reported in specialized literature. In fact, some studies have shown a higher prevalence of smoking initiation among black individuals when compared to white subjects.[15,16,20] Here, it is possible to infer that the study limitations, like the type of sample, could have influenced on this result.

Although age was not associated with outcome, there is a high prevalence of moderate/high consumption among the youngest individuals in the sample studied. It is widely known that younger individuals tend to consume more alcohol and tobacco[15,16,20] and are considered the group under higher risk of diseases associated with these substances. Hence, the prevalence of consumption patterns in this demographic sector should be carefully monitored, mainly regarding health promotion and disease prevention, which are activities inherent to the PHC service team in the Family Health Strategy.[3,8,10,16] In this study, the association between religiosity and alcohol and tobacco consumption patterns is in line with other studies in this field.[5,6]

In brief, the presence of religiosity (evaluated by the dimensions of organizational and intrinsic religiosity) seemed to have a protective effect on the consumption of alcohol and tobacco. This result reinforced the idea that attending church or religious meetings would deviate individuals from the harmful consumption of alcohol and tobacco. Feeling the presence of God in their lives, living according to religious beliefs and endeavoring to follow the precepts of a religion proved to be protective factors to the non-use of alcohol and tobacco.

It is worth mentioning that individuals reporting to have no religion, when inquired about the intrinsic religious dimension, affirmed to believe in a higher being - "God" - showing that denying to have a religion is not necessarily the same as being an atheist. This result is in line with other studies in which individuals with no religion justified their condition saying they had their own religiosity, with no link to churches, and only a minority did not believe in God.[5-7]

In this context, one can infer that religiosity stands for an element with the potential to maximize the work by Family Health Strategy professionals. In practical terms, strengthening partnerships with churches and religious temples in the community could facilitate the development of actions on health promotion focusing on the planning of educational actions for health, in the sense of preventing and minimizing the consumption of alcohol and tobacco.

Conclusion

An association was observed between organizational and intrinsic religiosity as a factor of protection in relation to moderate and high consumption of alcohol and tobacco among primary health care users.

Collaborations

Queiroz NR, Portella LF and Abreu AMM state they have contributed to the project design and planning, collection of data, data interpretation, wording of the article, relevant critical review of its content and final approval of the version to be published.

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