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Original Article

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REDUCTION OF THE ALCOHOL CONSUMPTION AMONG WORKERS USING A BRIEF INTERVENTION

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ABSTRACT

Objective: to analyze the effect of a brief intervention on the reduction of the alcohol consumption pattern among workers from the worker health perspective.
Methods: a quasi-experimental study with a single sample of 36 workers, applying the positive (>8) Alcohol Use Disorders Identification Test and sample selection and using data from the Worker Health Booklet in combination with the mentioned test. Participants had three weekly sessions of brief intervention with motivational interviewing and were reevaluated after three months. Data were analyzed quantitatively. The Wilcoxon test was applied to data on the reduction of the consumption pattern, and a significance $p<0.05$ was adopted.
Results: risky consumption prevailed (61.1%), followed by probable dependence (27.8%) and hazardous consumption (11.1%). The score obtained in the test after three months of the brief intervention was lower than the initial result, with $Z=-4.709$ and $p<0.000$. Regarding sociodemographic and occupational characteristics, all the participants showed a significant reduction. Concerning Alcohol Use Disorders Identification Test questions, there was a reduction, especially in the frequency ($Z=-3.880$ and $p<0.000$) and binge drinking ($Z=-4.144$ and $p<0.000$).
Conclusion: the effect of brief intervention associated with motivational interviewing reduced the alcohol consumption pattern among workers at a public university.

DESCRIPTORS: Alcoholism. Workers. Occupational health. Motivational interviewing. Primary health care.

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A REDUÇÃO DO CONSUMO DE ÁLCOOL ENTRE TRABALHADORES UTILIZANDO A INTERVENÇÃO BREVE

RESUMO

Objetivo: analisar o efeito da Intervenção Breve na redução do padrão de consumo de álcool entre trabalhadores, na perspectiva da saúde do trabalhador.
Método: estudo quase-experimental com amostra única de 36 servidores, e Teste de Identificação de Problemas Relacionados ao Álcool positivo (>8), e seleção da amostra, utilizando dados do Caderno de Saúde do Servidor associado ao referido teste. Os participantes receberam três sessões de Intervenção Breve por meio de entrevista motivacional, semanal, e após três meses foram reavaliados. Os dados foram analisados quantitativamente. Foi utilizado o teste de Wilcoxon na redução do padrão de consumo, adotando-se significância de *p<0,05*.
Resultados: o consumo de risco apresentou maior frequência (61,1%), seguido de provável dependência (27,8%) e nocivo (11,1%). Após três meses de Intervenção Breve, score encontrado no teste foi inferior ao do resultado inicial com *Z*=-4,709 e *p*<0,000. Quanto às características sociodemográficas e ocupacionais, todos apresentaram redução significativa. Em relação às questões do Teste de Identificação de Problemas Relacionados ao Álcool, reduziram principalmente na frequência (*Z=-3,880 e p<0,000)* e no consumo *binge drinking* (*Z*=-4,144 e *p*<0,000).
Conclusão: o efeito da Intervenção Breve, associado à entrevista motivacional, reduziu o padrão de consumo de álcool entre os trabalhadores de uma universidade pública.

DESCRITORES: Abuso de álcool. Trabalhadores. Saúde do trabalhador. Entrevista motivacional. Atenção primária à saúde.

REDUCCIÓN DEL CONSUMO DE ALCOHOL ENTRE TRABAJADORES UTILIZANDO LA INTERVENCIÓN BREVE

RESUMEN

Objetivo: Analizar el efecto de la Intervención Breve para reducir el estándar de consumo de alcohol entre trabajadores, en la perspectiva de la salud del trabajador.
Método: Estudio cuasiexperimental con muestra única de 36 servidores, con Cuestionario de Identificación de los Trastornos debidos al Consumo de Alcohol positivo (>8) y selección de la muestra utilizando datos del Cuaderno de Salud del Servidor asociado al referido Cuestionario. Los participantes recibieron tres sesiones de Intervención Breve mediante entrevista motivacional, y fueron reevaluados luego de tres meses. Datos analizados cuantitativamente. Se aplicó Test de Wilcoxon para la reducción del estándar de consumo, adoptándose significatividad de *p<0,05*.
Resultados: El consumo riesgoso resultó el más frecuente (61,1%), seguido de la probable dependencia (27,8%) y del nocivo (11,1%). Luego de tres meses de la Intervención Breve, el puntaje del test fue inferior al inicial, con *Z=-4,709 y p<0,000*. Respecto de las características sociodemográficas y laborales, todas mostraron reducción significativa. En relación a las preguntas del Prueba de identificación de problemas relacionados con el alcohol, se redujo especialmente la frecuencia (Z=-3,880 y p<0,000) y en el consumo b*inge drinking (Z=-4,144 y p<0,000)*.
Conclusión: El efecto de la Intervención Breve, asociado a la entrevista motivacional, redujo el estándar de consumo alcohólico entre los trabajadores de una universidad pública.

DESCRIPTORES: Alcoholismo. Trabajadores. Salud laboral. Entrevista motivacional. Atención Primaria de salud.

INTRODUCTION

The World Health Organization points to alcohol consumption as one of the serious public health problems at present, especially because the psychoactive substance can cause dependence. The problems related to alcohol consumption vary largely worldwide, but morbidity and mortality remain significant in most countries. It is estimated that 76.3 million people consume alcohol, have a mental disorder (dependence) diagnosis, and4% of the total years of life lost.[1]

Harmful use of alcohol is one of the five main risk factors for diseases, incapacities, and deaths globally and results in approximately 3.3 million deaths per year, even when the beneficial impact of low-risk alcohol consumption patterns on some diseases is taken into consideration. Thus, harmful use of alcohol accounts for 5.9% of deaths worldwide.[2–4]

In Brazil, alcohol is the most consumed psychotropic substance and its excessive use is among the ten most serious health impairments.[5–6] In 2014, a survey showed that 59% of the Brazilian population consume high quantities of alcoholic beverages in a single occasion, with a binge drinking behavior.[4] This alcohol consumption pattern leads to intoxication, increases the number of harmful consequences to the individual and other people, and is considered a risky behavior.

Authors point out that high alcohol consumption reduces workers' performance, which results in an increase in the unemployment rate and low income. The excessive consumption causes problems in the work process, especially in the sphere of its organization,[7–8] given that it is carried out in an attempt to escape mental suffering and emotional overload related to or resulting from the work conditions and work organization imposed by companies. Therefore, some professionals find a way out of these problems in alcohol consumption, which leads to severe cases of alcohol dependence.[9]

This problem calls for strategies to promote health and prevention of diseases from the worker health perspective taking into account the reality of each service. Some authors point out that occupational health services are a place where it is feasible to evaluate workers' alcohol consumption patterns. This strategy has been applied in some places, offering an important opportunity to carry out primary and secondary prevention not only regarding alcohol consumption, but also the decrease in direct and indirect costs originated from alcohol dependence.[9–10]

These actions must begin with programs oriented toward health promotion and disease prevention in work places or worker health services, with the objective of identifying the cases of risky or hazardous consumption and probable dependence. A strategy currently used worldwide and especially in primary care is brief intervention (BI) in combination with motivational interviewing, by applying tools to identify alcohol consumption patterns, such as validated instruments. One example is the Alcohol Use Disorders Identification Test (AUDIT), which aims at identifying people who need special levels of intervention.[10–12]

Motivational interviewing is a clinical style which successfully makes patients evoke their good motivations to bring about behavioral changes according to their interests. The main guiding points in this technique are: resistance to the reflex of mending things; understanding and exploring patients' motivations; and listening to patients with empathy and strengthening them, encouraging hope and optimism.[13]

The objective of the present study was to analyze the effect of a brief intervention on the reduction of alcohol consumption patterns among workers from the worker health perspective.

METHODS

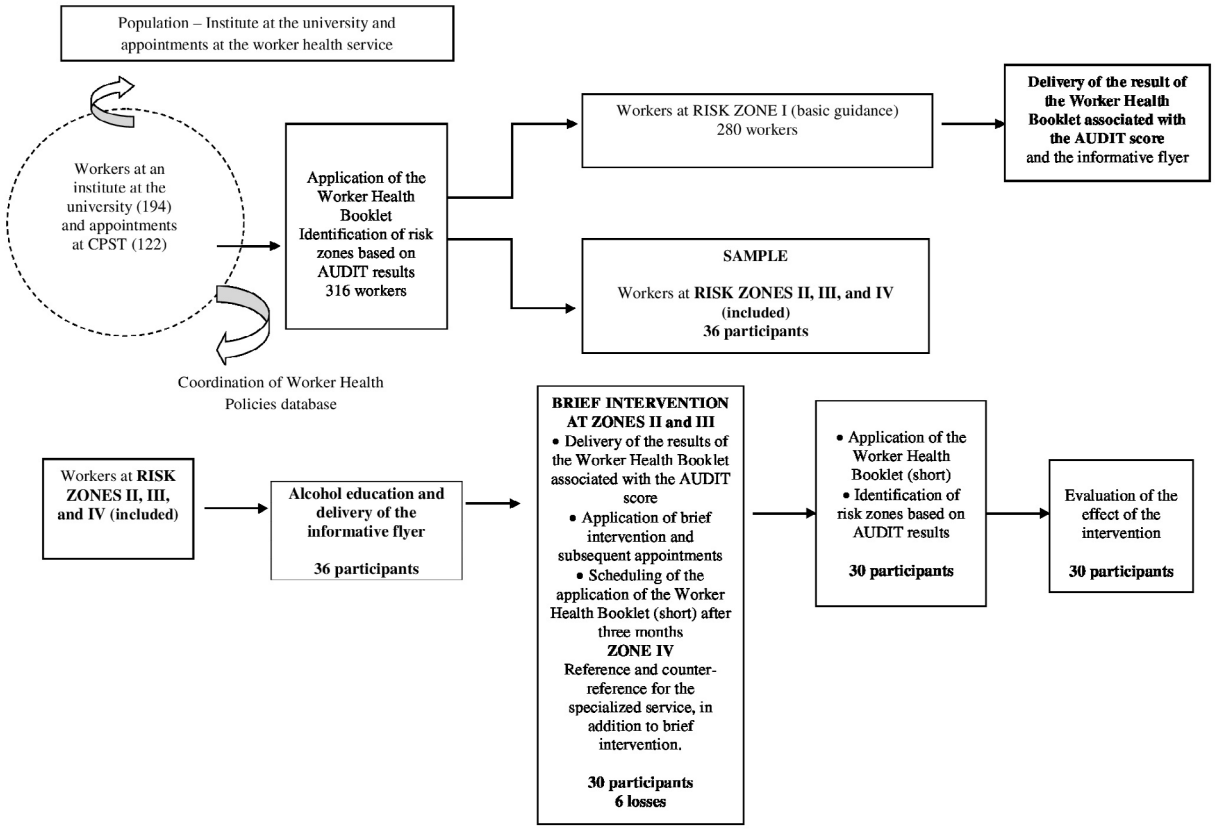
This was a quasi-experimental, prospective, and nonrandomized study, it was carried out between October and December 2016 at the Coordination of Worker Health Policies (CPST, as per its abbreviation in Portuguese) of a Brazilian public university, located in the north region of the city of Rio de Janeiro, Brazil, by using the Worker Health Booklet. The study involved 100 questions related to health and quality of life in general, in addition to the AUDIT questionnaire, which is part of a health promotion policy institutionalized by the university, to establish a broader diagnosis of the workers' health and make an analysis of alcohol-related problems feasible.

The study population was 316 workers that filled out the Booklet, and the sample was 36 participants, with nonrandom allocation. These were selected based on the AUDIT questionnaire score, and the alcohol consumption pattern was defined as follows: a score from 8 to 15 indicated risky consumption; a score between 16 and 19 pointed to hazardous consumption; and a score equal to or higher than 20 meant probable dependence, as shown in Figure 1.[11]

The workers who obtained a score related to high-risk alcohol consumption were invited by one of the researchers, by e-mail or telegram, to go to CPST on a scheduled day and time. The sample included active workers at the university with an AUDIT score higher than 8 points and excluded those on vacation and those who missed BI sessions or did not attend the follow-up appointment three months after the intervention (n=6).

Data collection was carried out by the researcher between December 2015 and June 2016.

The evaluation of workers was performed using motivational interviewing associated with BI through stages of change, which describes what people think about a new health behavior standard related to alcohol consumption reduction.



CPTS= Coordination of Worker Health Policies

Figure 1 – Population and sample

One of the forms of evaluating the stage of change of the drinking habit was the "Readiness Ruler", which gives patients a score from 1 to 10, with 1 meaning no importance and 10 indicating very important. According to this instrument, people who have lower scores are at a precontemplation stage, those whose score is between 4 and 6 are at a contemplation stage, and those with higher scores can be considered ready for the change action.

The BI elements were set according to the score of the stage of change. The important point was initiating the advice so that it matched the motivation patients had at that moment, adopting a sequence after the BI – feedback, information, goal selection, advice, and encouragement – that should be followed, with few alterations dictated by the current stage of change.[11]

Three BI sessions were carried out, with a one-week interval between consecutive sessions. In the first session, after establishing the workers' ability for habit change, they were asked to mention three benefits of reducing alcohol consumption. In the second session, three problem situations that led workers to drink alcohol were examined and strategies to deal with or avoid these situations were discussed. The third session was dedicated to listing the means to get to know people who exercised low-risk consumption or were abstemious, how to deal with boredom, and how to remember the plan of change. At the end of this session, the plan of habit change was handed to workers and the follow-up appointment was scheduled so the period between it and the third session was three months.[11–12]

During the BI and the maintenance period, workers were oriented about relapses and lapses. If either of them occurred, they would be assisted in the spontaneous demand regimen at the service.[14]

After three months, the adapted AUDIT version was applied again to assess alcohol consumption in this period. The workers that kept the pattern or did not reduce their alcohol consumption were referred to the specialized service and informed that they could come back whenever they needed and would be invited for monitoring.

Analysis variables were sociodemographic, occupational, and alcohol consumption pattern-related characteristics. Sociodemographic variables were organized into gender, age group, skin color, marital status, level of education, per capita income expressed as number of minimum wages taking the value of R$ 780, valid in 2016, as a reference, and religion. Occupational characteristics were grouped into: time of service and function per professional category. The consumption pattern was classified as risky consumption, hazardous consumption, and probable dependence.

Data were stored and analyzed using the Statistics Package for the Social Sciences SSPS® version 21 software. Quantitative variables were presented as means, standard deviations (SD), and absolute and relative frequencies. Variables related to inferential statistics showed normal distribution and were analyzed by applying Fisher's exact test. The nonparametric Wilcoxon test, whose result is expressed by the Z value, was used to evaluate the difference in the AUDIT mean scores before and after the BI and thus examine its effect. The used level of significance was $p<0.05$.[15]

The present study complied with the Brazilian National Health Council Resolution No. 466/12, and all the participants signed a free and informed consent form.

RESULTS

Regarding the consumption pattern before and after the BI, it was found that 61.1% of the workers initially practiced risky consumption, 11.1% showed hazardous consumption, and 27.8% were classified as having hazardous consumption and probable dependence. All the employees received alcohol education and followed the BI through motivational interviewing, beginning with the state of readiness for habit change. Those who completed the BI sessions and returned after three months reduced the alcohol consumption pattern, moving to the low-risk consumption (56.7%) or risky consumption (43.3%) categories (Table 1).

Table 1 – Alcohol consumption pattern before and after brief intervention according to AUDIT scores of workers at a public university, Rio de Janeiro, RJ, Brazil, 2016. (n=36/30)

Alcohol consumption pattern	AUDIT* before		AUDIT three months after	
	n	%	n	%
Low-risk consumption (score from 0 to 7)	-	-	17	56.7
Risky consumption (score from 8 to 15)	22	61.1	13	43.3
Hazardous consumption (score from 16 to 19)	4	11.1	-	-
Probable dependence consumption (>19)	10	27.8	-	-

* AUDIT = Alcohol Use Disorders Identification Test.

The AUDIT score means obtained before and three months after the BI showed in Table 2 reveal that there was a reduction in the alcohol consumption pattern – the AUDIT score mean for the period before the BI was 15.8 ±8.4 and the value calculated three months after the intervention was 7.1 ±3.5. The Wilcoxon test demonstrated that the ranking of the AUDIT scores obtained three months after the BI was lower than the initial result, with Z=-4.709 and p<0.000, indicating a positive effect of the BI.

Men showed a significant reduction in alcohol consumption, with an average score before the BI of 17.0 ±0.8, changing to 8.1 ±3.4 three months after the intervention (Z=-3.927, p<0.000). Those older than 50 years had an average AUDIT score of 17.2 ±9.7 before the BI and 6.8 ±3.5 after three months (Z=-3.297 and p<0.05). The participants who declared to have white skin showed a decrease in the average AUDIT score from 16.9 ±9.2 to 7.1 ±3.6 after the three-month period. Married participants, whose initial average score was 14.2 ±6.9 (Z=-3.921, p<0.05), decreased to 7.4 ±3.7. Workers with higher education or a higher degree had a reduction from 13.7 ±5.4 to 7.1 ±3.1 (Z=-3.829, p<0.001). For participants with an income lower than three minimum wages per capita, the average reduction was from 17.0 ±9.0 to 7.9 ±4.2, and for those who informed their religion, the decrease was from 16.9 ±9.2 to 7.1 ±4.0 (Z=-3.928, p<0.05) (Table 2).

The answers to the questions of the AUDIT questionnaire regarding consumption frequency were one of the variables that showed greater reduction in the score: the mean value before the BI, 3.2 ±0.8, decreased to 1.9 ±1.8 (p<0.000 and Z=-3.880). Concerning the frequency of consumption of five doses or more in a single occasion, the initial mean of 2.9 ±0.9 reduced to 1.2 ±1.1, with p<0.000 and Z=-4.144. Regarding the frequency of binge drinking, the average before the BI was 0.8 ±1.5 and reduced to 0.2 ±0.7 after it, showing a slight decrease, with p<0.017 and Z=-2.379.

Regarding the feeling of guilt or remorse after drinking, the average of 1.2 ±1.6 was reduced to 0.2 ±0.5, with p<0.005 and Z=-2.825. Concerning the incapacity of remembering what happened because of the effects of alcohol, the means were 1.1 ±1.4 and 0.2 ±0.4, with p<0.003 and Z=-2.965. All of the items showed a p-value lower than 0.05, except the two last questions about “damages caused by alcohol consumption” (p=0.053) and “whether someone suggested stopping drinking” (p=0.194) (Table 3).

Table 2 – Alcohol Use Disorders Identification Test scores regarding the socioeconomic profile of workers at a public university before and after a brief intervention, Rio de Janeiro, RJ, Brazil, 2016. (n=30)

Sociodemographic items		n	mean	SD†	min	max	p-value	Z‡
Gender								
Female	Before	9	12.2	5.9	8	27	0.008	-2.666
	After	9	4.8	2.5	1	9		
Male	Before	27	17.0	8.9	8	38	0.000	-3.927
	After	21	8.1	3.4	1	15		
Age group								
From 30 to 49 years old	Before	17	14.4	6.6	8	30	0.001	-3.416
	After	16	7.4	3.5	1	15		
Over 50 years old	Before	19	17.2	9.7	8	38	0.001	-3.297
	After	14	6.8	3.5	1	12		
Skin color								
White	Before	21	16.9	9.2	8	38	0.000	-3.726
	After	19	7.1	3.6	1	15		
Non white	Before	14	15.2	7.7	8	36	0.003	2.965
	After	11	7.2	3.4	4	13		
Marital status								
Married	Before	25	14.2	6.9	8	34	0.000	-3.921
	After	20	7.4	3.7	1	15		
Not married	Before	11	19.6	10.6	8	38	0.007	-2.675
	After	10	6.6	3.2	2	12		
Level of education								
Up to high school	Before	16	18.5	10.7	8	38	0.005	-2.807
	After	10	7.2	4.2	1	15		
Higher education or higher	Before	20	13.7	5.4	8	27	0.000	-3.829
	After	20	7.1	3.1	1	13		
Per capita income								
Up to 3 wages	Before	18	17.0	9.0	8	36	0.002	-3.065
	After	12	7.9	4.2	1	15		
Over 4 wages	Before	14	15.3	8.5	8	38	0.001	-3.184
	After	14	6.6	3.2	1	12		
Religion								
Yes	Before	26	16.9	9.2	8	38	0.000	-3.928
	After	20	7.1	4.0	1	15		
No	Before	9	12.3	5.1	8	22	0.008	-2.668
	After	9	7.7	1.8	5	10		

†SD = standard deviation; ‡Z = Wilcoxon test.

Table 3 – Scores obtained before and after a brief intervention, according to Alcohol Use Disorders Identification Test questions, of workers at a public university, Rio de Janeiro, RJ, Brazil, 2016. (n=36/30)

Alcohol Use Disorders Identification Test questions		Mean score before and after BI					Difference of the means	
		n	mean	SD*	min	max	p-value	Z †
Consumption frequency	Before	36	3.2	0.8	1	4	0.000	-3.880
	After	30	1.9	1.8	0	4		
Number of standard doses on a typical day	Before	36	2.2	1.2	0	4	0.015	-2.431
	After	30	1.4	1.1	0	4		
Frequency of five or more standard doses	Before	36	2.9	0.9	0	4	0.000	-4.144
	After	30	1.2	1.1	0	3		
Frequency of binge drinking	Before	36	0.8	1.5	0	4	0.017	-2.379
	After	30	0.2	0.7	0	3		
Did not do what was expected because of alcohol	Before	36	0.7	1.3	0	4	0.007	-2.699
	After	30	0.1	0.4	0	2		
Need to drink in the morning	Before	36	0.4	0.1	0	4	0.038	-2.070
	After	30	0.0	0.0	0	0		
Feeling of guilt after drinking	Before	36	1.2	1.6	0	4	0.005	-2.825
	After	30	0.2	0.5	0	2		
Incapacity of remembering what happened last night	Before	36	1.1	1.4	0	4	0.003	-2.965
	After	30	0.2	0.4	0	1		
Causes damages to self or other people for drinking	Before	36	0.8	1.5	0	4	0.053	-1.933
	After	30	0.4	0.8	0	2		
Someone suggested stopping drinking	Before	36	2.0	1.9	0	4	0.194	-1.299
	After	30	1.6	1.9	0	4		

*SD = standard deviation; †Z = Wilcoxon test.

DISCUSSION

The results allowed to observe that, regardless of the sociodemographic and occupational characteristics of the participants, there was a reduction in the alcohol consumption pattern as indicated by the AUDIT mean scores. Consumption frequency and quantity drunk decreased the most, and need to drink in the morning after binge drinking was the variable which had negative results three months after the BI using motivational interviewing.

The results of the present study revealed that the BI technique in association with motivational interviewing impacted on the reduction of the alcohol consumption pattern positively in the examined workers. The authors confirmed the viability of alcohol consumption screening and the effect on the reduction of the consumption by workers, corroborating some international studies carried out in worker health services of some companies.[7,9,16–17]

The workers that had a high risk of alcohol consumption reduced their excessive consumption, although they did not consider themselves as people who drink too much. Some studies show that

the decrease is higher in the three first months after the BI and tends to diminish over time, which emphasizes the need for worker health teams to monitor the participants. These studies also reported that the consumption reduction after the BI was greater among the participants that had high-risk consumption (10% to 15%), hazardous consumption, and probable dependence (10% to 19%).[7]

The difference between AUDIT scores before and three months after the BI indicated a positive result, showing statistical significance, with a p-value lower than 0.001 (Z=-4.709) for the difference between scores obtained before (mean = 15.83) and after (mean = 3.46), especially among men. A study developed in Sweden reported similar results, with a more pronounced effect on men.[7,18–21] Additionally, it is important to highlight the other characteristics of the sample profile. The consumption reduction obtained by applying the BI technique was higher in participants 50 years old or older, who declared to have white skin, were married, had higher education or a higher degree, had a per capita income lower than three minimum wages, and declared to have a religion.[22]

Concerning the function, administrative technicians with a college degree and lecturers were those who showed the most significant reductions in average scores before and after the BI. However, regarding the time working in the university, there was a consumption decrease with statistical significance, regardless of the time.

It was observed that consumption frequency was one of the variables that showed greatest score reduction, followed by number of standard doses on a typical day, and frequency of consumption of five or more doses in a single occasion, leading to a decrease in alcohol-related damages. A similar result was found in another study that, although did not mention a significant effect on alcohol consumption, reported a considerable reduction in the consumption frequency of the examined workers.[9]

The question about the need to drink alcohol in the morning after having drunk a lot in the night before showed more significant results, given that the mean was equal to zero, that is, no worker mentioned to have this desire in the evaluation carried out three months after the BI. Studies found that consumption reduction after BIs was higher among people who had a risky consumption, hazardous consumption, or probable dependence. It is important to stress the need to keep the follow-up and monitoring of the examined workers.[7–8,15–20]

The present study emphasized the importance of carrying out screening procedures in worker health services asking health-related questions in periodic tests, as exemplified by the Worker Health Booklet in association with the AUDIT questionnaire. This strategy allows to obtain more reliable answers regarding alcohol consumption and higher adherence to the treatment, allowing to standardize team care. Some investigations also revealed a relationship between alcohol consumption and risk and protective factors for alcohol, in addition to periodic tests and pre-employment examinations in workplaces.[9,15–16]

The authors stress that nurses play a fundamental role in screening the alcohol consumption pattern and performing the BI in association with motivational interviewing in worker health teams. This way to approach patients regarding the discussion on the behavior of alcohol consumption by nurses is facilitated by empathy and the development of a bond between patients and professionals. Studies that compared the role played by nurses with the function exercised by other professionals verified that the former obtain more satisfactory results.[9–10,17] However, some barriers were reported by nurses, such as lack of time, loss of patients' trust, and lack of adequate information.[9–10,17] In this context, the BI technique values the care routine of these professionals, especially in the worker health sphere.

Some limitations of the present study must be emphasized, such as the difficulty of some workers to return to the service three months after the initial evaluation and the follow-up of the participants referred to the specialized service.

CONCLUSION

The present study analyzed the effects of the BI technique on the reduction of the alcohol consumption pattern (risky and hazardous consumption and probable dependence) among workers, which proved positive in the examination carried out three months after the initial screening and, most importantly, emphasized the role of nurses in performing the tests, providing resources to systematize nursing appointments in primary health care.

Additionally, the study allowed to identify the sociodemographic and occupational characteristics of workers that consume alcohol, allowing to outline health promotion strategies with CPST to screen workers' alcohol consumption pattern.

The results confirm the importance of developing more studies focused on prevention and health promotion in worker health services by occupational nurses, together with multiprofessional teams, through the application of BIs.

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NOTES

ORIGIN OF THE ARTICLE

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CONTRIBUTION OF AUTHORITY

Study conception: Brites RMR.
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Data analysis and interpretation: Brites RMR, Portela L, Abreu AMM.
Discussion of results: Brites RMR, Abreu AMM.
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ETHICS COMMITTEE IN RESEARCH

The study was approved by the Research Ethics Committee of the Anna Nery School of Nursing at the *Universidade Federal do Rio de Janeiro* as per Ethical Appreciation Presentation Certificate (CAAE, as per its abbreviation in Portuguese) No. 48181915.1.0000.5238.

CONFLICT OF INTERESTS

No any conflict of interest.

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