

ORIGINAL RESEARCH

Evaluation of an intervention to reduce health professional stigma toward drug users: A pilot study

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Abstract

Background: Stigma underpins unfavorable attitudes toward many traditionally underserved groups in health care. Although training for Screening, Brief Intervention, and Referral to Treatment (SBIRT) has been shown to change provider attitudes, none have to date examined the effectiveness of training modules that directly address stigma toward drug users. The aim of this paper is to evaluate the impact of SBIRT training plus the addition of 2 anti-stigma training modules on stigma regarding drug use and drug users among Brazilian health professionals. Participants included community health workers, nursing assistants, nurses and other health professionals.

Methods: A pretest-posttest wait-list design with intervention and comparison cities. The follow-up was 3 months. Participants included 95 primary health care professionals, of whom 54 received SBIRT training plus training in two anti-stigma modules (intervention group) and 41 received assessments only (comparison group). The posttest was administered 3 months following the training. Baseline and outcome included validated and non-validated measures of general attitudes and beliefs about drug users. In addition, participants responded to vignettes designed to assess stigma in the context of ethical issues, which assessed how much participants attributed responsibility for the onset and resolution of substance abuse to the patients themselves—the degree to which they “moralized” drug use.

Results: There were marked baseline differences between experimental and comparison communities. However, nearly all (range 72%-90%) providers held a uniformly high “moralized” view of drug dependence. These attributions were not changed by the trainings. Likewise, there were no significant differences between intervention and control groups when we examined how much their stigma toward drug users changed after the anti-stigma module.

Conclusions: This preliminary study found no intervention effects; it did find, however, that most professionals blamed drug users for their addiction. Because SBIRT seeks to embed intervention into settings that have historically overlooked and undertreated substance abuse, we believe that future research is warranted in order to better understand and address stigma. Research could explore what predicts stigmatized views of drug users, and what sorts of interventions reduce stigma.

Key words

Mass screening, Brief intervention, Primary health care, Education, Social stigma, Attitudes

1 Introduction

The health and public health community has failed to meaningfully address substance abuse. The misuse of alcohol and other drugs is prevalent worldwide and ranks among the most important public health problems^[1]. Substance use is a risk factor for psychological, social and legal problems^[2-7]. It is also related to important health outcomes such as cardiac conditions, gastrointestinal cancers and psychiatric illnesses^[1,8]. The lack of action by public health leaders may be in part due to the lack of health professional training in addressing substance abuse^[9] as well as health professional stigmatization of drug users^[10,11], which both contribute to poor implementation of effective treatments^[12].

Several countries are working in partnership with the World Health Organization to train health professionals to perform Screening, Brief Intervention and Referral to Treatment procedures (SBIRT)^[13-15]. SBIRT is a treatment guideline that encourages all health care providers to systematically identify patients that consume unhealthy levels of alcohol and other drugs, provide brief intervention to motivate reductions in consumption, and refer patients who meet criteria for abuse or dependence to more intensive drug treatment.

The literature suggests that screening and brief intervention (SBI) has the greatest potential to reduce the consumption of psychoactive substances if it is targeted at primary and secondary prevention^[14,18,19]. BI is a simple, short counseling intervention. It focuses on changing specific behaviors and can be performed by professionals from a variety of backgrounds^[17]. Intervention efforts in Brazil have coupled BI with systematic use of a screening instrument, such as the ASSIST (Alcohol, Smoking and Substance Involvement Screening Test)^[20]. The ASSIST is used to identify drug and alcohol users, identify patterns of use, and determine the amount of drug use. BI is considered a less intensive level of intervention and is provided to “harmful” or “hazardous” drug users those who use heavily but do not meet criteria for abuse or dependence. Referral to more intensive inpatient or out patient drug treatment (RT) is indicated for persons meeting criteria for drug abuse or dependence^[21]. The WHO international partnership has focused its dissemination efforts on primary health care because it covers the greatest population. Targeting SBIRT efforts at this level of the healthcare system has the greatest chance of reducing population-wide misuse of alcohol, tobacco and other drugs^[3,16,17].

Unfortunately, societal adoption of evidence-based practices is not always achieved quickly^[2]. Dissemination of health interventions depends on the merits of the innovation, the attitudes of health workers, and the stigma they attach to the health condition^[11,22]. Numerous studies have found that negative attitudes of health professionals can slow implementation of new technologies^[22], the quality of services offered, and patient adherence to treatment and prevention activities^[23]. Hence, to encourage health professionals to adopt and implement screening and brief intervention for drug use, training should also focus on changing attitudes^[24].

Stigma involves two key psychological components: the recognition of a difference between individuals based on some distinguishable characteristic or mark, and the consequent devaluation of the individual with the characteristic. Stigma can directly threaten physical well-being, if accompanied by violence. It can also indirectly cause harm by limiting stigmatized persons’ access to health care, education, employment and housing^[25]. The psychological and social consequences of stigma can have a substantial and fundamental impact on quality of life^[26,27].

Research in health care has associated health care provider stigma with poor implementation of preventive interventions, slow adoption of appropriate approaches to health care issues, and subsequently reduced access to effective interventions on the part of stigmatized individuals^[11,28]. There has been a growing body of research on strategies aimed at reducing the stigmatization process, especially among people with mental illness^[29-33]. These studies arrived at three strategies to reduce the stigma associated with mental illness: 1) provide education to dispel the myths about mental illness, 2) increase interactions between people with mental illness and the public in order to challenge public attitudes and 3) expose stigmatizing attitudes and behaviors in the hopes that public outcry will reduce their acceptability^[11,29,30]. These strategies in general aims to change the social perceptions, beliefs and attitudes about people with a considered condition. However, anti-stigma interventions are not widely available or evaluated^[30].

The aim of this paper is to evaluate the impact of two anti-stigma training modules for health care providers engaged in SBIRT. We focused on providing education to dispel myths about drug users, and facilitating positive contact between health care providers and drug users (strategies 1 and 2, listed above). Our primary outcomes included primary health care providers' attitudes toward substance abuse as well as patients with substance abuse problems.

Abbreviations

- 1) SBIRT-Screening, Brief Intervention and Referral to Treatment
- 2) PHC - Primary Health Care
- 3) BI -Brief Intervention
- 4) ASSIST - Alcohol, Smoking and Substance Involvement Screening Test
- 5) QBA- Questionnaire Beliefs and Attitudes of Professional
- 6) QMPH -Questionnaire on Models of Perception of health problems

2 Methodology

2.1 Design

The study was evaluated with a pre-test, post-test wait list comparison group. Both participating communities received SBIRT training. The intervention community received, in addition, 2 anti-stigma training modules. Both groups were evaluated in the same time frame. The control group received the anti-stigma modules after the close of the study.

2.2 Participants

We conducted the study in two cities in Brazil, one located in the state of Rio de Janeiro, the other in the state of Minas Gerais. In both cities the research team met with local health care providers, social service providers, government leaders, and law enforcement to build support for the training and signed agreements to collaborate on health professional training. At this time, one city was assigned to be the intervention city (population 77,432) and the other the comparison city (population 57,390). Both are considered medium-sized cities in Brazil and both provide similar health care services, that follow strict by state and federal guidelines for standards of care.

The study included a convenience sample of 95 primary health clinic (PHC) professionals. Of these, 54 were from the intervention city, and 41 from the comparison city. In the intervention city all PHCs agreed to participate the training, and all of their health care professionals were invited to participate in the project. In the comparison city half of the PHCs (7/13 PHCs in the city) agreed to participate in the training, and all professionals in these PHCs were invited to participate.

The study was approved by the Ethics Committee of the Federal University of Juiz de Fora (UFJF), located on the campus of the University UFJF (096/2011).

2.3 Procedures

The SBIRT training consisted of classroom training and follow-up supervision by research staff and graduate psychology students at a federal university. Health care professionals in the intervention city completed classroom training taught in two modules of four hours each. The first module included theoretical notions about psychoactive substances (use epidemiology, acute and chronic effects), an introduction to the screening tool (ASSIST), as well as practical activities in the application, scoring and interpretation of the instrument. The second module focused on principals of brief intervention

(BI), videos of the use of BI technique in clinical interactions, how to refer drug-dependent patients to more intensive treatment such as specialty care, and interactive discussion/problem solving.

The supervision phase was conducted over a 3-month period. Research staff visited the clinics of professionals who completed the training to conduct fortnightly monitoring and feedback sessions. The researchers reviewed ASSIST and BI logs kept by the trainees and brainstormed strategies for implementing ASSIST, BI, and referral in daily practice. Research staff was available by telephone and e-mail to respond to additional issues faced by professionals.

The two study intervention modules for reducing professional stigma were integrated into the SBIRT training. They employed strategies recommended for dispelling stigma toward people with mental illness, as described above. The education module, which aimed to dispel myths about drug abuse (strategy 1), was featured in the classroom training portion of the SBIRT training. The contact module, which aimed to facilitate positive interactions between health professionals and drug users (strategy 2), occurred during the follow up supervision phase of the SBIRT training. These interactions were stimulated by implementation of the ASSIST screener and BI in the clinics.

2.4 Assessment

We conducted assessments before training (baseline) and following the supervision phase (follow-up), using self-reported questionnaires.

The Socio-Demographic Questionnaire included questions related to gender, age, occupation, length of occupation and education.

The Questionnaire of Beliefs and Attitudes of Professionals (QBA) included 36 questions divided into five scales: 1) self-efficacy (Cronbach's alpha = .73), 2) expectations and beliefs about the effectiveness of BI (Cronbach's alpha = .48), 3) perceived barriers to implementation of BI (Cronbach's alpha = .60), 4) perception of obstacles to the implementation of screening (Cronbach's alpha = .70), 5) confidence in performing the screening and BI (Cronbach's alpha = .75). In the first four scales the response options ranged from "strongly disagree" to "strongly agree" - with scores ranging, respectively, from 1 to 5 on a Likert scale. Responses to the final scale ranged from "no confidence" to "very confident" - with scores ranging, respectively, from 1 to 4 on a Likert scale^[35].

The Questionnaire on Models of Perception of health problems (QMPH) is questionnaire based on the Brickman Model^[15, 36], although the questionnaire is widely used by healthcare researchers, its reliability and validity have not been published. The QMPH identifies, based on attribution of responsibility, individual perceptions of cigarette addiction, alcohol, marijuana, cocaine and crack. The instrument consists of the following questions: "To what extent do you think the patient is responsible for the emergence / evolution of his/her health problems?" and "To what extent do you think the patient is responsible for solving his/her health problems?" As alternative response, a scale (Likert scale) ranging from 1 to 5, where 1 represents "not responsible" and 5 "fully responsible" is offered.

This instrument classifies respondents perceptions on drug use into four models: the medical-doctor model considers the patient as minimally responsible for both the cause and solution of the problem; the compensation model, which is characterized by low allocation of responsibility for the cause of the addiction and high responsibility for the solution; the enlightenment model, which assigns high responsibility for the cause of the high dependence and low responsibility for the solution; the moral model, which gives high responsibility to the patient for the addiction's cause and solution. Moralizing a health condition is a cognitive component in the process of stigmatization^[15, 36]. To evaluate the model, the answers of each participant were re-coded by removing the neutral range and grouping the results between low and high responsibility. The four model views are as shown in Table 2.

Table 1. Brickman Model based on attribution of individual responsibility for the appearance of and solution for the problem.

Accountability for the problem	Accountability for the solution	
	High	Low
High	Moral Model	Compensatory Model
Low	Enlightenment Model	Medical Model

Vignettes were built by the research group from the studies by Link et al (1999)^[37] and by Peluzo and Blay (2008)^[26]. We used three vignettes that consisted of descriptions of 3 hypothetical people who met Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for substance dependence (1 alcoholic, 1 person with marijuana dependence, and 1 person with cocaine dependence). Each vignette was followed by questions assessing dimensions related to stigma. Positive emotional reactions (desire to help, sympathy, affection and compassion) and negative (fear, anger, withdrawal and apathy), triggered by the person described, were evaluated with the following question: "How much do you believe that [the patient] provokes the following emotional reactions in people?" The professionals' belief in recovery and adherence to the treatment of people in the cases described was evaluated with the following question: "How much do you believe this patient can recover? How much you believe this patient can adhere to treatment? The answer choices ranged from 1-7 on a Likert scale from "strongly disagree" to "strongly agree" or "totally disbelieve" to "totally believe"^[38]. For data analysis, the responses of each participant were recoded by withdrawing the neutral from the scale and grouping the results between agree/disagree and believe/disbelieve.

2.5 Data Analysis

Descriptive statistics analyses, such as mean (M), standard deviation (SD) and inferential were performed using SPSS software version 15. To examine differences between the scores of the baseline and the follow-up of the QBA, we used the paired sample T test for data with normal distributions and the nonparametric Wilcoxon test for data with non-normal distributions. To examine difference in scores between the two groups, we used the T-test for independent samples with normally distributed data and the Mann-Whitney test for data with non-normal distributions. For all tests, we used a level of $p < 0.05$ to determine statistical significance. To evaluate within group differences in the QMPH and vignettes pre-and post tests, we used the McNemar 2×2 test for categorical variables for longitudinal analysis. We used the Chi-square test with Fisher exact correction for comparisons between groups.

3 Results

Table 2 depicts participant characteristics including gender, age, occupation, education, age and length of employment. Nearly all respondents were female. Most participants were community health agents (81.5% of the intervention and 63.4% of the control group). The average age of participants from both groups was 34.5 years.

Table 3 displays pre- and post QBA scores of professional attitudes for both groups. There was a statistical significant increase in perceived barriers to screening in the intervention group from baseline ($M = 21.16$, $SD = 4.24$) to follow-up ($M = 23.24$, $SD = 4.37$; $p = 0.006$). On the other hand, the intervention group decreased in perceived obstacles to brief intervention from baseline assessment ($M = 26.33$) to follow-up ($M = 23.88$; $z = -2.243$; $p = 0.025$). There were no other significant changes in attitudes related to training in screening and brief intervention.

Table 2. Description of the sample of Health professionals. Intervention Group (n = 54) Comparison Group (n = 41)

Population Characteristics		Intervention Group		Comparison Group	
Socio-demographic Data		n	%	n	%
Gender	Female	54	100	36	87.8
	Male	0	0	5	12.2
Occupation	Community Health Agent	44	81.5	26	63.4
	Nursing assistant	3	5.6	8	19.5
	Nurse	3	5.6	2	4.9
	Others*	4	7.4	5	12.2
	Basic Education	0	0	1	2.4
Education	High School	23	42.6	20	48.8
	Technical Education	13	24.1	11	26.8
	College	12	22.2	4	9.8
	Graduate Education	6	11.1	5	12.2
	Age [M (SD)]	34.53(7.69)		34.54(9.14)	
Occupation Time [M(SD)]	6 (4.53)		7.44(5.21)		

Note. M = mean / SD = standard deviation / n = number of participants / (%) = percentage of the number of participants.

* Includes professionals in other categories, such as dentists, dental assistants and nutritionists

Table 3. Attitudes of healthcare professionals regarding Prevention Practices (SBIRT). Intervention Group (n = 54) Comparison Group (n = 41)

	Intervention Group		Comparison Group	
	Baseline	Follow-up	Baseline	Follow-up
Self Efficacy	17.93	16.71	15.46	15.52
Screening barriers	22.82*	23.21*	21.16	22.88
Obstacles BI	16.97**	15.89**	26.33	23.88
Confidence SBI	19.79	17.97	29.57	28.36
Expected BI	14.09	17.11	23.02	24.02

Table 4 displays the proportions of health professionals who believe that persons are themselves responsible for the onset and resolution of their own substance abuse, by type of substance abused (see Table 4). In general, most professionals held this “moral” perspective on substance abuse, from a low of 72.2% of professionals in the intervention group at post-test for alcoholism, to a high of 90% of professionals in the comparison group at posttest for crack cocaine. Although, in general, the intervention group appeared to have lower percentages of professionals that held this moral perspective, there were no statistically significant differences at baseline or at follow up across groups.

Table 4. Professionals who have a moral model of perception of substance dependence. Intervention Group (n = 54) Comparison Group (n = 41)

Condition	Intervention Group				Comparison Group			
	Baseline		Follow-up		Baseline		Follow-up	
	N	%	n	%	N	%	N	%
Smoking	41	77.4	43	81.1	34	87.2	35	89.7
Alcoholism	40	74.1	39	72.2	32	82.1	33	84.6
Marijuana	42	82.4	38	74.5	35	85.4	36	87.8
Cocaine	43	82.7	39	75.0	35	85.4	36	87.8
Crack	43	82.7	41	78.8	35	87.5	36	90.0

The vignettes on stigma assessed respondents' emotional reactions to patients with substance dependence (see Table 5). No statistically significant difference was found for the pretest-posttest analysis of positive reactions. The sole significant between-group difference was found in the reaction of compassion for the alcohol vignette at follow-up ($\chi^2= 11.663, P <0.004$). Contrary to our study hypothesis, at follow up, most (75.6%) participants in the comparison group reported feeling compassion for alcoholics compared to 46.3% of participants in the intervention group. At baseline most professionals agreed that the substance dependent cases would arouse negative emotional reactions in people and this did not change following intervention (see Table 6).

Table 5. Description of Emotional Reactions (Positive Reactions)

Intervention	Drug	N	Desire to Help		Sympathy		Affection		Compassion		
			Dis.	Ag.	Dis.	Ag.	Disc.	Ag.	Dis.	Ag.	
Group	Alcohol	Bsl	54	18.5	51.9	53.7	11.1	50	22.2	13.0	68.5
		Flw	54	16.7	55.6	59.3	13.0	50	14.8	22.2*	46.3*
	Cocaine	Bsl	54	16.7	53.7	51.9	11.1	51.9	18.5	16.7	66.7
		Flw	54	24.1	48.1	59.3	11.1	46.3	25.9	22.2	51.9
	Marijuana	Bsl	54	13.0	53.7	46.3	14.8	44.4	13.0	13.0	64.8
		Flw	53	24.5	45.3	45.3	15.1	49.1	24.5	20.8	50.9
Comparison Group	Alcohol	Bsl	41	24.4	51.2	63.4	4.9	51.2	12.2	12.2	61.0
		Flw	41	9.8	51.2	48.8	17.1	46.3	17.1	2.4*	75.6*
	Cocaine	Bsl	41	26.8	53.7	61.0	7.3	58.5	14.6	7.3	68.3
		Flw	41	26.8	43.9	48.8	17.1	48.8	22.0	22.0	58.5
	Marijuana	Bsl	41	22.0	53.7	48.8	12.2	46.3	22.0	24.4	48.8
		Flw	41	31.7	43.9	39.0	22.0	39.0	19.5	29.3	48.8

Note. Dis. = Disagree. Ag. = Agree. Bsl = Baseline Flw = Follow-up

*p <0.05-statistically significant difference for Chi-square test with Fisher exact correction.

Table 6. Description of Emotional Reactions (Negative Reactions)

Intervention	Drug	N	Fear		Anger		withdrawal		Indifference		
			Dis.	Ag.	Dis.	Ag.	Dis.	Ag.	Dis.	Ag.	
Group	Alcohol	Bsl	54	14.81	57.41	11.11	72.22	14.81	68.52	12.96	53.70
		Flw	54	9.26	70.37	5.56	68.52	12.96	66.67	12.96	62.96
	Cocaine	Bsl	54	9.26	74.07	9.26	70.37	9.26	64.81	22.22	55.56
		Flw	54	11.11	68.52	9.26	70.37	12.96	70.37	18.52	55.56
	Marijuana	Bsl	54	9.26	59.26	11.11	64.81	11.11	48.15	18.52	51.85
		Flw	53	15.09	64.15	15.09	64.15	15.09	58.49	11.32	58.49
Comparison Group	Alcohol	Bsl	41	4.88	65.85	7.32	82.93	7.32	78.05	7.32	68.29
		Flw	41	4.88	73.17	4.88	78.05	4.88	82.93	7.32	73.17
	Cocaine	Bsl	41	7.32	70.73	14.63	70.73	12.20	68.29	19.51	63.41
		Flw	41	2.44	82.93	4.88	78.05	2.44	80.49	7.32	70.73
	Marijuana	Bsl	41	17.07	58.54	21.95	58.54	21.95	58.54	21.95	56.10
		Flw	41	12.20	63.41	12.20	68.29	14.63	68.29	17.07	51.22

Note. Dis. = Disagree Ag. = Agree Bsl = Baseline Flw = Follow-up

As for the professional's belief in the recovery and treatment adherence by people portrayed in the vignettes, there was a statistically significant difference in relation to belief in the recovery of patient dependent on cocaine among groups at baseline ($\chi^2 = 6.108, p < 0.043$). While 21.95% of the professionals in the comparison group do not believe in the recovery of patient dependent on cocaine, only 5.56% of the professionals in the intervention group disbelieve in it. And while 65.85% of the professionals in the comparison group believe patient dependent on cocaine can recover from cocaine dependence, 74.07% of the professionals in the intervention group believe cocaine addicts can recover. There were no significant statistical differences between the municipalities in relation to their beliefs about how well patients could adhere to treatment.

Comparing the longitudinal results, there was a statistically significant difference for adherence to the treatment of patient dependent on cocaine in the intervention group (McNemar test = 9,571, $p < 0.023$). Data indicate a decline in the belief of the intervention group professionals on the adherence to treatment on the part of cocaine addict. At baseline, 5.56% of the professionals believed patients dependent on cocaine would not adhere to treatment, and 66.67% believed cocaine-dependent patients would adhere to treatment, whereas in the follow-up 22.64% believed cocaine dependent patients would not adhere to treatment and only 45.28% believed they would adhere (see Table 7).

Table 7. Professionals' belief in recovery and adherence to treatment for substance dependence

Intervention	Drug		N	Recovery		Adherence	
				Disb.	Bel.	Disb.	Bel.
Group	Alcohol	Bsl	54	3.70	74.07	14.81	62.96
		Flw	54	16.67	61.11	12.96	53.70
	Cocaine	Bsl	54	5.56*	74.07*	5.56**	66.67**
		Flw	53	18.87	62.26	22.64**	45.28**
	Marijuana	Bsl	54	9.26	75.93	14.81	66.67
		Flw	53	13.21	58.49	16.98	49.06
Comparison Group	Alcohol	Bsl	41	7.32	75.61	9.76	75.61
		Flw	41	9.76	60.98	17.07	53.66
	Cocaine	Bsl	41	21.95*	65.85*	14.63	65.85
		Flw	41	31.71	43.90	34.15	46.34
	Marijuana	Bsl	41	7.32	73.17	17.07	65.85
		Flw	41	21.95	56.10	17.07	58.54

Note. Disb. = Disbelieve Bel. = Believe Bsl = Baseline Flw = Follow-up

* $p < 0.05$ -statistically significant difference for Chi-square test with Fisher exact correction.

** $p < 0.05$ -statistically significant difference in McNemar 2x2 test.

4 Discussion

Pre-intervention assessments of stigma across both study groups found that most primary health care professionals took a highly moralistic stance toward drug dependence and recovery. Other study outcomes were mixed and did not suggest that our interventions reduced stigma toward people with drug problems. The literature suggests that decreasing moralization of drug use and improving staff attitudes toward drug users enhance adoption of new health care practices^[15, 39]. Our study failed to achieve this and exactly how to do so remains unanswered.

The findings suggest that health professionals view substance use as a moral issue. These data are similar to others studies that used the same measures used in the present study^[15, 38]. The failure of our intervention to reduce stigma is perhaps due

to the complex process of stigmatization^[40]. It is not only an interpersonal process, but is also a social construction made up of historical and cultural forces and reinforced by stereotypes, values and ideologies which have proven to be quite immune to information that contradicts them^[25, 27]. In order to change stigma it might be necessary to conduct longer, more intense interventions that address a variety of attitudes and behaviors. These could include providers' attitudes toward drug users, family and cultural indoctrination about drug use and dependence, and prior experiences with drug users. It will be important to test promising intervention in randomized controlled trials. Interventions that prove to be effective could be integrated into pre- and post-graduate curricula for the training of health and substance abuse treatment professionals.

After more than 25 years of study on SBIRT, there is an increasing focus on dissemination and implementation^[21]. Training should not be restricted to the transmission of knowledge, but should also focus on changing attitudes and reducing stigma. The beliefs and attitudes of health professionals are extremely important as these actors are ultimately responsible for implementing these practices^[11, 21, 24].

Our study has a number of limitations that prevent conclusions regarding causal relationships. Our quasi-experimental study design included volunteer participants from two cities that were not randomly assigned to intervention and control conditions. There were baseline group differences in demographic and attitude measures that may have accounted for our differences at follow up. The anti-stigma interventions were included with other SBIRT training modules which meant it was not possible to evaluate the effects of the anti-stigma modules alone. We had a small number of participants which may not have provided sufficient power to examine the effects of the intervention. Although our interventions were based on recommendations from the research literature, actual tried and true interventions do not yet exist.

Despite those limitations, this study is an important step forward since it contributes to understanding the process of implementing the SBIRT, assesses and identifies high levels of stigmatization of substance dependence among health professionals, and is the first published study that proposes and evaluates the use of strategies to reduce stigma in the context of implementation of SBIRT.

The fact that stigma is now being addressed in research and in public policies is significant. It is important to ensure quality health care for every citizen with any health condition^[1]. However, the stigmatization process is quite complex. It is not only an interpersonal process, but is also a social construction made up of historical and cultural forces and reinforced by stereotypes, values and ideologies which prove to be quite immune to information that contradicts them^[25, 27]. The anti-stigma strategies we employed included education and direct contact with stigmatized groups. These strategies are described in the literature as potentially effective, however, research in this area is new and full of gaps^[30].

5 Conclusions

The fact that stigma is now being addressed in research and in public policies is significant. It is important to ensure quality health care for every citizen with any health condition^[1]. However, the evidence base on effective stigma reduction strategies is underdeveloped, especially in addictions treatment^[10, 29, 30]. The present study was an initial exploration into a new area of research for substance abuse treatment. New studies that explore how to diminish stigma in a variety of substance abuse treatment settings, not only primary care settings seeking to implement SBIRT, are urgently needed. Due to the complexity of social stigma, longer and more intense interventions may be necessary.

Authors' Contributions

MC participated in the study design, data collection, statistical analysis and drafted the manuscript. TM coordinated the study, participated in study design, data analysis and helped draft the manuscript. LM participated in data analysis. KR helped draft the manuscript. All authors read and approved the final manuscript. This article is based on the MC's dissertation.

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References

- [1] World Health Organization. Expert Committee on Problems Related to Alcohol Consumption. Geneva: World Health Organization, 2007.
- [2] Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro, MG. AUDIT: the alcohol use disorders identification test: guidelines for use in primary care. Geneva: World Health Organization, 2001.
- [3] Humeniuk R, Poznyak V. Intervenção Breve para o Abuso de Substâncias: Guia para Uso na Atenção Primária à Saúde. Genebra: Organização Mundial de Saúde, 2004.
- [4] World Health Organization. Handbook for the documentation of interpersonal violence prevention programmes. Geneva: World Health Organization, 2004.
- [5] Day VP, Telles LEB, Zoratto PH, Azambuja MRF, Machado DA, Silveira MB et al. Violência doméstica e suas diferentes manifestações. Revista de Psiquiatria do Rio Grande do Sul [Internet], Porto Alegre. 2003; 25(suppl.1): 9-21. Available from: <http://www.scielo.br>.
- [6] Chalub M, Telles LEB. Álcool, drogas e crime. Revista Brasileira de Psiquiatria. 2006; 28: 69-73.
- [7] Pechansky F, Duarte PAV, Boni RB. Uso de bebidas alcoólicas e outras drogas nas rodovias brasileiras e outros estudos. Porto Alegre: Secretaria Nacional de Políticas sobre Drogas, 2010.
- [8] Sousa TRV, Correa E, Stampe, MZ, Pôrto Junior SS, Boni, R. Custos dos acidentes de trânsito com vítimas associados ao uso de álcool em Porto Alegre In Uso de bebidas alcoólicas e outras drogas nas rodovias brasileiras e outros estudos. Volume 1. Sessão B. 1ª Edição. Editado por Pechansky F, Duarte PAV, Boni RB. Porto Alegre: Secretaria Nacional de Políticas sobre Drogas, 2010: 100-110.
- [9] Luis, MAV, Mendes IAC, Carvalho EC, Mamede MV, Wright MGM, Chisman AM. Experiencia de cooperación entre universidad y organización internacional para capacitar enfermeros docentes de La America Latina para La investigación del fenómeno de las drogas. Revista Latino-Americana de Enfermagem. 2004; 12: 307-315. PMID:15303182 <http://dx.doi.org/10.1590/S0104-11692004000700003>
- [10] Palm J, Moral concerns – treatment staff and user perspectives on alcohol and drug problems. PhD thesis. University of Stockholm, Department of Criminology, 2006.
- [11] Corrigan PW. How Stigma Interferes With Mental Health Care. American Psychologist 2004; 59(7): 614-625. PMID:15491256 <http://dx.doi.org/10.1037/0003-066X.59.7.614>
- [12] Formigoni MLOS. A Intervenção Breve na Dependência de Drogas. Lemos: São Paulo, 1992.
- [13] Furtado EF, Corradi-Webst CM, Laprega, MR: Implementing brief interventions for alcohol problems in the public health system in the region of Ribeirão Preto, Brazil: evaluation of the PAI-PAD training model. Nordic studies on alcohol and drugs. 2008; 25(6): 539-551.
- [14] Madras BK, Compton WM, Avula D, Stegbauer T, Stein LB, Clark HW. Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: Comparison at intake and 6 months later. Drug and Alcohol Dependence. 2009; 99: 280-295. PMID:18929451 <http://dx.doi.org/10.1016/j.drugalcdep.2008.08.003>
- [15] Ronzani TMR, Mota, DCB, Souza ICW. Prevenção do uso de álcool na atenção primária em municípios do estado de Minas Gerais. Revista de Saúde Pública. 2009; 43(1): 51-61. PMID:19669065
- [16] Aalto M, Pekuri P, Seppä, K. Primary health care professionals' activity in intervening in patients' alcohol drinking during a 3-year brief intervention implementation project. Drug and Alcohol Dependence. 2003; 69(1): 9-14. [http://dx.doi.org/10.1016/S0376-8716\(02\)00228-4](http://dx.doi.org/10.1016/S0376-8716(02)00228-4)
- [17] Babor TF, Higgins-Biddle JC. Brief Intervention for hazardous and harmful drinking. Geneva: World Health Organization, 2001.
- [18] Bertholet N, Faouzi M, Gmel G, Gaume J, Daepfen JB. Change talk sequence during brief motivational intervention, towards or away from drinking. Addiction 2010; 105(12): 2106–2112. PMID:20840175 <http://dx.doi.org/10.1111/j.1360-0443.2010.03081.x>
- [19] Kaner EF, Beyer F, Dickinson HO, Pienaar E, Campbell F, Schlesinger C et al. Effectiveness of brief alcohol interventions in primary care population. Cochrane Database of Systematic Reviews. 2007; 18(2): CD004148.

- [20] Henrique IFS, Micheli D, Lacerda RB, Lacerda LA, Formigoni, MLO. Validação da Versão Brasileira do teste de triagem do envolvimento com álcool, cigarro e outras substâncias (ASSIST). *Revista da Associação Médica Brasileira*. 2004; 50(2): 199-206. PMID:15286871 <http://dx.doi.org/10.1590/S0104-42302004000200039>
- [21] Babor TF, McRee GB, Kassebaum MA, Grimaldi PL, Ahmed K, Bray J. Screening, Brief Intervention, and Referral to Treatment (SBIRT): Toward a Public Health Approach to the Management Substance Abuse. *Substance Abuse*. 2007; 28(3): 7-30. PMID:18077300 http://dx.doi.org/10.1300/J465v28n03_03
- [22] Souza ICW. O profissional da APS e as substâncias de abuso: o papel da capacitação na rotina da assistência. Dissertação de Mestrado, Universidade Federal de Juiz de Fora, Programa de Pós-Graduação em Saúde Coletiva; 2010.
- [23] Berger M, Wagner TH, Baker LC. Internet use and stigmatized illness. *Social Science & Medicine*. 2005; 61(8): 1821-1827. PMID:16029778 <http://dx.doi.org/10.1016/j.socscimed.2005.03.025>
- [24] Babor TF, Caetano R, Casswell S, Edwards G, Giesbrecht N, Graham K et al. *Alcohol: No ordinary, no commodity: Research and public policy*. New York: World Health Organization, 2003.
- [25] Dovidio JF, Major B, Crocker J. Stigma: Introduction and Overview In *The Social Psychology of Stigma*. Volume1, 1 edition. Edited by Heatherton TF, Kleck RE, Hebl MR, Hull JG. The Guilford Press, New York: London. 2003: 1-28.
- [26] Peluso ETP, Blay SL. Public perception of alcohol dependence. *Revista Brasileira de Psiquiatria* 2008; 30(1): 19-24. <http://dx.doi.org/10.1590/S1516-44462008000100004>
- [27] Biernat M, Dovidio, JF. Stigma and Stereotypes. In *The Social Psychology of Stigma*. Volume1, 1 edition. Edited by Heatherton TF, Kleck RE, Hebl MR, Hull JG. The Guilford Press, New York: London. 2003: 88-125.
- [28] Amato, TC, Silveira PS, Oliveira JS, Ronzani TM. Crenças e comportamentos sobre práticas de prevenção ao uso de álcool entre pacientes da atenção primária à saúde. *Estudos e Pesquisas em Psicologia*. 2008; 8(3): 744-758.
- [29] Corrigan PW, River LP, Lundin RK, Penn DL, Uphoff-Wasowski K, Champion J et al. Three Strategies for Changing Attributions about Severe Mental Illness. *Schizophrenia Bulletin*. 2001; 27(2): 187-195. PMID:11354586 <http://dx.doi.org/10.1093/oxfordjournals.schbul.a006865>
- [30] Rüş N, Angermeyer MC, Corrigan PW. Mental illness Stigma: Concepts, Consequences and initiatives to reduce stigma. *European Psychiatry*. 2005; 20: 529-539. PMID:16171984 <http://dx.doi.org/10.1016/j.eurpsy.2005.04.004>
- [31] Tanaka G, Ogawa T, Inadomi H, Kikuchi Y, Ohta Y. Effects of an educational program on public attitudes towards mental illness. *Psychiatry Clin Neurosci*. 2003; 57: 595-602. PMID:14629708 <http://dx.doi.org/10.1046/j.1440-1819.2003.01173.x>
- [32] Penn DL, Kommana S, Mansfield M, Link BG. Dispelling the stigma of schizophrenia: II. The impact of information on dangerousness. *Schizophrenia Bulletin*. 1999; 25(3):437- 446. PMID:10478779 <http://dx.doi.org/10.1093/oxfordjournals.schbul.a033391>
- [33] Morrison JK. The public's current beliefs about mental illness: Serious obstacle to effective community psychology. *American Journal of Community Psychology*. 1980; 8: 697-707. PMID:7211769 <http://dx.doi.org/10.1007/BF00918281>
- [34] Instituto Brasileiro de Geografia e Estatística, IBGE. *Cidades@ 2010*. Available from: <http://www.ibge.gov.br/cidadesat/topwindow.htm?1> Acesso em 01 de abril de 2011.
- [35] Ronzani T M, Amaral MB, Souza-Formigoni MLO, Babor TF. Evaluation of a training program to implement alcohol screening, brief intervention and referral to treatment in primary health care in Minas Gerais, Brazil. *Nordic Studies on Alcohol and Drugs* 2008; 25: 529-538.
- [36] Ronzani TM, Higgins-Biddle JC, Furtado EF. Stigmatization of alcohol and other drug users by primary care providers in Southeast Brazil. *Social Science & Medicine*. 2009; 69(7): 1080-1084. PMID:19692163 <http://dx.doi.org/10.1016/j.socscimed.2009.07.026>
- [37] Link BG, Phelan JC, Bresnahan M, Stueve A, Pescosolido BA. Public conceptions of mental illness: labels, causes, dangerousness, and social distance. *American Journal of Public Health*. 1999; 89(9):1328-1333. PMID:10474548 <http://dx.doi.org/10.2105/AJPH.89.9.1328>
- [38] Silveira OS. Estigmatização do uso de álcool e outras drogas entre profissionais de saúde de Juiz de Fora. Dissertação de Mestrado. Universidade Federal de Juiz de Fora, Departamento de Psicologia, 2010.
- [39] Williams EC, Johnson ML, Lapham GT, Caldeiro RM, Chew L, Fletcher GS et al. Strategies to implement alcohol screening and brief intervention in primary care settings: a structured literature review. *Psychology of Addictive Behaviors*. 2011; 25(2):206-214. PMID:21517141 <http://dx.doi.org/10.1037/a0022102>
- [40] Stangor C, Grandall CS. Threat and the Social Construction of Stigma. In *The Social Psychology of Stigma*. Volume1, 1 edition. Edited by Heatherton, TF, Kleck RE, Hebl, MR, Hull, JG. The Guilford Press, New York: London. 2003: 62-87.