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*Systematic Literature Review*

# Interventions to Reduce Stigma Related to People who Use Drugs: Systematic Review

Joanna Gonçalves de Andrade Tostes[1]
Rafaela Toledo Dias[1]
Andressa Aparecida da Silva Reis[1]
Pollyanna Santos da Silveira[1,2]
Telmo Mota Ronzani[1]

**Abstract:** Interventions to reduce stigma related to people who use drugs can improve their quality of life and adherence to treatment. This review aimed to identify and analyze studies on interventions to reduce the stigma related to people who use drugs. Searches were performed in the following databases, without period delimitation: PubmMed, APA PsycNET, ScienceDirect, Web of Science, and VHL. Considering secondary referencing, we identified a total of 5,488 records. This review covered 28 articles and was based on PRISMA. Although target audiences comprising students and health professionals were predominant, as well as the use of quantitative methods, sample size and interventions varied among studies. The selected studies present considerable methodological limitations. We concluded that no evidence confirms the effectiveness of the proposed interventions and which of them should continue to be applied for this specific aim. It is essential to invest in approaches other than those traditionally adopted.

**Keywords:** stigma, substance use disorders, psychosocial intervention, systematic review

# Intervenções para Redução do Estigma Relacionado às Pessoas que Usam Drogas: Revisão Sistemática

**Resumo:** Intervenções para a redução do estigma relacionado às pessoas que usam drogas podem melhorar sua qualidade de vida e adesão ao tratamento. Esta revisão teve por objetivo identificar e analisar estudos de intervenções para reduzir o estigma relacionado às pessoas que usam drogas. Foram realizadas buscas nas bases PubMed, APA PsycNET, ScienceDirect, Web of Science e BVS, sem delimitação de ano. Foram identificados 5.488 registros somados à busca secundária de referências. Esta revisão abrange 28 artigos e foi baseada no PRISMA. Houve variação no tamanho da amostra e intervenções, embora o público-alvo de estudantes e profissionais da saúde e o uso de métodos quantitativos tenham sido predominantes. Limitações metodológicas consideráveis foram identificadas nos estudos. Portanto, conclui-se que não há evidências que permitam inferir que as intervenções propostas são efetivas e quais delas deveriam continuar a ser empregadas para essa finalidade. É imprescindível investir em abordagens distintas das adotadas tradicionalmente.

**Palavras-chave:** estigma, transtornos relacionados ao uso de substâncias, intervenção psicossocial, revisão sistemática

# Intervenciones para la Reducción del Estigma Relacionado a las Personas que Usan Drogas: Revisión Sistemática

**Resumen:** Las intervenciones para la reducción del estigma relacionado a las personas que usan drogas pueden mejorar su calidad de vida y la adherencia al tratamiento. Esta revisión tuvo como objetivo identificar y analizar los estudios sobre las intervenciones para la reducción del estigma relacionado a las personas que usan drogas. Se realizaron búsquedas en las bases de datos PubMed, APA PsycNET, ScienceDirect, Web of Science y BVS, sin delimitación del año. Se identificaron 5.488 registros sumados a la búsqueda secundaria de referencias. Esta revisión abarca 28 artículos y se basó en PRISMA. Hubo una variación en el tamaño de la muestra y las intervenciones, aunque fueron predominantes el público objetivo de estudiantes y profesionales de la salud y el uso de métodos cuantitativos. Se identificaron limitaciones metodológicas considerables en los estudios. Se concluye que no hay evidencias de que las intervenciones propuestas son efectivas y cuáles deberán seguir siendo utilizadas para este propósito. Es esencial invertir en enfoques distintos de los adoptados tradicionalmente.

**Palabras clave:** estigma, trastornos relacionados al uso de sustancias, intervención psicosocial, revisión sistemática

[1]*Universidade Federal de Juiz de Fora, Juiz de Fora-MG, Brazil*
[2]*Universidade Católica de Petrópolis, Petrópolis-RJ, Brazil*
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Correspondence address: Joanna Gonçalves de Andrade Tostes. Universidade Federal de Juiz de Fora. Instituto de Ciências Humanas. Centro de Referência em Pesquisa, Intervenção e Avaliação em Álcool & Drogas. (CREPEIA). Rua José Lourenço Kelmer, s/n - São Pedro, Juiz de Fora-MG, Brazil. CEP 36.036-900. E-mail: joanna@tostes.org

Stigma is a complex phenomenon widely conceptualized throughout history. It is associated—at theoretical and practical level—with constructs such as attitudes, stereotypes, prejudice, discrimination, social distance, labeling, attribution, and social identity (Corrigan, Druss, & Perlick, 2014; Link & Hatzenbuehler, 2016; Martinez & Hinshaw, 2016; Myers & Twenge, 2018). Among its describing processes, we may stress events that label, stereotype, devalue, and discriminate individuals who have some distinguishable social condition deemed as negative. The presence of such components is determined public stigma. It is manifested whenever an established power relationship favors the stigmatizer and causes the stigmatized to experience status

loss (Link & Hatzenbuehler, 2016). Stigmatization is also associated with negative effects on stigmatized people's health and quality of life, by lowering their self-esteem and self-efficacy, limiting their social interaction, and increasing social isolation and unemployment (Nieweglowski, Dubke, Mulfinger, Sheehan, & Corrigan, 2018 and van Boekel, 2015).

Considering the most stigmatized health conditions among the general population—including students and health professionals—problems arising from the use of alcohol and other drugs stand out (United Nations Office on Drugs and Crime [UNODC] 2018). Stigmatization is a major obstacle in searching general and specialized healthcare services, what compromises individuals' adherence to treatment and causes intense psychosocial damage (Corrigan et al., 2016a, 2016b; Silveira, Tostes, Wan, Ronzani, & Corrigan, 2018; Stringer & Baker, 2015).

Stigmatizing attitudes, directly or indirectly, may affect healthcare service users and, consequently, the quality of care provided (Ronzani, Soares, Nery, & Silveira, 2017; Thornicroft, Deb, & Henderson, 2016). Such attitudes are widely culturally accepted and even politically endorsed (Gopalkrishnan, 2018; Livingston, Milne, Fang, & Amari, 2011). Thus, it is fundamental to invest in trainings and interventions aiming at the general public and, mainly, health professionals (Evans-Lacko et al., 2014; Giandinoto, Stephenson, & Edward, 2018). Reducing the stigma of these professionals has gained increasing notoriety in researches and public agendas (Modgill, Patten, Knaak, Kassam, & Szeto, 2014). However, given the healthcare underfunding in several countries, strategies with this aim still require considerable advance.

Proposed interventions for reducing stigma apply a range variety of approaches. Yet, the literature suggests three main strategies: contact, education, and protest. Contac refers to a positive interpersonal contact with stigmatized groups, contesting negative attitudes by direct interactions, and reducing desire for social distance. Education aims to demystify socially shared information. Among its benefits, we may stress its low cost and wide reach. In turn, protest aims to reduce stigmatization by adopting legal measures and organizing specific advocacy groups, which may reduce judgments in the media (Corrigan et al., 2014). Although some strategies for reducing stigma are known and often incur low costs, they are still not widely available and evaluated (Oliveira, Martins, Richter, & Ronzani, 2013).

To identify researches that evaluated interventions for reducing stigma related to people who use drugs, Livingston et al. (2011) performed a systematic review—as in our study. They found that, of the thirteen identified studies, nine applied strategies including education and/or contact with people who use drugs. Regarding interventions effects, most reported positive effects in at least one indicator of the evaluated stigma. The most recent review that we found was the aforementioned, performed eight years ago. Our study sought to update the knowledge in the area.

We performed this systematic literature review considering the relevance of the problem of stigmatizing people who use drugs, the need for developing strategies to manage this situation, and the limited number of studies on interventions identified by the previous review, conducted by Livingston et al. (2011). Our review aimed to identify and analyze studies on interventions to reduce the stigma related to people who use drugs. We intended to offer an overview of the characteristics of the studies and verify their main methodological aspects.

## Method

The protocol that guided this systematic review is called Preferred Reporting Items for Systematic Reviews and Meta-Analyses: *The PRISMA statement* (Galvão, Pansani, & Harrad, 2015). PRISMA is internationally recognized and aims to improve the quality of systematic reviews and meta-analysis.

To identify studies that proposed interventions for reducing stigma related to people who use drugs, searches were performed in the databases: PubMed, APA PsycNET, ScienceDirect, Web of Science, and VHL. Databases were selected considering their relevance in the indexing of scientific journals linked to the areas of knowledge assumed by this work, such as health and psychology. The search was performed in 2017. No delimitations were adopted (especially regarding dates) to cover not only most recent studies, but also those that may not have been identified by Livingston et al. (2011). Databases were accessed through the Journal Portal of CAPES, using institutional login.

We adopted the same search strategy for all databases, setting the intersection of three fields from the Boolean AND operator. In each set, the Boolean OR operator was used to combine defined terms. The complete search strategy was as follows: stigma reduction OR intervention studies OR experimental studies OR efficacy OR effectiveness OR evaluation OR changing OR training AND social stigma OR prejudice OR attitudes AND substance related disorders OR drug dependence. To define these terms, we adapted the Medical Subject Headings (MeSH) dictionary of terms and two previous systematic reviews: Livingston et al. (2011), previously described, and van Boekel, Brouwers, van Weeghel, and Garretsen (2013), which analyzed studies that evaluated the stigma of health professionals in the drug area, without performing interventions for reducing it.

Inclusion criteria were: intervention articles aimed to reduce stigma or related constructs regarding people who use drugs; written in Portuguese, English, Spanish, and French. Exclusion criteria were: theoretical articles, literature review, instrument validation, editorials, among others. Table 1 details the exclusion categories.

For analyzing the articles, we adopted the procedure of peer evaluation, by reading and filling checklist in table and forms. A team of 12 members, composed by previously trained professors, and Ph.D, master, and bachelor degree students, was responsible for evaluating the articles. When peers could not reach consensus, articles were discussed in person at the research group meetings. EndNote Web was used to organize the records.

## Results

In total, we found 5,488 records in the databases: PubMed (3,869), PsycNET APA (987), ScienceDirect (362), Web of Science (33) and VHL (237). Of them, 37 were excluded by duplication; 5,451 records were assessed based on their abstracts. After evaluation, 5,382 articles did not meet the inclusion criteria and were excluded. That is, their focus was not on evaluating interventions for reducing stigma and/or related constructs. We grouped and categorized these articles according to their main characteristics, described in Table 1.

Table 1
*Number of excluded studies by categories*

| Categ. | Description | *n* |
|---|---|---|
| A | Evaluation and description of stigma and related constructs related to people who use drugs | 385 |
| B | Evaluation and description of stigma and related constructs related to other groups (e.g. attitudes towards people with HIV) OR other constructs and people who use drugs (e.g. social support of people who use drugs) OR other constructs and other groups (e.g. muscle dysmorphia in male bodybuilders) | 2,878 |
| C | Theoretical studies or literature review on stigma and related constructs (e.g. stigma and pejorative language in dependence) OR other constructs (e.g. AIDS and law) | 1,321 |
| D | Interventions to reduce stigma and related constructs related to other groups (Ex. intervention for internalized stigma among hospitalized veterans) OR interventions on other constructs and related to people who use drugs (e.g. assertiveness training for adolescents with parents who use drugs) OR interventions on other constructs and related to other groups (e.g. intervention to improve patient adherence to antidepressants after psychiatric hospitalization) | 569 |
| E | Materials other than articles (e.g. indexes, panels, lists) | 228 |

*Note.* Categ = Category.

69 articles, which abstracts suggested the evaluation of interventions for reducing stigma related to people who use drugs, remained for full-text reading. After reading, only 17 articles were considered eligible to compose this work. Among the 52 excluded articles, eight fell under the previously presented exclusion category A, 17 in B, seven in C and 20 in D. Then, we performed a secondary referencing search on the 17 studies, by reading the full articles, and included 11 more studies. Our systematic review was composed by 28 articles.

Our results show that only five of the selected articles are common to the review performed by Livingston et al. (2011). They also show that 15 studies prior to the review of Livingston et al. were not contemplated by their search strategy, but were identified by ours. Conversely, our study strategy did not contemplate eight of the studies identified by Livingston et al. We also identified eight articles published after the first review. Figure 1 shows the flowchart referring to records search, selection, and analyzes.

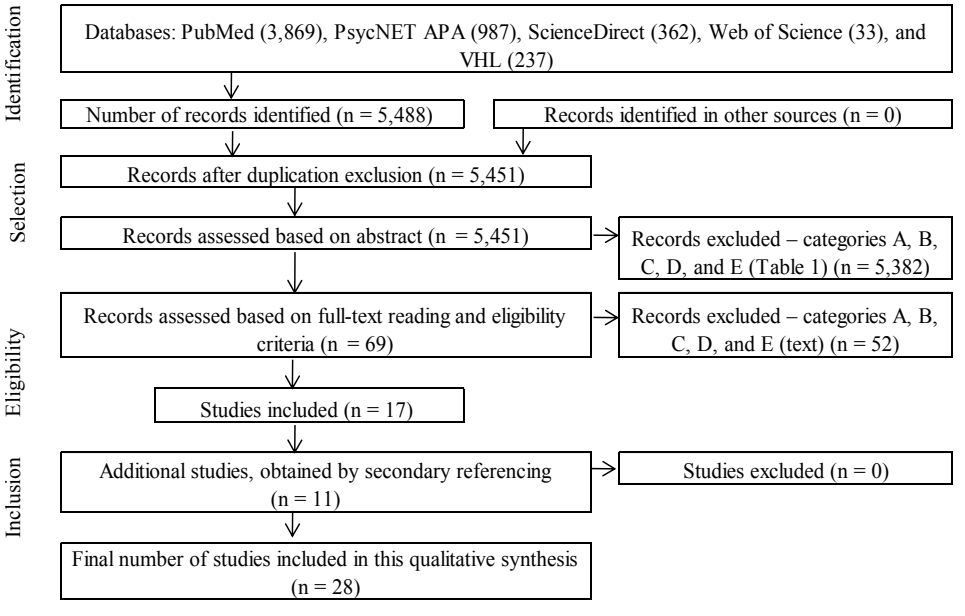


*Figure 1.* Flowchart of studies identification and selection process.

**Characteristics of studies**

Most of the 28 included studies were conducted in the international context: 18 (64%) in the United States, three (13%) in Canada, two (7%) in Australia, two (7%) in England, and one (2%) in Scotland. Only two of them (7%) were conducted in Brazil (Junqueira, Rassool, Santos, & Pillon, 2015; Oliveira et al., 2013). Regarding language, all articles were written in English. The years of 2007 and 2013 had the most publications, with four (14%) each. The most recent work was published in 2015 (Junqueira et al., 2015), and the oldest in 1987 (Chappel & Veach, 1987).

Our search strategy did not restrict interventions target audience; yet, all identified researches referred to professionals, residents, students, or caregivers in the health area. In total, 21 studies (75%) comprised students and medical residents, as well as doctors from different specialties, the most common audiences. Other groups targeted by the studies were: nurses, undergraduate and graduate students in nursing (25%), professors (3.6%), caregivers specialized in treating people who use drugs (3.6%), social service professionals (3.6%), among others that were described as health and primary care professionals (7.1%). Researches conducted in Brazil comprised nursing students (Junqueira et al., 2015) and primary healthcare professionals (Oliveira et al., 2013).

Sample size varied considerably among studies. The smallest was composed of nine participants (Hettema, Sorensen, Uy, & Jain, 2009), and the largest by 892 (Gopalan, Santora, Stokes, Moore, & Levine, 1992). Most studies exclusively adopted a quantitative approach ($n$ = 23; 82%), whereas a single one was exclusively qualitative (Ballon & Skinner, 2008). Four studies (14%) used the triangulation of both methods (Crapanzano, Vath, & Fisher, 2014; Gerace, Hughes, & Spunt, 1995; Ockene, Wheeler, Adams, Hurley, & Hebert, 1997; Rose, Stein, Arnsten, & Saitz, 2006). Only two studies (7%) did not perform pre- and post-test (Ballon & Skinner, 2008; Barron, Frank, & Gitlow, 2012). However, more than half of the studies ($n$ = 16; 57%) did not use a control group.

We observed a great diversity of measurement instruments used to assess stigma. Studies adopted validated and non-validated instruments, elaborated and/or adapted by the authors themselves. The validated instruments most frequently used were: the Alcohol and Alcohol Problems Perception Questionnaire (AAPPQ), the Substance Abuse Attitude Scale (SAAS) and the Drug and Drug Problems Perception Questionnaire (DDPPQ). Most studies ($n$ = 17; 61%) adopted questionnaires elaborated and/or adapted by the authors. Only two studies named the evaluated construct as stigma (Meltzer et al., 2013; Oliveira et al., 2013); the use of attitudes, beliefs, and knowledge was more common.

We also observed a great disparity regarding interventions duration. The shorter intervention was performed in approximately two hours (Ockene et al., 1997), whereas the longer took over three years (Gerace et al., 1995). One article did not specify the duration (Gopalan et al.,1992). Regarding strategies adopted in interventions, the most common were contact with the stigmatized group ($n$ = 9; 32%), technical visits to care services ($n$ = 6; 21%), and role-play with participants to simulate the contact between these professionals and people who use drugs ($n$ = 6; 21%).

All studies adopted, in different ways, educational strategies. Some included didactic sessions regarding screening and diagnostic testing, pharmacology, medical/physiological effects, family problems, community resources (Kokotailo, Langhough, Neary, Matson, & Fleming, 1995) and substance abuse (Bigby & Barnes, 1993), as well as legal and ethical questions regarding people who use drugs and information on local and national policies (Munro, Watson, & McFadyen, 2007). Studies that employed lectures as a teaching method addressed topics such as drug dependence and treatment of alcohol withdrawal, as well as the 12 steps of the Alcoholics Anonymous (AA) (Meltzer et al., 2013; Rose et al., 2006). Studies employed interactive activities involving participants in the form of workshops (Cleary, Hunt, Malins, Matheson, & Escott, 2009), fostering the connection between general ideas and practical aspects specific to their workplace. Some studies also conducted training modules in Screening, Brief Intervention, and Referral to Treatment (SBIRT) ($n$ = 5; 18%), stimulated discussions of clinical cases ($n$ = 4; 14%), and used audiovisual resources ($n$ = 6; 21%).

As for the ethical aspects, 15 studies (54%) mentioned the approval of the Research Ethics Committee, whereas 13 (46%) did not report this procedure. Table 2 shows the main characteristics of the studies.

Table 2

*Characteristics of the articles regarding sample, intervention, and results*

| Authors and year | Sample | Intervention | Main results |
|---|---|---|---|
| Albright, Skipper, Riley, Wilhelm e Rayburn (2012) | 96 medical students | Education and contact with pregnant women who use drugs | Increased comfort in talking about drug use and its negative effects |
| Ballon and Skinner (2008) | 28 psychiatric residents | Education, contact with dependents, training, group visits | Improved attitudes |
| Barron et al. (2012) | 140 doctors and 105 medical students | Experiential learning at the Summer Institute for Medical Students | Increased confidence in acknowledging available resources for dependents and talking about drug use |

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Table 2
*Characteristics of the articles regarding sample, intervention, and results*

| Authors and year | Sample | Intervention | Main results |
|---|---|---|---|
| Bigby and Barnes (1993) | 87 professor and doctors | Course; role-play, case discussions, and group meeting | Improved attitudes; increased confidence in clinical skills |
| Bland et al. (2001) | 84 medical students | Educational modules, simulated contact with the patient, and lectures | Increased comfort in dealing with patients; improved attitudes |
| Chappel and Veach (1987) | 45 medical students | Course; discussion groups, clinical cases, and technical visits | Improved attitudes, unrelated to good clinical practices |
| Cleary et al. (2009) | 32 caregivers | Workshops | Improved attitudes; greater sympathy; equal rights to health |
| Crapanzano et al. (2014) | 28 doctors | Teaching and discussions, contact, and reflective writing | Contact had positive effects, but stigmatizing attitudes were maintained |
| Gabel and Pearsol (1993) | 120 doctors and nurses | Training for professionals | Improved knowledge and attitudes towards people who use drugs and with HIV/AIDS |
| Gerace et al. (1995) | 32 nurses | Classes, contact, self-awareness exercises, role-play, case studies, and brief intervention | Positive results in the experimental group, compared to the control group, mainly in the optimism in treatment |
| Gopalan et al. (1992) | 892 medical students | Elective modules and experiences related to drug use | Improved attitudes, responsibility, and knowledge |
| Gorman et al. (1990) | 63 health professionals and social workers | Education, discussions, and role-play | No significant improvement in knowledge and attitudes |
| Heiligman and Nagoshi (1994) | 43 residents | Classes on dependence and visits to AA | No significant changes in attitudes |
| Hettema et al. (2009) | 9 medical students | Motivational Enhancement Therapy, Education, and SBIRT | No significant changes in attitudes |
| Junqueira et al. (2015) | 120 nursing students | Theoretical and practical classes | Improved knowledge and attitudes; experimental group with greater improvement than control group |
| Kokotailo et al. (1995) | 44 psychiatric residents | Education, role-play and interviews, participation in drug assessment and intervention programs | Improved general knowledge, interest, specific skills, and trust regarding drugs |
| Meltzer et al. (2013) | 128 medical residents | Knowledge, interactive sessions, lectures on SBIRT, The Brief Negotiated Interview (BNI), and field trip | Increased consideration regarding dependents of alcohol and pain medications |
| Meng, Rayburn, Ramirez-Cacho and Rayburn (2007) | 117 medical students | Contact with the group | Improved attitudes; increased comfort with pregnant patients with alcohol use disorder |
| Munro et al. (2007) | 49 nurses | Groups, education, evidence-based intervention, ethical issues, and public policies | Improved attitudes in the experimental group |
| Ockene et al.(1997) | 14 doctors, 12 residents, and 5 nursing professionals | Educational strategies, role-play, and counseling skills | Improved confidence, optimism in treatment, and stereotyped beliefs |
| Oliveira et al. (2013) | 95 primary healthcare professionals | SBIRT training for experimental and control groups, anti-stigma training for experimental group, and supervision | No significant differences in the experimental and control groups stigma |
| Puskar et al. (2013) | 319 nursing students | ATN-SBIRT Program and education | Greater preparation and responsibility; less motivation to work with patients with alcohol use disorder |

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Table 2
*Characteristics of the articles regarding sample, intervention, and results*

| Authors and year | Sample | Intervention | Main results |
|---|---|---|---|
| Ramirez-Cacho, Strickland, Beraun, Meng and Rayburn (2007) | 104 medical students | Education and contact in clinical care | Increased comfort in talking about the effects of drugs and related problems |
| Rose et al. (2006) | 36 medical residents | Educational intervention, lecture about the AA, and technical visit | Improved attitudes towards AA; greater belief in its effectiveness |
| Salvalaggio et al. (2013) | 300 doctors | Booklets, online education, workshops, case studies, SBIRT training, and contact | Description of the protocol: methodological care and community challenges |
| Silins, Conigrave, Rakvin, Dobbins and Curry (2007) | 445 medical students | Lectures, groups, case studies, and contact | Improved attitudes, especially towards smokers; lower hatred towards people who use alcohol |
| Strang, Hunt, Generated and Marsden (2007) | 112 doctors | Training, conferences, and expert supervision | Improved attitudes; increased group support in the treatment for people who use drugs |
| Vadlamudi, Adams, Hogan, Wu and Wahid (2008) | 181 nursing graduate students | The Brief Negotiated Interview (BNI), didactic training, and role-play | Improved attitudes and beliefs; increased confidence |

## Discussion

This systematic review analyzed studies that performed, in recent decades, interventions to reduce stigma related to people who use drugs. We observed a greater expansion in researches since the 2000s. Such interventions rely on evidence that stigma plays a role in adherence to treatment for both drug dependence or primary healthcare. Engaging people who use drugs in care may improve patient satisfaction with treatment and the quality of interventions (Salvalaggio et al., 2013).

In assessing the methodological quality of the identified studies, we verified some limitations in the proposed interventions regarding their effectiveness and the generalization of their effects. Some studies did not employ a representative number of participants and type of sampling, impairing results from being generalized for other groups and reducing external validity (Cozby & Bates, 2018). Participants' sociodemographic variables may also have influenced results after the intervention (Hettema et al., 2009; Junqueira et al., 2015; Oliveira et al., 2013; Vadlamudi et al., 2008). The research performed by Barron et al. (2012) presented a low response rate, suggesting that the remaining ones are precisely those with greater improvement in their attitudes.

Meltzer et al. (2013) and Meng et al. (2017), for example, did not randomly distributed their participants to experimental and control groups, hindering the measurement of the actual effect of the interventions, and the control of the contamination effects between groups. The lack of such procedure may attach importance into preexisting differences between groups, reducing study internal validity (Cozby & Bates, 2018). Experimental and control groups, as well as randomization, play a key role in increasing the internal validity of studies evaluating interventions effects (Ferreira & Patino, 2016). However, the feasibility of randomization is at stake when considering the challenges and ordinary issues in performing daily assessments in the health context, given the services reality and complex dynamics, as well as logistical and political difficulties (Heard, O'Toole, Naimpally, & Bressler, 2017).

We also identified that the studies conducted by Meltzer et al. (2013), Meng et al. (2007), and Ramirez-Cacho et al. (2007) did perform post-test, but no long-term follow-up evaluation. Yet, the authors recognize its need for observing whether or not the benefits of the intervention were maintained over time. The review performed by Livingston et al. (2011) also reported that most of the medium and long-term effects of the adopted interventions remained unknown.

By analyzing the studies that compose our review, we verified divergencies among the terminologies used to operationalize the stigma construct. Considering the complexity of the phenomenon, the chosen evaluation methods also reflect the difficulties in measuring it. Most studies adopted non-validated instruments elaborated by the authors themselves. Thus, there was no evaluation of the instruments ability to reproduce a consistent result in time and space – reliability – and its ability to measure exactly what it proposes – validity (Souza, Alexandre, & Guirardello, 2017). The studies may also present tangible changes that these instruments were unable to measure. These difficulties are even more pronounced by the lack of triangulation. Face-to-face interviews, focus groups, and other methods could help assess changes within stigma indicators. Difficulties in measuring stigma are intensified by the tendency of participants to provide socially desirable responses (Hinshaw, 2015). Two articles (Ballon & Skinner, 2008; Meltzer et al., 2013) indicated social desirability as a limitation in the study, although it is probable to occur in all studies, to a greater or lesser extent.

Regarding strategies underpinning interventions to reduce stigma, all studies adopted educational strategies, which may be justified by its low cost and wide reach. A global health promotion for people who use drugs requires a vital investment in training professionals, who are constantly beset by insufficient training, scarce resources, and excessive workloads, limiting them to providing quality care. Consistently, Gopalan et al. (1992) and Vadlamudi et al. (2008) stress the importance of education in improving knowledge and attitudes regarding drug use in nursing students' curricula. Ramirez-Cacho et al. (2007) corroborated these findings regarding medical students, indicating the need to articulate practice and theory. However, some studies reported a certain reluctance in integrating more content about drugs into curricula (Junqueira et al., 2015).

Educational strategies have positive effects on attitudes and behavioral intentions; yet, contact is the strategy for change considered more effective among adults in the general population (Thornicroft et al., 2015) and was underused by the studies evaluated in this review. Among the studies that used contact, they did not adopt it as a central component in the proposed interventions (Ballon & Skinner, 2008; Chappel & Veach, 1987; Crapanzano et al., 2014; Gerace et al., 1995; Heiligman & Nagoshi, 1994; Meltzer et al., 2013; Ramirez-Cacho et al., 2007; Salvalaggio et al., 2013; Silins et al., 2007).

However, evidence has shown that positive contact effects are often found when evaluation is performed immediately after the intervention, so the long-term benefits of this approach are not well-known (Mehta et al., 2015). Interventions must adopt multiple strategies, have longer duration, and encompass different dimensions of attitudes (Bland et al., 2001; Gopalan et al., 1992; Meltzer et al., 2013; Oliveira et al., 2013).

Regarding the analysis of the main effects of the interventions, most studies reported positive changes in the participants, such as: improved attitudes towards people who have drug dependence (Ballon & Skinner, 2008; Junqueira et al., 2015), increased comfort and confidence in talking to patients about drug use (Albright et al., 2012; Bland et al., 2001; Ramirez-Cacho et al., 2007), increased confidence in clinical skills when recognizing problematic drug use (Bigby & Barnes, 1993), and improved optimism in treatment and stereotyped beliefs (Ockene et al., 1997).

Conversely, Chappel and Veach (1987) stress that the positive changes observed were not related to good clinical practices. Crapanzano et al. (2014) found a similar result, reporting the difficulty faced by participants in reconciling their beliefs with the content addressed by the intervention, and the maintenance of some stigmatizing attitudes in the post-test. Other studies found no significant changes in participants' attitudes (Gorman et al., 1990; Heiligman & Nagoshi, 1994; Hettema et al., 2009; Oliveira et al., 2013).

The insufficient findings of these studies indicate and emphasize the need, in issues involving drug use, for a multisectoral and coordinated approach, encompassing a continuum ranging from primary prevention and risk reduction to disorders management, rehabilitation, and harm reduction. For this approach to reach the most vulnerable populations, it must be grounded on the precepts of equality, social justice, and human rights. It must also consider the social determinants of health and person-centered approaches (Stronks, Toebes, Hendriks, Ikram, & Venkatapuram, 2016). Although the literature suggests that stigma is a determining factor for recovery from drug dependence, studies on this matter are still scarce – especially in comparison to the stigma related to mental illness (Corrigan et al., 2016a, 2016b; Nieweglowski et al., 2018; Silveira et al., 2018).

A possible limitation in our review is that, although it strictly followed the PRISMA guidelines, some studies that meet the inclusion criteria may not have been identified. It may be justified by the adopted search strategy and the used terms, as well as by the indexation to the databases of interventions studies performed by other authors. To mitigate this limitation and the potential selection bias, a key strength of this review was expanding the search strategy and the terms adopted in the review performed by Livingston et al. (2011), besides covering studies written in Portuguese, English, Spanish, and French. During information gathering from primary studies, the evaluation team discussed the findings to resolve disagreements. Our review also advanced in identifying studies published after the review conducted by Livingston et al. (2011), as well as previous works not contemplated by them.

We found indicate methodological problems in the analyzed studies to evaluate interventions effects in reducing stigma related to people who use drugs. Such empirical finding corroborates the methodological and theoretical discussion in the area regarding the limitations imposed by the use of certain instruments – especially self-report – in evaluating the present construct. The strategies for reducing stigma and the methods for its evaluation were inadequate to obtain more definitive results. Our results indicate that evidence-based and effective strategies constitute a major gap in the area, persisting even after decades of theoretical and empirical research.

By performing this methodologically rigorous systematic review – the most extensive and recent regarding interventions to reduce stigma related to people who use drugs, – we concluded that the analyzed studies present no evidence to infer the effectiveness of the proposed interventions and which of them should continue to be applied for this aim. Considering the relevance of the problem, this work is an important data for the field, stressing the need to invest in approaches other than those traditionally adopted in the area of stigma.

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*Joanna Gonçalves de Andrade Tostes* is a Ph.D. candidate in Psychology at the Universidade Federal de Juiz de Fora, Juiz de Fora-MG, Brazil.

*Rafaela Toledo Dias* has a Master's degree in Psychology at the Universidade Federal de Juiz de Fora, Juiz de Fora-MG, Brazil.

*Andressa Aparecida da Silva Reis* has a Bachelor's degree in Psychology at the Universidade Federal de Juiz de Fora, Juiz de Fora-MG, Brazil.

*Pollyanna Santos da Silveira* is an Assistant Professor in the Department of Psychology at the Universidade Católica de Petrópolis, Petrópolis-RJ, Brazil, and a Collaborating Professor in the Psychology Graduate Program at the Universidade Federal de Juiz de Fora-MG, Brazil.

*Telmo Mota Ronzani* is an Associate Professor in the Department of Psychology at the Universidade Federal de Juiz de Fora, Juiz de Fora-MG, Brazil.

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