

Changing BSN Students' Stigma Toward Patients Who Use Alcohol and Opioids Through Screening, Brief Intervention, and Referral to Treatment (SBIRT) Education and Training: A Pilot Study

Journal of the American Psychiatric Nurses Association
2018, Vol. 24(6) 510–521
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1078390317751624
journals.sagepub.com/home/jap



Khadejah F. Mahmoud¹, Dawn Lindsay², Britney B. Scolieri³, Holly Hagle⁴, Kathryn R. Puskar⁵, and Ann M. Mitchell⁶

Abstract

BACKGROUND: Stigma associated with substance use is considered a barrier to implementing Screening, Brief Intervention, and Referral to Treatment (SBIRT) and assisting patients to receive appropriate treatment. **OBJECTIVES:** To test the efficacy of SBIRT education and training in changing undergraduate nursing students' attitudes about working with patients who have problems with alcohol and opioid use. **DESIGN:** A sample of 49 undergraduate nursing students were surveyed, using five subscales, at three time points. **RESULTS:** After a 15-week semester that included (a) SBIRT education and (b) weekly clinical experiences with patients who had alcohol use problems the undergraduate nursing students' stigma decreased as measured by three of the five subscales. The students' attitudes toward working with patients who had opioid use problems exhibited favorable change as measured by four of the five subscales. **CONCLUSION:** SBIRT education and training for undergraduate nursing students might help mitigate some of their stigma toward working with patients who have mild to moderate alcohol and opioid use problems.

Keywords

stigma, undergraduate, nursing, alcohol, opioids

Background

Substance use disorder (SUD) is a public health problem that increases not only economic burden but also rates of morbidity and mortality (Horgan, Skwara, & Strickler, 2001; Madras et al., 2009; World Health Organization, 2009). More than 17 million Americans exhibit unhealthy alcohol use (Agle, Gassman, Vannerson, & Crabb, 2014; Clark, Power, Le Fauve, & Lopez, 2008), and approximately 16 to 38 million individuals aged 15 to 64 years report problematic drug use (Humenuik et al., 2012) in the United States. Annual health and social costs associated with SUDs account for more than \$600 billion in the United States (National Institute on Drug Addiction, 2012; Stoner, Mikko, & Carpenter, 2014).

One of the most effective ways to reduce negative consequences associated with SUDs is to use early intervention methods such as *Screening, Brief Intervention, and Referral to Treatment* (SBIRT). SBIRT has been found to be effective at reducing long-term negative effects associated with (a) alcohol use in primary and

emergency care settings, (b) illicit drug use, and (c) substance use related problems (Estee, Wickizer, He, Shah, & Mancuso, 2010; Gryczynski et al., 2011; Humenuik et al., 2012; Krupski et al., 2010; Mertens et al., 2015;

¹Khadejah F. Mahmoud, PhD(c), MSN, University of Pittsburgh, Pittsburgh, PA, USA

²Dawn Lindsay, PhD, Institute for Research, Education and Training in Addictions, Pittsburgh, PA, USA

³Britney B. Scolieri, DNP, PMHNP-BC, University of Pittsburgh, Pittsburgh, PA, USA

⁴Holly Hagle, PhD, Institute for Research, Education and Training in Addictions, Pittsburgh, PA, USA

⁵Kathryn R. Puskar, DrPH, RN, FAAN, University of Pittsburgh, Pittsburgh, PA, USA

⁶Ann M. Mitchell, PhD, RN, FAAN, University of Pittsburgh, Pittsburgh, PA, USA

Corresponding Author:

Khadejah F. Mahmoud, Health & Community Systems, University of Pittsburgh School of Nursing, 3500 Victoria Street, 415 Victoria Building, Pittsburgh, PA 15261, USA.

Email: kfm22@pitt.edu

Pringle, Kowalchuk, Meyers, & Seale, 2012; Young et al., 2014).

SBIRT has been recommended as a mandatory screening and intervention measure by the Joint Commission, the American College of Surgeons, and the Veterans Health Administration (Cuijpers, Riper, & Lemmers, 2004; Holland, Pringle, & Barbeti, 2009; Mertens et al., 2015). However, health care providers, including nurses, rarely screen, nor provide brief intervention, or refer patients for their substance use problems (Holland et al., 2009; Mertens et al., 2015); less than 3% of patients have reported receiving treatment related to their substance use problems (Substance Abuse and Mental Health Services Administration, 2012). Nurses and other health care providers' unwillingness to screen for, provide brief intervention, or refer patients for their substance use problems have been attributed to a number of barriers related to SBIRT implementation at the levels of patient such as feelings of hopelessness and low self-esteem (Johnson, Jackson, Guillaume, Meier, & Goyder, 2011); at the health care providers level such as stigmatizing attitudes and negative stereotypes, increased workload, and insufficient time (Janulis, Ferrari, & Fowler, 2013; Rahm et al., 2015; Van Hook et al., 2007; Vendetti et al., 2017); and at health care system level such as lack of standardized screening tools and referral resources (Puskar et al., 2013; Van Hook et al., 2007; Vendetti et al., 2017). Of these barriers, the stigmatizing attitudes assumed by health care providers about this patient population are thought to be one of the main barriers to SBIRT implementation. According to Chun, Spirito, Rakowski, D'Onofrio, and Woolard (2011) and Kaner, Rapley, and May (2006), health care providers who assume such attitudes are less likely to screen for alcohol and other drug (AOD) use and provide appropriate interventions among this patient population. In addition, the stigmatizing attitudes held by health care providers may influence the health outcomes of patients through the underutilization of appropriate health care services (Corrigan, Kuwabara, & O'Shaughnessy, 2009; Crapanzano, Vath, & Fisher, 2014; Neville & Roan 2014; van Boekel, Brouwers, van Weeghel, & Garretsen, 2015; Watson, Maclaren, & Kerr, 2007). Despite the evidence of the influence that stigmatizing attitudes held by health care providers can have on screening, intervention implementation, and outcomes among stigmatized patient populations (e.g., individuals with AOD use disorders), little attention has been given to assessing and developing interventions that specifically target stigma associated with substance use and its construction (Chun et al., 2011).

According to Corrigan et al. (2009) and Corrigan and Penn (1999), education (i.e., providing information that helps learners distinguish between myth and fact associated

with a stigmatized group) and contact (i.e., purposeful interactions between people with the disorder and control groups) are two of the three main strategies used to combat stigma toward patients who have mental illness. Similar to mental illness-related stigma, stigma associated with substance use can be targeted using educational and contact approaches. In previous studies by Burns et al. (2012), Mitchell et al. (2013), Puskar et al. (2013), and Rassool and Rawaf (2008), providing a combination of SBIRT education and contact (through weekly clinical experiences) promoted positive change in nurses' attitudes toward (a) screening for substance use and (b) providing subsequent brief intervention or referral for patient at risk of developing AOD use disorders. Therefore, SBIRT education and training might be considered an appropriate and effective intervention to target nurses' stigma toward patients who use AOD.

According to Janulis et al. (2013), few interventions have been conducted that target health care providers' stigma toward populations exhibiting substance use problems. Moreover, those that have implemented interventions only focused on social marketing; an intervention that have not been evaluated adequately. Because of the effectiveness of SBIRT at decreasing alcohol use (Substance Abuse and Mental Health Services Administration, 2015), SBIRT has been used to target attitudes about substance use (Puskar et al., 2013; Mitchell et al., 2016). For example, studies (e.g., Martinez, & Murphy-Parker, 2003; Mitchell et al., 2016; Puskar et al., 2013) on the implementation of SBIRT training in nursing curricula have revealed positive outcomes on the attitudes of nursing students toward working with patients who use AOD. However, these studies either (a) did not assess the stigma of the students toward working with patients who use AOD (Martinez, & Murphy-Parker, 2003; Puskar et al., 2013) or (b) indicated that the students' willingness toward working with this population did not change or decreased after SBIRT training (Mitchell et al., 2016; Puskar et al., 2013). Therefore, incorporating stigma assessment into SBIRT training may achieve the following: (a) increase our understanding of stigma associated with SUDs, (b) facilitate future modification in SBIRT training that can target stigma and increase the motivation of nurses to work with patients who use alcohol or drugs, (c) promote the continued implementation of SBIRT in future clinical practice.

Against this backdrop, the study described in this article was designed and conducted to evaluate the effects of teaching the evidence-based practice of SBIRT on the stigma of undergraduate nursing students toward patients who have mild to moderate problems with alcohol and opioid use. To the best of the authors' knowledge, the current study represents the first attempt to examine the efficacy of using SBIRT education and training as an intervention that targets stigma associated with alcohol and opioid use problems among an adult sample.

Purpose

The purpose of this study was to (a) increase our understanding of stigmas toward patients exhibiting alcohol and opioid use problems among nursing students and (b) provide a means to decrease the negative effects of these stigmas on the treatment outcomes of these patients through SBIRT education and training.

Method

Sample

A sample of 49 junior-level nursing students who were enrolled in a Psychiatric Mental Health course at the University of Pittsburgh, School of Nursing, participated in the study. The students were (a) 22.0 (± 1.7) years of age, (b) primarily (i.e., 89.8%; $n = 44$) Caucasian, and (c) predominantly (i.e., 98%; $n = 48$) female.

Instruments

The students completed two versions of the questionnaire at three time points (i.e., baseline, immediately following SBIRT education, and end-of-course). One version of the questionnaire targeted alcohol use, and the other version targeted opioid use. Each version of the questionnaire featured five scales to measure the variables presented in the following order: *Familiarity*, *Perceived Dangerousness*, *Fear*, *Social Distance*, and *Motivation*. The questionnaire also measured *Social Desirability*.

Familiarity. A modified version of the tool developed by Corrigan, Markowitz, Watson, Rowan, and Kubiak (2003) was used that defines the variable of familiarity as “an index measure to capture an individual’s knowledge and personal experience with substance use” (p. 166). Our modified version replaces the term *mental patients* in each of the seven scales with either *individual with mild to moderate alcohol use problems* or *individual with mild to moderate opioid use problems*. Our version consists of seven yes–no items, and each were coded dichotomously such that 1 indicates *yes* and 2 indicates *no*. All seven familiarity items were grouped into one score for each of the two substances (i.e., alcohol and opioids) featured in the study. Corrigan et al.’s (2003) familiarity subscale exhibits good internal consistency for patients with mental illness with a Cronbach’s α of .84.

Perceived Dangerousness. This variable, defined as “attitudes on a variety of situations that capture the level of threat individuals with mental illness pose to them and others” (Link, Cullen, Frank, & Wozniak, 1987, p. 1480), was measured using an adapted version of the scale developed by Link et al. (1987). In adapting it, we

replaced the term *mental patients* in each of the seven items with either *individual with mild to moderate alcohol use problems* or *individual with mild to moderate opioid use problems*. Each item was measured on a 6-point scale such that 1 indicates *strongly agree* and 6 indicates *strongly disagree*. Higher scores indicate higher perceived dangerousness and vice versa. Link et al. (1987) perceived dangerousness subscale exhibits good internal consistency for patients with mental illness with a Cronbach’s α of .85.

Fear. This variable, defined as “the level of fear reactions individuals displays for each substance” (Janulis et al., 2013, p. 1067), was measured by three questions. Each question was measured on a 10-point scale such that 1 indicates *not at all* and 10 indicates *very much*. This measure is an adapted version of the instrument appearing in Corrigan et al. (2003). In our adapted version, the three items were grouped into one measure for each of the two substances featured in our study. The modified version Corrigan et al. (2003) fear subscale exhibited a good internal consistency for alcohol use with a Cronbach’s α of .97 (Janulis et al., 2013).

Social Distance. The social distance of the participating nursing students, defined as “maintaining a safe distance from individuals who use AOD” (Link et al., 1987, p. 149), was measured using an adapted version of the Link et al. (1987) scale, for which each of the character names (i.e., Jim Johnson) in the seven items was replaced with either *individual with mild to moderate alcohol use problems* or *individual with mild to moderate opioid use problems*. Each question was measured on a 4-point scale for which 0 indicates *definitely willing* and 3 indicates *definitely unwilling*. For our adapted measure of social distance, all seven items were combined into one score for each of the two substances featured in the study. The adapted version exhibited a good internal consistency for alcohol use with a Cronbach’s α of .88 (Janulis et al., 2013).

Motivation. The motivation of the participating nursing students toward working with patients with mild to moderate alcohol or opioid use problems was defined as the willingness or readiness to work with patients who use alcohol or drugs, and this motivation was measured using the motivation subscale of the Alcohol and Alcohol Problems Perception Questionnaire (AAPPQ; Anderson & Clement, 1987). This motivation subscale consists of five items that are scored on 5-point Likert-type scale: 1 indicates *strongly disagree* and 5 indicates *strongly agree*. The AAPPQ has exhibited good internal consistency among studies of nursing students (Terhorst et al., 2013).

Social Desirability. This variable was measured using the 13-item form of the Marlowe–Crowne social desirability scale reported in Reynolds (1982), which defines social desirability as “the need to examine social desirability as a response tendency with self-report measures” (p. 119). We combined the responses to the 13 items for social desirability into one score for each of the two substances featured in our study. The Reynolds (1982) social desirability measure exhibited good internal consistency with a Cronbach’s α of .70. Moreover, this measure of social desirability was used to control for the potential of the participants to report socially desirable responses (i.e., reporting more favorable attitudes toward working with patients who use AOD, although they may not actually believe so). This was achieved by assessing the correlation between the total scores for each of the five subscales and the scores for social desirability. If any of the five subscale scores were highly correlated with the social desirability scores, then we concluded that subscale was highly influenced by a social desirability bias, which is defined as the inclination(s) of an individual to report more favorable impressions that determine certain psychological or sociological variables (e.g., attitudes toward SUDs) on self-report instruments (Reynolds, 1982).

Finally, as mentioned before, in three of the measures (i.e., familiarity, perceived dangerousness, and fear) featured in this study, we replaced the term *mental illness* in the original instruments with the term *mild to moderate alcohol or opioid use problems*. We employed the term *mild to moderate alcohol or opioid use problems* instead of the term *substance use disorders* to assess the level of stigma that the nursing student participants associated with a less severe and more common form of substance use.

Procedure

Junior-level nursing students underwent SBIRT education and training that comprised two parts: (a) SBIRT education, which featured a 1.5-hour in-class didactic educational module that targeted screening competency and intervention skill acquisition, and (b) a 12-week clinical experience (training), which featured clinical placements that exposed students to constant opportunities to implement SBIRT with the target patient population. The participating students completed the questionnaire described above at three time points: baseline, immediately following SBIRT education, and end-of-course. The study was approved by the University of Pittsburgh Institutional Review Board. Participants’ informed consent was obtained. At the beginning of the study, participants were told that they can withdraw from the study at any time without any consequences. In addition, the principle

researcher who conducted the study did not have any part in students’ teaching, clinical training, or grading.

Data Analysis

A single-sample, pretest–posttest design was employed to evaluate the effect of SBIRT training on changing the attitudes of undergraduate nursing students (i.e., overcoming stigma) toward working with patients who have mild to moderate alcohol and opioid use problems. The Statistical Package for the Social Sciences (version 24; SPSS Inc, Chicago, IL) was used for statistical analysis. Participant demographics were described using percentages and frequencies. General linear model (GLM) analyses were used to assess for statistically significant differences between the three time points concerning the variables of interest. In addition, GLM paired contrasts tests were performed to examine differences in the familiarity, perceived dangerousness, fear, social distance, and motivation scores (a) before and after education and (b) before and after clinical training. GLM analyses were used because it has less restrictive assumptions related to linearity, normal distribution, homogeneity, and independence of observations, compared with repeated measure analysis of variance.

To control for social desirability, the association between the students’ social desirability score and the students’ other five scores (i.e., familiarity, perceived dangerousness, fear, social distance, and motivation) was calculated at baseline using Spearman’s rank correlation. Moreover, Spearman’s rank correlation coefficient was used to assess the association between the total scores of the five scales (i.e., familiarity, perceived dangerousness, fear, social distance, and motivation) and the 13-item form of the Marlowe–Crowne social desirability scale reported in Reynolds (1982) for the two substances (i.e., alcohol and opioids) featured in the study. Spearman’s rank correlation coefficient was used because it not only is considered more robust with small sample sizes (i.e., $n = 49$ for this study), but also has less restrictive assumptions related to the frequency of data distribution, compared with a Pearson correlation (Kendall, 1962). All statistical analyses assumptions were satisfied.

Results

A total of 49 junior-level nursing students completed both the training and the survey at all three time points. The age of the students ranged from 17 to 27 years, with a mean age of 22 ± 1.7 years. This sample of students comprised 48 (98%) female students and one (2%) male student. Forty-four (89.8%) of the students were Caucasian, four (8.2%) were Asian, and one (2%) was African American.

Table 1. Changes in Undergraduate Nursing Students' Stigma Toward Patients Who Have Mild to Moderate Alcohol and Opioid Use Problems after SBIRT Education and Training.

Variable	Baseline		Immediately post-SBIRT education		End of course/post-SBIRT training		F(2, 96)	p value
	M	SD	M	SD	M	SD		
Mild to moderate alcohol use problems								
Familiarity	11.14	1.66	11.31	1.65	11.59	1.44	2.315	.104
Perceived dangerousness	14.14	5.45	14.00	5.60	11.90	6.04	8.465	.000
Fear	8.04	3.95	7.08	4.17	6.29	4.00	7.420 ^a	.002
Social distance	11.35	3.58	11.80	4.15	10.37	4.34	6.020 ^a	.005
Motivation	17.88	2.62	18.63	2.38	18.69	2.63	2.654	.076
Mild to moderate opioid use problems								
Familiarity	9.47	1.66	9.59	1.62	9.96	1.77	3.806	.026
Perceived dangerousness	16.86	5.93	16.20	5.72	13.94	6.38	9.718	.000
Fear	10.16	4.84	8.33	4.78	6.45	3.87	23.931	.000
Social distance	14.50	3.86	13.77	4.60	12.65	4.82	6.700	.002
Motivation	17.86	3.03	18.39	2.65	18.78	2.69	2.552	.083

Note. $N = 49$. $p < .05$. SBIRT = Screening, Brief Intervention, and Referral to Treatment.

^aMauchly's test of sphericity was not met, thus we report the Huynh-Feldt test values for Fear and Social Distance using df values of (1.687, 80.957) and (1.738, 83.423) for Fear and Social Distance, respectively.

To examine the overall difference in the means between the three time points (i.e., baseline, immediately following SBIRT education, and end-of-course) on the students' scores, GLM analysis was used. The results of this analysis indicate that attitudes of the undergraduate nursing students toward working with patients who have mild to moderate alcohol use problems underwent a statistically significant decrease for the subscales of perceived dangerousness ($F[2, 96] = 8.465, p < .001$), fear ($F[1.738, 83.423] = 7.420, p = .002$), and social distance ($F[1.687, 80.957] = 6.020, p = .005$). These results suggest that the students (a) perceived the patients who have mild to moderate alcohol use problems to be less dangerous, (b) were less afraid of these patients, and (c) experienced a decrease in their preference to maintain a safe distance from these patients after the SBIRT education and training.

Meanwhile, the attitudes of these nursing students toward working with patients who have mild to moderate opioid use problems exhibited positive changes for four of the five subscales: familiarity ($F[2, 96] = 3.806, p = .026$), perceived dangerousness ($F[2, 96] = 9.718, p < .001$), fear ($F[2, 96] = 23.931, p < .001$), social distance ($F[2, 96] = 6.700, p = .002$). These results indicate that, after SBIRT education and training, the nursing students (a) had more knowledge and personal experience with these patients, (b) perceived these patients as less dangerous, (c) were less afraid to work with this patient population, and (d) experienced a decrease in their preference to maintain a safe distance from these patients who have mild to moderate opioid use problems (see Table 1).

GLM two paired-samples contrasts were performed to compare the effects of SBIRT education and SBIRT training for each of the two substances (i.e., alcohol and opioids) of interest. The first contrast was used to examine the differences in means between the pre- and post-SBIRT education on the stigma that the students had toward working with patients who have mild to moderate alcohol use problems. Figure 1 shows the results of the pre- and post-SBIRT education change on the five subscale scores. No significant changes were found.

Likewise, GLM paired contrast was performed to examine the differences in the means between the pre- and post-SBIRT education on the students' attitudes toward working with patients who have mild to moderate opioid use problems. Figure 2 displays the results of the pre- and post-SBIRT education changes on the five subscale scores. In addition, our results indicate that the stigma that the students had toward patients who have mild to moderate opioid use problems decreased in a statistically significant fashion ($M_{\text{difference}} = 1.84, SD = 3.78; t[48] = 3.399, p = .001$) for the fear subscale after SBIRT education. This suggests that the nursing students were less afraid to work with patients who have mild to moderate opioid use after SBIRT education.

The second paired sample contrast was performed to examine the differences in mean scores between the pre- and post-SBIRT training on the stigma the students had toward working with patients who have mild to moderate alcohol use problems. Figure 1 shows the results of the pre- and post-SBIRT training change on the five subscale

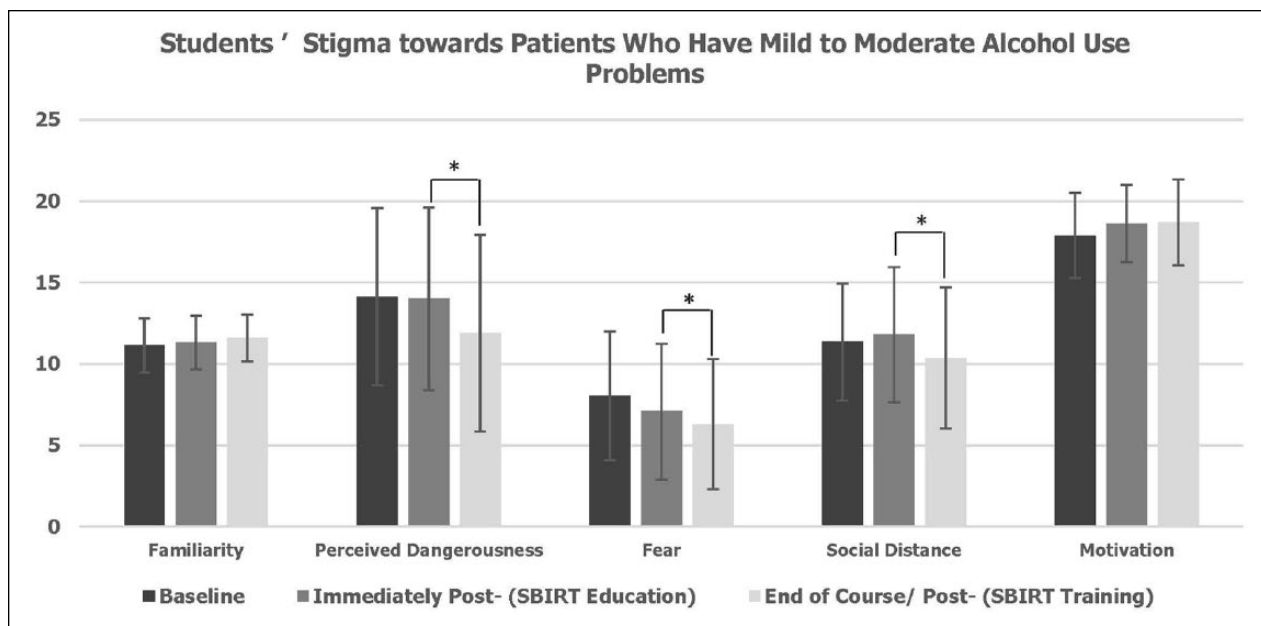


Figure 1. Baseline, immediately post-Screening Brief Intervention and Referral to Treatment (SBIRT) education, and end of course/post-SBIRT Training changes in students' stigma toward patients who have mild to moderate alcohol use problems.

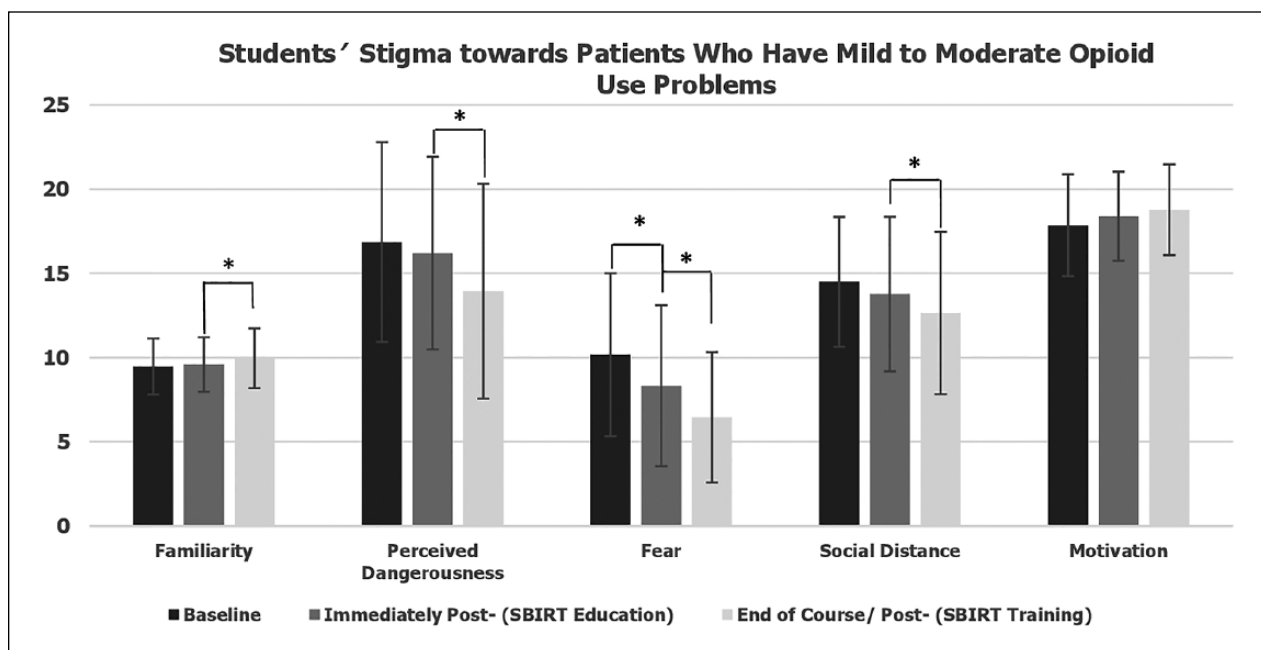


Figure 2. Baseline, immediately post-Screening Brief Intervention and Referral to Treatment (SBIRT) education, and end of course/post-SBIRT training changes in students' stigma toward patients who have mild to moderate opioid use problems.

scores among the nursing students. The results reveal that the stigma the students had toward working with patients who have mild to moderate alcohol use problems decreased in a statistically significant fashion for the following subscales: perceived dangerousness ($M_{difference} = 2.10, SD = 3.86; t[48] = 3.809, p < .001$); fear ($M_{difference} =$

$.80, SD = 2.35; t[48] = 2.376, p = .022$); and social distance ($M_{difference} = 1.43, SD = 2.55; t[48] = 3.922, p < .001$). These results suggest that the students (a) perceived the patients as less dangerous, (b) were less afraid to work with them, and (c) experienced a decrease in their preference to maintain a safe distance from the patients

Table 2. Familiarity, Perceived Dangerousness, Fear, Social Distance, Motivation, and Social Desirability Baseline Scores
Correlation of Undergraduate Nursing Students' Stigma Toward Patients Who Have Mild to Moderate Alcohol and Opioid Use Problems (N = 49).

Subscale	Familiarity	Perceived Dangerousness	Fear	Social Distance	Motivation
Mild to moderate alcohol use problems					
1. Familiarity					
2. Perceived Dangerousness	-.263				
3. Fear	-.488**	.515**			
4. Social Distance	-.202	.569**	.518**		
5. Motivation	.113	-.144	-.329*	-.225	
6. Social Desirability	-.031	-.179	-.220	-.090	.093
Mild to moderate opioid use problems					
1. Familiarity					
2. Perceived Dangerousness	-.010				
3. Fear	-.223	.525**			
4. Social Distance	-.042	.688**	.574**		
5. Motivation	.218	-.026	-.349*	-.084	
6. Social Desirability	.043	-.176	-.308*	-.148	-.011

** $p < .01$. * $p < .05$.

after SBIRT training, which consisted of 12 weeks of clinical experience.

Meanwhile, paired contrast was also performed to examine the differences in means between the pre- and post-SBIRT training on the stigma the nursing students had toward working with patients who have mild to moderate opioid use problems. Figure 2 shows the results of the pre- and post-SBIRT training change on the five subscale scores toward patients who had mild to moderate opioid use problems. The results indicate that attitudes of the nursing students toward working with these patients exhibited positive changes for four of the five subscales: familiarity ($M_{\text{difference}} = -.37$, $SD = 1.09$; $t[48] = -2.352$, $p = .023$); perceived dangerousness ($M_{\text{difference}} = 2.27$, $SD = 4.30$; $t[48] = 3.683$, $p = .001$); fear ($M_{\text{difference}} = 1.88$, $SD = 3.43$; $t[48] = 3.837$, $p < .001$); and social distance ($M_{\text{difference}} = 1.13$, $SD = 3.22$; $t[48] = 2.421$, $p = .019$). These results suggest that, after SBIRT training (a 12-week clinical experience), the students (a) had more knowledge and personal experience with these patients, (b) perceived them as less dangerous, (c) were less afraid of working with these patients, and (d) experienced a decrease in their preference to maintain a safe distance from patients suffering from opioid use problems.

Social Desirability and Stigma

The scores of the students on the five subscales (i.e., familiarity, perceived dangerousness, fear, social distance, and motivation) did not correlate highly with their social desirability score. This suggests that although a small relationship exists between the five subscales and social

desirability (i.e., students attempted to provide more socially desired responses to the five subscales), the five subscale responses were not strongly associated with social desirability scores in either patient population (i.e., mild to moderate alcohol or opioid use problem). Therefore, we do not consider social desirability to pose a threat to the validity of the five subscales featured in this study (see Table 2).

Discussion

This study evaluated the effects of teaching the evidence-based practice of SBIRT on the stigma that undergraduate nursing students may have toward working with patients who have mild to moderate alcohol and opioid use problems. Overall, our results provide support for using SBIRT education and training as an intervention to change the attitudes of undergraduate nursing students toward working with patients who have mild to moderate alcohol and opioid use problems.

After SBIRT education, the stigma that the nursing students had toward patients who have mild to moderate alcohol use problems exhibited nonsignificant positive changes in four of the five subscales. Simultaneously, the stigma that the students had toward patients who have mild to moderate opioid use problems exhibited (a) a statistically significant decrease in the fear subscale and (b) nonsignificant positive change for the other four subscales. This statistically significant decrease in the fear subscale score vis-à-vis the opioid use patient population could be a result of fear being perceived as a cognitive attribute that can be targeted and reduced using education—especially in light

of how our student participants were not that familiar with opioid use problems.

After the SBIRT training, which involved weekly clinical experience, the participants exhibited positive changes (e.g., perceiving these patients as less dangerous, being less afraid of working with the patients, and experiencing a decrease in their preference to maintain a safe distance from the patients). Our results demonstrate that the stigma that the undergraduate nursing students had toward working with patients who have mild to moderate alcohol use problems decreased in a statistically significant fashion for the following subscales: perceived dangerousness, fear, and social distance. Meanwhile the stigma that the undergraduate nursing students had toward working with patients who have mild to moderate opioid use problems exhibited positive changes for four of the five subscales: familiarity, perceived dangerousness, fear, and social distance. These results are consistent with previous studies (Janulis et al., 2013; Corrigan, Edwards, Green, Diwan, & Penn, 2001; van Boekel et al., 2015) that have shown that increased familiarity and more frequent contact with patients who have mental health or substance use problems are associated with decreased levels of fear, perceived dangerousness, and social distance. However, bear in mind that the literature (Horch & Hodgins, 2008; Janulis et al., 2013; van Boekel et al., 2015) has also reported mixed results related to the familiarity and frequency of contact and its subsequent effect on these participants, which depends on the context of contact and type of substance. For example, Janulis et al. (2013) found that increased familiarity with patients who have alcohol use disorders was not associated with subsequent decrease in social distance scores.

Moreover, our results are supported by the mental health literature (Corrigan, Michaels, & Morris, 2015; Corrigan, Morris, Michaels, Rafacz, & Rüsche, 2012; Corrigan et al., 2017). According to Corrigan et al. (2017), those with contact with people who are in mental health recovery report improved changes in stigma compared with those who undergo only an educational approach. Moreover, Corrigan et al. (2012) assert that in-person contact had better effects than video contact. Furthermore, in a subsequent analysis, Corrigan et al. (2015) found that the effects of a contact approach on stigma toward patients who have mental health problems was better sustained over time compared with using an educational approach. The limited effects of an educational intervention on changing health care providers' attitudes toward patients who use heroin and alcohol use was also observed in a study by Crapanzano et al. (2014). According to Crapanzano et al. (2014), participants' stigmatizing attitudes toward heroin use slightly improved after a 3-hour educational intervention; however, these attitudes remained at the same level with alcohol use. Despite the

previous findings on educational method limited effect on stigma associated with substance use, Soares, Vargas, and Formigoni's (2013) randomized control design study indicated that an educational intervention can reduce negative attitudes toward patients who have alcohol-related problems if 50% or more of the knowledge obtained from the intervention was used in clinical practice. This indicates that an educational intervention alone may not be sufficient to target health care providers' stigma attitudes.

Subscale scores related to motivation to work with patients who have mild to moderate alcohol and opioid use problems did not reveal statistically significant changes; however, these scores did indeed increase. This result runs contrary to a previous pilot study conducted among primary care nurse practitioner students (Mitchell et al., 2016), which reports that the motivation of the nurse practitioners to work with patients who have mild to moderate alcohol use problems decreased in a statistically significant fashion after SBIRT training. We speculate that this is likely a result of a decrease in the older nursing generation's awareness and understanding of substance use problems that might make them less willing to work with patients who have mild to moderate alcohol use problems, compared with the younger generation of nurses (Gilchrist et al., 2011; Skinner, Roche, Freeman, & Mckinnon, 2009). Further studies are needed to examine other interventions that could influence the motivation of nurses to work with this patient population. In addition, these nonsignificant results can be attributed to the study's small sample size.

Finally, the Spearman correlation revealed a moderately positive yet statistically significant association between the nurse participants' fear, perceived dangerousness, and social distance scores vis-à-vis patients who have mild to moderate alcohol use problems. Moreover, we observed a statistically significant, moderate negative correlation between fear, motivation, and familiarity vis-à-vis the same patient population. Similarly, we observed a statistically significant moderate positive association between fear, perceived dangerousness and social distance scores vis-à-vis patients who have mild to moderate opioid use problems. In addition, we observed a statistically significant moderate negative correlation between fear, motivation, and social desirability scores vis-à-vis the same patient population.

Interestingly, we observed (a) a small, nonstatistically significant positive correlation between the motivation subscale score and the familiarity subscale score; (b) a small, nonstatistically significant negative correlation between the motivation subscale score and the perceived dangerousness and social distance scores; and (c) a moderate, statistically significant negative correlation between the motivation and fear subscale scores toward patients who have mild to moderate alcohol and opioid use problems. These results suggest that no relationship exists between most stigma

variables and motivation to work among this patient population. Nonetheless, this result should be interpreted cautiously, given the small sample size ($n = 49$) of our study.

Limitations

Our study has five main limitations. First, we used a one sample pretest–posttest design. Therefore, the absence of a comparison or control group may limit the generalizability of our results. Second, this study had a small sample size ($n = 49$), which limits the generalizability of our results to larger populations of nursing students. Third, our study used a sample of junior-level nursing students that was predominately female (98%) and Caucasian (89.9%). Therefore, this sample may not be representative of all undergraduate nursing students in other programs. Fourth, no data were collected from the students regarding either their own substance use or their acquaintances (e.g., a friend or a family member) who may have or has had a substance use problem. This lack of data could be a confounding factor that influence our results. Indeed, according to Sorsdahl, Stein, and Myers (2012), individuals who use substances more frequently hold more negative attitudes (e.g., blame and avoidance) toward other individuals with substance use problems compared with the general population. Fifth, we were not able to test the validity and reliability of our modified instruments due to the small sample size; however, previous studies (El Rasheed, El Sheikh, El Missiry, Hatata, & Ahmed, 2016; Janulis et al. 2013) have used similar instruments among populations with SUDs and reported reliability. For example, Janulis et al. (2013) report the following psychometric properties for three of the same subscales we examined: perceived dangerousness (alcohol $\alpha = .83$; heroin $\alpha = .83$), fear (alcohol $\alpha = .97$; heroin $\alpha = .98$), and social distance (alcohol $\alpha = .88$; heroin $\alpha = .89$).

Future Directions in Addiction Stigma Research

The results of the study described in this article present a number of avenues for future research in the area of stigma toward treating patients with mild to moderate alcohol and opioid use problems. First, because our study was unable to control for confounding factors, a randomized controlled trial could test the hypothesis of a direct causal relationship between the effect of SBIRT on variables such as familiarity, perceived dangerousness, fear, social distance, and motivation. Second, our small sample size ($n = 49$) prevented us from examining the nature of the relationship between the motivation of undergraduate nursing students to work with patients who have mild to moderate alcohol and opioid use problems and the variables (i.e., familiarity, perceived dangerousness, fear, and social

distance) underlying the stigma they may have toward these patients. Therefore, a larger sample size is needed to explore the relationship between the variables of interest, which would increase our understanding of SBIRT education and training. Such an understanding could facilitate modification of SBIRT that can increase the motivation of undergraduate nursing students and the younger generation of nurses to work with this patient population. In addition, it is important to note that changing the language used in the assessment tools to target mild to moderate alcohol and opioid use problems may affect the results and conclusions and thus requires further testing on other populations with a larger sample size.

Conclusion

The study described in this article provides some support to the use of SBIRT education and training in undergraduate nursing curricula as an intervention that can mitigate the stigma that undergraduate nursing students have toward working with patients who present mild to moderate alcohol and opioid use problems. Subsequent studies with larger sample sizes and randomized controlled trial design could not only corroborate our results but also further examine the nature of the relationship between the motivation of these students to work with this patient population and the attitudes they hold about this patient population.

Authors' Note

This study was granted an exemption status by the University of Pittsburgh, Human Research Protection Office (HRPO), Institutional Review Board (IRB # PRO15100185).

Acknowledgments

We would like to thank Brian Greene, EdD, scientific editor and writer at the University of Pittsburgh, School of Nursing, for his assistance with preparing this article for publication.

Author Roles

The authors of the manuscript made a substantial contribution to the concept and design; acquisition of data or analysis and interpretation of data; reviewed the results of the article; or approved the version to be published.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this

article: This study was funded by the Ruth and Bill Fincke, PhD Student Research Award, University of Pittsburgh, School of Nursing.

References

- Agley, J., Gassman, R. A., Vannerson, J., & Crabb, D. (2014). Assessing the relationship between medical residents' perceived barriers to SBIRT implementation and their documentation of SBIRT in clinical practice. *Public Health, 128*, 755-758. doi:10.1016/j.puhe.2014.05.011
- Anderson, P., & Clement, S. U. E. (1987). The AAPPQ revisited: The measurement of general practitioners' attitudes to alcohol problems. *British Journal of Addiction, 82*, 753-759. doi:10.1111/j.1360-0443.1987.tb01542.x
- Burns, H. K., Puskar, K., Flaherty, M. T., Mitchell, A. M., Hagle, H., Braxter, B., . . . Woomer, G. R. (2012). Addiction training for undergraduate nurses using screening, brief intervention, and referral to treatment. *Journal of Nursing Education and Practice, 2*(4), 167-177. doi:10.5430/jnep.v2n4p167
- Chun, T. H., Spirito, A., Rakowski, W., D'Onofrio, G., & Woolard, R. H. (2011). Beliefs and practices of pediatric emergency physicians and nurses regarding counseling alcohol-using adolescents: Can counseling practice be predicted? *Pediatric Emergency Care, 27*, 812-825. doi:10.1097/PEC.0b013e31822c1343
- Clark, H. W., Power, A. K., Le Fauve, C. E., & Lopez, E. I. (2008). Policy and practice implications of epidemiological surveys on co-occurring mental and substance use disorders. *Journal of Substance Abuse Treatment, 34*(1), 3-13. doi:10.1016/j.jsat.2006.12.032
- Corrigan, P. W., Edwards, A. B., Green, A., Diwan, S. L., & Penn, D. L. (2001). Prejudice, social distance, and familiarity with mental illness. *Schizophrenia Bulletin, 27*, 219-225. doi:10.1093/oxfordjournals.schbul.a006868
- Corrigan, P. W., Kuwabara, S. A., & O'Shaughnessy, J. (2009). The public stigma of mental illness and drug addiction findings from a stratified random sample. *Journal of Social Work, 9*, 139-147. doi:10.1177/1468017308101818
- Corrigan, P., Markowitz, F. E., Watson, A., Rowan, D., & Kubiak, M. A. (2003). An attribution model of public discrimination towards persons with mental illness. *Journal of Health and Social Behavior, 44*, 162-179.
- Corrigan, P., Michaels, P. J., & Morris, S. (2015). Do the effects of antistigma programs persist over time? Findings from a meta-analysis. *Psychiatric Services, 66*, 543-546. doi:10.1176/appi.ps.201400291
- Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsch, N. (2012). Challenging the public stigma of mental illness: A meta-analysis of outcome studies. *Psychiatric Services, 63*, 963-973. doi:10.1176/appi.ps.201100529
- Corrigan, P. W., Schomerus, G., Shuman, V., Kraus, D., Perlick, D., Harnish, A., . . . Smelson, D. (2017). Developing a research agenda for reducing the stigma of addictions, Part II: Lessons from the mental health stigma literature. *American Journal on Addictions, 26*, 67-74. doi:10.1111/ajad.12436
- Corrigan, P. W., & Penn, D. L. (1999). Lessons from social psychology on discrediting psychiatric stigma. *American Psychologist, 54*, 765-776. doi:10.1037/0003-066X.54.9.765
- Crapanzano, K., Vath, R. J., & Fisher, D. (2014). Reducing stigma towards substance users through an educational intervention: Harder than it looks. *Academic Psychiatry, 38*, 420-425. doi:10.1007/s40596-014-0067-1
- Cuijpers, P., Riper, H., & Lemmers, L. (2004). The effects on mortality of brief interventions for problem drinking: A meta-analysis. *Addiction, 99*, 839-845. doi:10.1111/j.1360-0443.2004.00778.x
- El Rasheed, A. H., El Sheikh, M. M., El Missiry, M. A., Hatata, H. A., & Ahmed, N. (2016). Addiction stigma among mental health professionals and medical students in Egypt. *Addictive Disorders & Their Treatment, 15*, 165-174. doi:10.1097/ADT.0000000000000090
- Estee, S., Wickizer, T., He, L., Shah, M. F., & Mancuso, D. (2010). Evaluation of the Washington state screening, brief intervention, and referral to treatment project: Cost outcomes for Medicaid patients screened in hospital emergency departments. *Medical Care, 48*, 18-24. doi:10.1097/MLR.0b013e3181bd498f
- Gilchrist, G., Moskalewicz, J., Slezakova, S., Okruhlica, L., Torrens, M., Vajd, R., & Baldacchino, A. (2011). Staff regard towards working with substance users: A European multi-centre study. *Addiction, 106*, 1114-1125. doi:10.1111/j.1360-0443.2011.03407.x
- Gryczynski, J., Mitchell, S. G., Peterson, T. R., Gonzales, A., Moseley, A., & Schwartz, R. P. (2011). The relationship between services delivered and substance use outcomes in New Mexico's Screening, Brief Intervention, Referral and Treatment (SBIRT) Initiative. *Drug and Alcohol Dependence, 118*, 152-157. doi:10.1016/j.drugalcdep.2011.03.012
- Holland, C. L., Pringle, J. L., & Barbetti, V. (2009). Identification of physician barriers to the application of screening and brief intervention for problem alcohol and drug use. *Alcoholism Treatment Quarterly, 27*, 174-183. doi:10.1080/07347320902784890
- Horch, J. D., & Hodgins, D. C. (2008). Public stigma of disordered gambling: Social distance, dangerousness, and familiarity. *Journal of Social & Clinical Psychology, 27*, 505-528. doi:10.1521/jscp.2008.27.5.505
- Horgan, C., Skwara, K. C., & Strickler, G. (2001). *Substance abuse: The nation's number one health problem*. Princeton, NJ: Robert Wood Johnson Foundation.
- Humeniuk, R., Ali, R., Babor, T., Souza-Formigoni, M. L. O., de Lacerda, R. B., Ling, W., . . . Simon, S. (2012). A randomized controlled trial of a brief intervention for illicit drugs linked to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in clients recruited from primary health-care settings in four countries. *Addiction, 107*, 957-966. doi:10.1111/j.1360-0443.2011.03740.x
- Janulis, P., Ferrari, J. R., & Fowler, P. (2013). Understanding public stigma toward substance dependence. *Journal of Applied Social Psychology, 43*, 1065-1072. doi:10.1111/jasp.12070
- Johnson, M., Jackson, R., Guillaume, L., Meier, P., & Goyder, E. (2011). Barriers and facilitators to implementing screening and brief intervention for alcohol misuse: A systematic review of qualitative evidence. *Journal of Public Health, 33*, 412-421. doi:10.1093/pubmed/fdq095

- Kaner, E., Rapley, T., & May, C. (2006). Seeing through the glass darkly? A qualitative exploration of GPs' drinking and their alcohol intervention practices. *Family Practice, 23*, 481-487. doi:10.1093/fampra/cml015
- Kendall, M. G. (1962). *Rank correlation methods*. London, England: Charles Griffin.
- Krupski, A., Sears, J. M., Joesch, J. M., Estee, S., He, L., Dunn, C., . . . Ries, R. (2010). Impact of brief interventions and brief treatment on admissions to chemical dependency treatment. *Drug and Alcohol Dependence, 110*, 126-136. doi:10.1016/j.drugalcdep.2010.02.018
- Link, B. G., Cullen, F. T., Frank, J., & Woziak, J. F. (1987). The social rejection of former mental patients: Understanding why labels matter. *American Journal of Sociology, 92*, 1461-1500. doi:10.1086/228672
- Madras, B. K., Compton, W. M., Avula, D., Stegbauer, T., Stein, J. B., & Clark, H. W. (2009). 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, 99*, 280-295. doi:10.1016/j.drugalcdep.2008.08.003
- Martinez, R. J., & Murphy-Parker, D. (2003). Examining the relationship of addiction education and beliefs of nursing students toward persons with alcohol problems. *Archives of Psychiatric Nursing, 17*, 156-164. doi:10.1016/S0883-9417(03)00086-4
- Mertens, J. R., Chi, F. W., Weisner, C. M., Satre, D. D., Ross, T. B., Allen, S., . . . Sterling, S. A. (2015). Physician versus non-physician delivery of alcohol screening, brief intervention and referral to treatment in adult primary care: The ADVISE cluster randomized controlled implementation trial. *Addiction Science & Clinical Practice, 10*(1), 1-17. doi:10.1186/s13722-015-0047-0
- Mitchell, A. M., Mahmoud, K. F., Puskar, K., Hagle, H., Lindsay, D., & Knapp, E. (2016). Teaching screening, brief intervention, and referral to treatment techniques to nurse practitioner students. *Journal for Nurse Practitioners, 12*, e311-e317. doi:10.1016/j.nurpra.2016.03.018
- Mitchell, A. M., Puskar, K., Haggie, H., Gotham, H. J., Talcott, K. S., Terhorst, L., . . . Burns, H. K. (2013). Screening, brief intervention, and referral to treatment: Overview of and student satisfaction with an undergraduate addiction training program for nurses. *Journal of Psychosocial Nursing and Mental Health Services, 51*(10), 29-37. doi:10.3928/02793695-20130628-01
- National Institute on Drug Addiction. (2012). *Principles of drug addiction treatment: A research-based guide* (3d ed.). Retrieved from <https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/principles-effective-treatment>
- Neville, K., & Roan, N. (2014). Challenges in nursing practice: Nurses' perceptions in caring for hospitalized medical-surgical patients with substance abuse/dependence. *Journal of Nursing Administration, 44*, 339-346. doi:10.1097/NNA.0000000000000079
- Pringle, J. L., Kowalchuk, A., Meyers, J. A., & Seale, J. P. (2012). Equipping residents to address alcohol and drug abuse: The national SBIRT residency training project. *Journal of Graduate Medical Education, 4*(1), 58-63. doi:10.4300/JGME-D-11-00019.1
- Puskar, K., Gotham, H. J., Terhorst, L., Hagle, H., Mitchell, A. M., Braxter, B., . . . Burns, H. K. (2013). Effects of Screening, Brief Intervention, and Referral to Treatment (SBIRT) education and training on nursing students' attitudes toward working with patients who use alcohol and drugs. *Substance Abuse, 34*, 122-128. doi:10.1080/08897077.2012.715621
- Rahm, A. K., Boggs, J. M., Martin, C., Price, D. W., Beck, A., Backer, T. E., & Dearing, J. W. (2015). Facilitators and barriers to implementing Screening, Brief Intervention, and Referral to Treatment (SBIRT) in primary care in integrated health care settings. *Substance Abuse, 36*, 281-288. doi:10.1080/08897077.2014.951140
- Rassool, G. H., & Rawaf, S. (2008). Predictors of educational outcomes of undergraduate nursing students in alcohol and drug education. *Nurse Education Today, 28*, 691-701. doi:10.1016/j.nedt.2007.11.005
- Reynolds, W. M. (1982). Development of reliable and valid short forms of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology, 38*, 119-125. doi:10.1002/1097-4679(198201)38:13.0.CO;2-I
- Skinner, N., Roche, A. M., Freeman, T., & Mckinnon, A. (2009). Health professionals' attitudes towards AOD-related work: Moving the traditional focus from education and training to organizational culture. *Drugs: Education, Prevention and Policy, 16*, 232-249. doi:10.1080/09687630902876338
- Soares, J., Vargas, D. D., & Formigoni, M. L. O. D. S. (2013). Knowledge and attitudes of nurses towards alcohol and related problems: The impact of an educational intervention. *Revista da Escola de Enfermagem da USP, 47*, 1172-1179. doi:10.1590/S0080-623420130000500023
- Sorsdahl, K., Stein, D. J., & Myers, B. (2012). Negative attributions towards people with substance use disorders in South Africa: Variation across substances and by gender. *BMC Psychiatry, 12*, 101. doi:10.1186/1471-244X-12-101
- Stoner, S. A., Mikko, A. T., & Carpenter, K. M. (2014). Web-based training for primary care providers on Screening, Brief Intervention, and Referral to Treatment (SBIRT) for alcohol, tobacco, and other drugs. *Journal of Substance Abuse Treatment, 47*, 362-370.
- Substance Abuse and Mental Health Services Administration. (2012). *Results from the 2010 National Survey on Drug Use and Health: Summary of national findings*. Rockville, MD: Author.
- Substance Abuse and Mental Health Services Administration. (2015). *Screening, Brief Intervention, and Referral to Treatment (SBIRT)*. Retrieved from <http://www.samhsa.gov/prevention/sbirt>
- Terhorst, L., Gotham, H. J., Puskar, K. R., Mitchell, A. M., Talcott, K. S., Braxter, B., . . . Woome, G. R. (2013). Confirming the factor structure of the Alcohol and Alcohol Problems Questionnaire (AAPPQ) in a sample of baccalaureate nursing students. *Research in Nursing & Health, 36*, 412-422. doi:10.1002/nur.21537
- van Boekel, L. C., Brouwers, E. P., van Weeghel, J., & Garretsen, H. F. (2015). Comparing stigmatizing attitudes

- towards people with substance use disorders between the general public, GPs, mental health and addiction specialists and clients. *International Journal of Social Psychiatry*, 61, 539-549. doi:10.1177/0020764014562051
- Van Hook, S., Harris, S. K., Brooks, T., Carey, P., Kossack, R., Kulig, J., . . . New England Partnership for Substance Abuse Research. (2007). The "Six Ts": Barriers to screening teens for substance abuse in primary care. *Journal of Adolescent Health*, 40, 456-461. doi:10.1016/j.jadohealth.2006.12.007
- Vendetti, J., Gmyrek, A., Damon, D., Singh, M., McRee, B., & Del Boca, F. (2017). Screening, Brief Intervention and Referral to Treatment (SBIRT): Implementation barriers, facilitators and model migration. *Addiction*, 112(Suppl. 2), 23-33. doi:10.1111/add.13652
- Watson, H., Maclaren, W., & Kerr, S. (2007). Staff attitudes towards working with drug users: Development of the Drug Problems Perceptions Questionnaire. *Addiction*, 102, 206-215. doi:10.1111/j.1360-0443.2006.01686.x
- World Health Organization. (2009). *Atlas on substance use: Resources for the prevention and treatment of substance use disorders*. Geneva, Switzerland: Author.
- Young, M. M., Stevens, A., Galipeau, J., Pirie, T., Garritty, C., Singh, K., . . . Porath-Waller, A. (2014). Effectiveness of brief interventions as part of the Screening, Brief Intervention, and Referral to Treatment (SBIRT) model for reducing the nonmedical use of psychoactive substances: A systematic review. *Systematic Reviews*, 3(1), 1-18. doi:10.1186/2046-4053-3-5