Alcohol and Drug Screening, Brief Intervention, and Referral to Treatment (SBIRT) Training and Implementation: Perspectives from 4 Health Professions

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Objectives: Screening, Brief Intervention, and Referral to Treatment (SBIRT) can effectively identify and address substance misuse and substance use disorders (SUDs), and can be delivered by a range of trained health professionals. Yet, barriers remain to effective training and implementation of SBIRT in health and social service settings, and models of interprofessional collaboration in SBIRT delivery are underdeveloped.

Methods: We reviewed current literature regarding SBIRT effectiveness, training, and implementation by physicians, nurses, psychologists, and social workers. An SBIRT expert and representative from each health profession synthesized literature and training experiences to inform the development of interprofessional training and collaborative implementation strategies.

Results: Each of the health professions involved in SBIRT training and implementation have strengths and weaknesses that influence how SBIRT is taught, learned, and delivered. Some of these are specific to the components of SBIRT, for example, screening versus brief intervention, whereas others depend on profession-driven competencies, for example, motivational interviewing. Professional organizations have encouraged a range of tailored SBIRT training initiatives, but true interprofessional training and the implementation of collaborative, team-based care are largely unrealized.

Conclusions: SBIRT can be a valuable approach to screening and treatment for SUDs when delivered by a range of healthcare professionals. A more nuanced understanding of the assumptions and characteristics of each profession, informed by the emerging field of implementation science, may shape more effective training curricula and highlight interprofessional models of SBIRT delivery that maximize the strengths of each profession.

Key Words: alcohol, brief intervention, drugs, implementation, screening, training

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Alcohol and drug use, and associated problems cause significant morbidity and mortality, and lead to increased healthcare costs. Screening, Brief Intervention, and Referral to Treatment (SBIRT) for unhealthy alcohol and drug use is a public health approach promoted by the US Substance Abuse and Mental Health Services Agency (SAMHSA) that is designed to efficiently identify and intervene with individuals at any point along the substance use continuum, from those ''at risk'' to those meeting criteria for a substance use disorder (SUD). There is evidence that screening and brief intervention (SBI) is effective for hazardous drinking in primary care and emergency department settings (Bertholet et al., 2005; Nilsen et al., 2008; Kaner et al., 2009; Academic ED SBIRT Research Collaborative, 2010; D'Onofrio et al., 2012; O'Donnell et al., 2014), although the majority of studies in these settings excluded patients with alcohol use disorders (O'Donnell et al., 2014). SBI and SBIRT in emergency department and primary care settings have not been shown to be efficacious in reducing drug use (Roy-Byrne et al., 2014; Saitz et al., 2014; Woodruff et al., 2014). Furthermore, brief alcohol interventions in medical settings have fallen short in linking patients to specialty care (Glass et al., 2015). Based primarily on its efficacy in reducing hazardous drinking, SBIRT has been incorporated into primary care practice guidelines (Moyer and Preventive Services Task Force, 2013), and a number of national organizations have endorsed the use of SBIRT and the inclusion of SBIRT curricula in training programs for healthcare professionals.

Although the evidence base for SBIRT to address alcohol and SUDs is lacking, identifying SUDs in healthcare settings is of great importance as it may lead to identification of other comorbidities (eg, hepatitis B/C/HIV infection) and/or health consequences of the SUD that have important clinical implications. Additionally, identifying SUDs in

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primary care and emergency department settings provides an opportunity for initiation of pharmacotherapy (Bernstein and D'Onofrio, 2017).

In 2002, the Association for Medical Education and Research in Substance Abuse published a strategic plan for interdisciplinary faculty development to better prepare all health professionals with knowledge and skills to address substance use (Haack and Adger, 2002). There were subsequent efforts devoted to training interprofessional faculty teams to develop SBIRT curricula (Madden et al., 2006). However, most initial SBIRT training and implementation programs focused almost exclusively on physicians. Despite these efforts, uptake and implementation of SBIRT was slow. Competing demands on physician time, lack of provider knowledge about screening techniques and self-confidence in intervention delivery, and underdeveloped behavioral health infrastructure such as specialty care SUD referral resources proved challenging (Solberg et al., 2006; National Institute on Drug Abuse, 2012). In addition, recognition of the reality of team-based care drove new training and implementation models for SBIRT. These models were designed to leverage the expertise of the range of health professionals present in many healthcare settings, for example, nurses, social workers, and psychologists. As a result, physicians could be supported or even replaced entirely in the SBIRT process (Broyles and Gordon, 2010; Mertens et al., 2015; Sterling et al., 2015). Subsequent SBIRT training programs have encouraged wider SBIRT skill acquisition for other healthcare professionals in hopes of broadening the number of individuals and teams with the capacity to perform SBIRT in clinical settings, and also schools and social service agencies (Broyles and Gordon, 2010).

Significant resources have been directed at training healthcare professionals through SAMHSA-funded Medical Professional Training grants and other avenues. One short-term follow-up study of grant recipients indicated that 67% of grant-funded programs were able to sustain SBIRT services after grant funding ceased (Singh et al., 2017). However, there are concerns whether SBIRT can be implemented into real-world practice in sites that do not receive grant funding. Although a few large healthcare systems such as the Veterans Administration (VA) (Williams et al., 2014) have integrated SBIRT into primary care, it remains to be seen whether most healthcare settings can sustain SBIRT independent of external grant support over the long term. Delivery of effective motivational interviewing (MI) in clinical settings remains a challenge, with evidence indicating that fidelity is often lost following provider training (Hall et al., 2016). Thus, the sustainability of SBIRT remains problematic, despite government efforts.

Although SBIRT training has reached a wide range of professionals, and models of collaborative care are increasingly common, especially in primary care settings, implementing interprofessional team-based care continues to fall short. There are a number of well-described barriers to effective collaboration and implementation including the distinct culture (values, beliefs, customs, behaviors) of each profession and the siloed nature of professional training that limits opportunities for interaction (Hall, 2005). Knowledge of the key strengths of different healthcare professionals and clearly defined roles are important drivers of effective healthcare teams (Xyrichis and Lowton, 2008; Mitchell et al., 2012), and are essential to promoting more effective and efficient models of SBIRT. Hence, improved knowledge and understanding of the different health professions' cultures, training, skills, and abilities is likely to pave the way for more effective interprofessional collaboration, implementation, and coordination of care.

This article considers SBIRT from the perspective of 4 different health professions—medicine, nursing, psychology, and social work—to better understand how professional histories, cultures, training, and skills impact the practice of SBIRT. Literature regarding the application of SBIRT by different health professionals is somewhat sparse, and we have attempted to limit our conclusions to what can be supported by the evidence base. The aim of this review is to promote improved capacity for healthcare teams to collaborate in SBIRT implementation and clinical practice. We have examined the literature on SBIRT effectiveness, training, and implementation by physicians, nurses, psychologists, and social workers. An SBIRT expert and representative from each of these professions synthesized findings regarding evidence base and training experiences of each field, with a focus on shared strengths across disciplines and potential for collaboration. We hope that by informing educators, clinicians, and those developing interprofessional models of SBIRT there will be opportunity for improved and expanded implementation. The following sections and Table 1 consider each profession's strengths and challenges in applying SBIRT. The subsequent ''Discussion'' section highlights the implications of these factors for educators and for the implementation of effective interprofessional SBIRT delivery models.

Medicine

Background

The biomedical model of disease is a central paradigm in physician training. Recognition of the genetic, physiologic, and behavioral factors that play a role in the etiology, natural history, and treatment of SUDs, shape physician perception that SUDs fit into the biomedical disease model. More recently, SUDs have been viewed as chronic diseases with multiple opportunities for physicians to intervene along a continuum from at-risk use to SUDs (Haack and Adger, 2002).

Physician-delivered SBIRT has been implemented in a number of settings including adult primary care (O'Donnell et al., 2014), pediatric primary care (Sterling et al., 2015), emergency departments (D'Onofrio et al., 2008), and obstetrics and gynecology (Wright et al., 2016). Early studies indicated that screening rates for alcohol were low, with only half of primary care physicians reporting inquiry about the maximum amount of alcohol on any 1 occasion and only 13% reporting use of a formal alcohol screening tool (Friedmann et al., 2000). A more recent study in 4 primary care academic practices noted that 89% of patient charts reviewed had documented information about alcohol use, but only 23% included documentation of use of a validated screening

TABLE 1. Factors Influencing SBIRT Training and Implementation in 4 Health Professions

Professions/ Disciplines	Physician	Nursing	Psychology	Social Work
Explanatory model of illness	• Biomedical model • SUD as a chronic relapsing disease	• Continuum of contextually and culturally situated human experiences • Substance use is an element of the continuum with implications for the individual, family, and population	• Behavioral • Biopsychosocial • Family systems • Affect regulation	• Focus on social determinants of health • SUD as a biopsychosocial health condition which may be chronic and relapsing • Ecological model
Historical traditions	• SUD as a chosen behavior and not a disease • SUD treatment seen as a specialty field separate from the rest of healthcare	• Caring for the human response to optimize ability and alleviate suffering	• Behavioral learning and psychodynamic models	• Historically viewed SUD from a "client in their environment perspective" Or: • SUD as either solely related to environment factors or a moral choice
Perceived role(s)	• Expert • Diagnostician • Treatment of disease • Health promotion (primary care) • Disease prevention (primary care)	• Care-giving • Symptom management • Education/brief advice • Health promotion • Disease prevention	• Assessment • Integrated behavioral treatment • Coordination with primary care teams	• Assessment and referral • Case-management • Supervisor of outpatient-inpatient treatment facilities • Family counselor • Child welfare social worker • School counselor
Training emphases	• Diagnosis and treatment of acute and chronic illness • Evidence-based practice • Variable inclusion of curricular content on alcohol and drugs in post-graduate training depending on specialty	• Physical assessment • Caring practices • Evidence-based practice • Diagnosis and management of acute and chronic disease by Advanced Practice Registered Nurses	• Psychological assessment • Talk therapy • Behavioral interventions (e.g., cognitive behavioral therapy, MI)	• Training in field and through internships - including brief intervention, MI, and mental health focused behavioral interventions • Many internships include work with individuals with SUD • Most graduate level educational tracks do not include core content on SUD or SBIRT
Strengths	• Frequent and longitudinal contact with patients (primary care) • Can link substance use to medical issues • Discussion of alcohol and drugs can be integrated into discussion of health-related behaviors • Can initiate pharmacotherapy for SUDs	• Caring • Trust • Therapeutic communication • Assessment skill • Reach • Relationship building • Emphasis on the individual in the context of the family, community and population	• Specialized assessment and behavioral intervention skills	• MI Skills • Frequent and longitudinal contact with clients • Case-management skills • Link clients to a range of psycho-social and medical services • Educational core focuses on social determinants of health and biopsychosocial aspects of health/ illness • History of advocating for clients and working with a range of vulnerable population groups with less access to health services
Challenges	• Lack of training • Lack of knowledge/skills • May not be perceived as part of role • Time constraints • Competing clinical demands • Lack of SUD referral resources/integrated mental health	• Role uncertainty • Empowerment • Lack of training • Reimbursement obstacles • Time constraints	• Lack of biomedical training • Perceptions regarding their role in addressing substance use • Lack of training in very brief interventions and integrated primary care treatment models (e.g., interprofessional teams)	• Lack of training on causes/ consequences of substance use, SUD and addiction • Lack of SBIRT skills focused on SUD and addiction • Need leadership training to work in integrated care • Salaries for social workers in addiction field lower than in other health fields

Notes: MI, motivational interviewing; SBIRT, Screening, Brief Intervention, and Referral to Treatment; SUD, substance use disorder.

instrument (Seale et al., 2015). Additionally, in a national survey of emergency department (ED) physicians, only 20% reported routinely screening for alcohol and drugs, and only 26% used a formal screening tool (Broderick et al., 2015). One study in a primary care setting demonstrated that physicians trained in SBIRT had higher brief intervention and referral rates than nonphysician providers receiving SBIRT training (Mertens et al., 2015). Physician-delivered SBIRT has proven efficacy in reducing hazardous drinking (Bertholet et al., 2005; Harris et al., 2014). However, there are no data on outcomes of physician-delivered brief interventions for illicit drug use. Despite national practice guidelines recommending the routine use of SBIRT to address hazardous drinking in primary care settings (Moyer and Preventive Services Task Force, 2013), support from professional organizations (American College of Obstetricians and Gynecologists, 2015; Committee on Substance Use and Prevention, 2016; American College of Emergency Physicians, 2017) and significant resources directed at SBIRT training programs, widespread implementation of SBIRT by physicians remains limited.

Strengths of SBIRT in Physician-delivered Care

Primary care settings are ideal for the early detection and intervention for risky use and SUDs, given the frequent and longitudinal contact that many patients have with their physicians (Bertholet et al., 2005; O'Donnell et al., 2014). Primary care physicians have a strong focus on preventive healthcare and often discuss healthy lifestyle changes with patients, and counseling about drug and alcohol use can be readily integrated into these discussions. In addition, physicians in acute care settings may be uniquely positioned to intervene with patients at a ''teachable moment'' when a patient with an acute injury or illness related to substance use may be more ready to make a behavior change (Bernstein and D'Onofrio, 2017). Physicians are able to link medical issues with alcohol and other drug use, and to identify and address medical consequences of alcohol and drug use (Haack and Adger, 2002). Finally, given the limited availability of specialty treatment for addiction, there is increasing focus on initiation of treatment for SUDs in the form of pharmacotherapy and physicians in primary care, and acute care settings are well-positioned to provide this treatment given their training (Center for Substance Abuse Treatment, 2009; Rehm et al., 2016; Bernstein and D'Onofrio, 2017).

Challenges in Physician-delivered Care

There are well-described physician-related barriers to performing SBIRT. Despite recommendations that substance use curricula be integrated into medical school and postgraduate training (Polydorou et al., 2008; Jackson et al., 2010; O'Connor et al., 2011), many residents and practicing physicians report a lack of knowledge and skills in screening and brief intervention for patients with at-risk use or frank SUDs and training is variable depending on physician specialty (Friedmann et al., 2000; Cunningham et al., 2010; Wamsley et al., 2016; Stone et al., 2017). Physicians may be reluctant to ask about alcohol/substance use out of concern that patients may be offended or unwilling to discuss these issues (Friedmann et al., 2000). Physicians in settings outside of primary care, such as ED settings, where the primary focus is to provide acute care, may feel that performing brief interventions is not their role or that such interventions will have little effect (Broderick et al., 2015).

Physicians in primary care often address multiple problems in a single visit, and there are well-documented time constraints that limit provision of multiple recommended preventive care interventions (Yarnall et al., 2003). Additionally, physicians are pressed to meet productivity targets and quality metrics, which may lead physicians to prioritize other issues in a clinical visit. In ED settings, providers also commonly report a lack of time and financial constraints as significant barriers to brief intervention delivery (Cunningham et al., 2010). Lack of referral resources and poor coordination with community agencies has been cited as a potential barrier to physician-performed SBIRT (Satre et al., 2012). While there has been a movement towards better integration of mental health into primary care settings, most programs have focused on mood disorders (Gerrity, 2016), and integrated behavioral health is not the norm in most primary care settings.

Nursing

Background

There is increasing momentum for the integration of SBIRT throughout professional nursing practice. National advocates contend that identifying and addressing unhealthy substance use is fundamental to the nursing role of optimizing health and preventing illness. The International Nurses Society on Addictions (IntNSA), the American Psychiatric Nurses Association (APNA), and the Emergency Nurses Association (ENA) have officially adopted the position that nurses in all specialties and practice settings be prepared to deliver SBIRT (American Psychiatric Nurses Association, 2012; Strobbe et al., 2013). Clinical models of nurse-delivered SBIRT have emerged across practice contexts and nursing roles such as the ED, acute care inpatient (particularly within the Veteran's Administration), primary care, midwifery, and school-based health (Desy et al., 2010; Broyles et al., 2013; Naegle et al., 2013; Petersen Williams et al., 2015; Rahm et al., 2015). Available evidence suggests that registered nurse-delivered SBIRT can be successfully implemented to improve screening rates, particularly when adequately supported by workflow accommodations (Slain et al., 2014). A systematic review also demonstrated effectiveness in the reduction of alcohol consumption using nurse conducted BI in a variety of healthcare settings (Joseph et al., 2014). However, evidence indicates that SBIRT screening by nurses in primary care is underutilized, and brief interventions when indicated are even less frequently provided (Lock and Kaner, 2004; Harris and Yu, 2016). Minimal data are available in the nursing literature on the use of SBIRT for addressing illicit drug use. Curricular initiatives are currently ongoing to support the inclusion of SBIRT in undergraduate and graduate nursing programs, and also continuing education training for licensed professionals, to further the development of nursing practice competencies and increase nursing SBIRT implementation.

Strengths of SBIRT in Nursing

The potential reach of nurse-delivered SBIRT is extensive, as nursing is the single largest international healthcare workforce, distributed throughout all levels of the healthcare delivery system including public health departments, home health, schools, ambulatory care settings, outpatient treatment facilities, and acute care hospitals. Primary care clinical services are increasingly delivered by nurse practitioners (NPs), particularly among vulnerable populations and underserved communities, extending the reach of SBIRT among potentially at-risk groups (Buerhaus et al., 2015). In acute care settings, nurses are the licensed professionals with the most extended exposure to both the patient and family, providing unique opportunities for substance use assessment and the delivery of brief intervention (Finnell, 2012). Utilization of the nursing staff in SBIRT implementation in the inpatient setting is also a potential strategy to facilitate attainment of the Joint Commission substance use assessment and intervention quality measure metric.

Nurses are well-equipped with the requisite skills for successful SBIRT delivery, including patient assessment, therapeutic communication, and interprofessional collaboration. The impact of nurse-delivered SBIRT is potentially optimized by the nursing care-based relationship and incorporation of the biopsychosocial practice model. Consumer trust in nurses, highlighted by Gallup poll data distinguishing nursing as the ''most trusted'' profession, may facilitate SBIRT acceptance and patient engagement (Norman, 2016). Despite reported concern among some nurses regarding patient receptivity to SBIRT, available data indicate that patients are willing to engage in substance use discussions with nursing providers (Broyles et al., 2012a). Nurse-delivered SBIRT has been found to be as effective, and more cost-effective, than physician-delivered SBIRT (Tolley and Rowland, 1991; Babor et al., 2006). Finally, advanced practice nurses are well-positioned to initiate pharmacotherapy for substance use disorders in primary care and acute care settings, which is increasingly important given the limited availability of specialty treatment for substance use disorders (Bernstein and D'Onofrio, 2017).

Challenges to SBIRT in Nursing

Identified barriers to nurse-delivered SBIRT include insufficient training and knowledge, underdeveloped implementation and clinical workflow protocols, concerns regarding patient receptivity, time constraints, inadequate electronic health record integration, and lack of organizational support (Broyles et al., 2012b; Finnell, 2013). Role uncertainty may cause nonphysician providers to feel less comfortable and less responsible for addressing substance use issues with their patients than physicians (Harris and Yu, 2016). Role uncertainty may be further intensified by the wide variety of different nursing training programs and the degree-dependent scope of practice functions (eg, the role of a registered nurse vs a licensed vocational nurse). Available data suggest that nonphysician providers (nurse practitioners and physician assistants) are less likely to refer to specialty treatment than physicians (50% vs 70%; $P = 0.001$) (Harris and Yu, 2016). Further training and support for nurse-delivered referral to treatment may be necessary to help connect patients with SUD treatment.

Reimbursement policies are an additional barrier to care. Reimbursement for SBIRT does not include services provided by registered nurses as they are not classified as licensed independent providers (American Academy of Nursing on Policy, 2015). Moreover, ''same day'' reimbursement restrictions may preclude the provision of SBIRT services by a designated advanced practice nurse or other licensed independent provider if it occurs in conjunction with a separate primary care visit billed on the same day.

Psychology

Background

Although there has been a longstanding focus in psychology on the relationship of alcohol and drug use to mental health more broadly, relatively few studies have examined delivery of SBIRT by psychologists. However, psychologists play an increasingly important role in addressing behavioral health problems in primary care, and also mental health specialty care settings (American Psychological Association, 2015). Patients with significant alcohol or drug use problems often first seek primary care and/or mental health care rather than specialty addiction treatment (Denering and Spear, 2012; Edlund et al., 2012), providing an opportunity for psychologists to screen and intervene for substance use concerns with a patient population that might otherwise be missed. Given its inclusion of screening/assessment, intervention, and connection (referrals) to specialty care, SBIRT is particularly well-matched to the role and skills sets found in many psychologists.

Strengths of SBIRT in Psychology

Psychologists bring a number of strengths to SBIRT delivery in the primary healthcare settings in which psychologists increasingly work (American Psychological Association, 2011 [updated March 2012]). Psychologists generally have strong screening and assessment skills with advanced training in psychometrics and evidence-based case formulation. Psychologists are often trained in motivational enhancement strategies and structured behavior change interventions that can readily be applied to substance use screening and brief interventions. Additionally, they have an understanding of family systems and other social contexts that contribute to substance use. The efficacy of brief interventions using MI to reduce both hazardous drinking and marijuana use appears promising in studies using psychologist providers (Satre et al., 2016), although efficacy data on other drugs are lacking. MI can be integrated into behavioral interventions frequently offered by psychologists, for example, combined with brief cognitive behavioral therapy to address both substance use and mental health symptoms (Baker et al., 2014). SBIRT also has support from the American Psychological Association, which has endorsed its use by psychologists and offers online trainings to help psychologists enhance their skills (American Psychological Association, 2012; APA Member Services, 2017). These trainings include alcohol, tobacco, illegal drugs, nonprescription use of prescription medications, and also problem gambling.

Challenges of SBIRT in Psychology

Some psychologists may not see substance use screening and intervention as integral to their role or may believe that substance use problems may resolve on their own if mental health symptoms are effectively treated. Unlike many other healthcare professions, psychologists generally lack biomedical training, which limits their ability to speak directly to patients' questions regarding the health effects of alcohol and drug use, or medication interactions. Psychologists may not be well-integrated into primary care nor have received training in how to function effectively in interprofessional teams, resulting in potential for role confusion and uncoordinated care (American Psychological Association, 2015). Psychologists accustomed to longer psychotherapy models (eg, 45-minute timeframes over 10 or more sessions) may need to adjust to briefer approaches to facilitate integration into primary care (Blount and Miller, 2009; Bluestein and Cubic, 2009). If these challenges can be addressed, psychologists have an outstanding opportunity to contribute to the identification and treatment of individuals with alcohol or drug use problems in primary care and other healthcare settings.

Social Work

Background

Social workers provide care in a range of settings where the use of SBIRT skills are valuable including schools, community health centers (Roy-Byrne et al., 2014; Duong et al., 2016), inpatient settings and outpatient mental health centers (Senreich et al., 2017), and in nontraditional settings. Social workers also work as mental health clinicians and clinical staff supervisors in psychosocial SUD treatment settings, either supervising screening/assessment or conducting these tasks. Furthermore, the profession of social work is historically based on an integrated care model. Specifically, a key skill that professional social workers were trained in from the inception was case management: promoting ongoing, long-term contact with clients; responding to a range of client biopsychosocial needs; and working with other health professionals located in a range of healthcare institutions (Peterson, 1965; Lundblad, 1995; Block et al., 2014). The Council of Social Work Education (CSWE) recommends that all educational programs include a ''client in their environment'' perspective (Council on Social Work Education, 2017), and the majority of programs train their students to have a biopsychosocial perspective in assessing client needs and resources (Rogers, 2013; Council on Social Work Education, 2017). This perspective is critical to understanding addiction as a chronic, relapsing health condition with biopsychosocial causes and consequences (Volkow, 2004; Volkow and Li, 2004).

Strengths of SBIRT in Social Work

The above background factors support the position that social workers practice in a range of care settings where SBIRT could be implemented and should be trained in SBIRT. There are additional strengths for social workers using SBIRT. For example, clinical social workers receive training in MI (Wahab, 2005; Hohman et al., 2015), which is a core skill set for both SBIRT and relapse prevention techniques (Babor et al., 2007; Duong et al., 2016), and provides a strong foundation on which to build SBIRT skills.

With the move towards integrated behavioral health models in primary care, there are increased opportunities for behavioral health specialists, including social workers, who are trained in assessment, screening, and treatment of SUDs (McLellan and Woodworth, 2014). The National Institute on Drug Abuse, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), Health Resources Services Administration, and the Substance Abuse and SAMHSA that fund behavioral health training now provide this funding to schools of social work (Council on Social Work Education, 2017; Substance Abuse and Mental Health Administration, 2017). Social workers are also critical to implementing BI and brief treatment (BT) in that social workers in clinical practice are trained to deliver a range of cognitive behavioral approaches. It has to be acknowledged, however, that meta-analyses and systematic reviews from the past 10 years on BI and BT show inconclusive evidence of their effectiveness, particularly for drug use (Saitz et al., 2014; Young et al., 2014; Lundgren and Krull, 2018). These developments highlight the growing importance of both of social workers in SBIRT delivery, and the need to further test and develop the BI and BT components of SBIRT.

Finally, social workers are trained to work in community health centers and primary care clinics that serve vulnerable and diverse populations. They are prepared to provide services that are linguistically and culturally appropriate and to communicate effectively with clients who have low literacy (Hendren et al., 2010; Leach and Segal, 2011; Nonzee et al., 2012; Andrews et al., 2013; Boulware et al., 2013). These skills are especially valuable given the significant impact of substance use problems in underserved communities.

Challenges of SBIRT in Social Work

The major barriers to the use of SBIRT by social workers are similar to other health professions; lack of knowledge about causes and consequences of substance use (including the biomedical aspects), and lack of skills training in SBIRT (Wilkey et al., 2013; Lundgren and Krull, 2018). In a NIAAA-funded program to increase social work faculty knowledge about empirically supported screening, assessment, and treatment for SUDs, faculty participants showed statistically significant improvement in alcohol and other drug-related knowledge in the domains of screening/assessment, brief intervention, medication-assisted treatment, and recovery and relapse prevention. The faculty's initial knowledge scores were surprisingly low, and 66% cited that, in general, for the social work profession, lack of social work faculty knowledge, and expertise in alcohol and other drug content, and clinical practice skills were barriers to effectively teaching social work students nationwide about SUDs (Lundgren and Krull, 2018; Lundgren et al., in press).

Moreover, social work students often do not learn about SBIRT during graduate school, unless their school receives federal funding to specifically support such training (Rose et al., 2009; Russett and Williams, 2015; Ogden et al., 2016).

This knowledge gap may also result in difficulty with adhering to manuals and standards when implementing SBIRT and other evidence-based practices. For example, in a national study of SAMHSA-funded SUD outpatient and inpatient treatment, clinical staff (including social workers) who reported that their program needed to improve staff assessment capacity and counseling capacity also reported greater barriers to implementing evidence-based practices and adhering to manualized practices with fidelity (Lundgren et al., 2012; Lundgren et al., 2013).

These results highlight the importance of social worker training in SBIRT. Yet, a national study of 210 Masters in Social Work (MSW) programs examined prevalence of addiction courses and specializations and found that only 14% of accredited graduate schools of Social Work offered specialization in substance use and only 5% of accredited schools offered one or more required courses related to substance use (Wilkey et al., 2013). Social work and other health professions' education have not met addiction workforce development needs, and it is only in recent years that this is changing. For example, the Commonwealth of Massachusetts public health commission now recommends that all graduate schools of social work include SBIRT training in their curriculum and the State of Connecticut requires all health professional programs including social work to offer two courses on SUDs. Thus, social work is well-positioned to increase its role in SUD screening and treatment in the years ahead.

DISCUSSION

Screening, brief intervention, and referral to treatment has become increasingly common in a wide range of health professional training programs and clinical practice sites. At present, professional ''ownership'' of SBIRT skills remains open, and the optimal clinical flow for team-based SBIRT delivery has not been established. As anticipated, each profession perceives and experiences SBIRT differently, depending on a number of factors including professional history and culture, assumptions about the causes and best interventions for SUDs, and broader system-level factors such as which professional is allowed to bill for which services, and who is authorized to make a referral to specialty SUD treatment. Understanding these profession-driven differences, and also shared strengths (see Table 1), has important implications for SBIRT training and implementation, and the subsequent design of team-based SBIRT delivery. Although alcohol has been the primary focus of SBIRT training and implementation to date, SBIRT for drug use is also promoted by professional organizations, despite limitations of the evidence base.

Implications for SBIRT Interprofessional Training

The majority of SBIRT training programs have targeted early-career health professionals, often before they are fully licensed for clinical practice, for example, the American Psychiatric Nurses Association (2012) and the American Psychological Association (2015). Some professions, such as social work, are currently working with accrediting bodies to articulate specific SBIRT competencies that every trainee will be required to master. Other efforts have targeted professionals already in practice who may lack basic SBIRT training or even basic awareness about the importance of screening for SUDs (National Institute on Drug Abuse, 2012). As summarized in Table 1, both groups—trainees and practicing health professionals—will be influenced by the ''lens'' of their professional culture complete with its histories, philosophies, self-defined roles and responsibilities, and explanations for how SUDs occur, that is, their ''explanatory model of illness.'' For example, the biomedical model of addiction emphasizes potentially irreversible neurological changes that require ongoing medical support to manage withdrawal, cravings, and mood. Medical and nursing trainees, who arrive with variable understanding of SUDs, may be persuaded to adopt the view that addiction is an individual disease requiring medical treatment while downplaying social, familial, and historical forces that influence the onset of substance use, its maintenance, and the acceptability of treatments. Professions more deeply immersed in social ecological frameworks, for example, social work and psychology, may de-emphasize dyadic interventions in favor of public health, community, or family-based strategies or drug control policies, or they may de-emphasize medications and focus on referring clients to psychosocial treatment organizations.

Regardless of the lens, it is always present and it would behoove instructors to understand the lens through which trainees or practitioners may view patients, the use of substances, and SBIRT itself. However, in addition to differences in perspective, health professionals share a common mission of assisting individuals in health care, some degree of training in behavioral health problems, and a basic understanding of healthcare systems. The components of effective SBIRT—screening using validated measures, brief interventions delivered using MI and other established methods, and linkage of higher-severity patients to specialty care—can be delivered by any of the 4 professions we reviewed. Collaborative care delivery can help maximize the strengths of each discipline. Guidelines for integrating MI into health care can help trainees from different disciplines develop core MI communication skills (eg, asking, listening, and informing), and prepare to manage time constraints, clinical setting demands, and the need for flexibility in brief interventions (Rollnick et al., 2008). Ideally, training programs will continue to explore true interprofessional training approaches in which trainees learn SBIRT within (and through) an interprofessional team allowing them to better understand one another and prepare for real world practice.

Implications for SBIRT Collaborative Implementation Strategies

Implementation science is a rapidly emerging field developed in response to the documented challenges in moving evidence-based practices from the ''ivory towers'' to the frontlines of clinical care, for example, Damschroder (2009). Although the number of health professionals receiving SBIRT training has risen dramatically, meaningful implementation of SBIRT into clinical practice is largely unexplored with the exception of the VA Health Care System (Williams et al., 2014).

As described above, all of the professions acknowledge the presence and importance of substance misuse across a broad range of clinical and social service settings. While their emphases may vary, the potential utility of screening patients and preventing progression to full blown SUDs is not questioned. Ideas of how, when, and where SBIRT should be implemented (and who should deliver it) diverge widely and may, in large part, depend on the service delivery setting and the composition of practice teams. For example, the strategy and resulting clinical flow of effective screening and brief interventions for a primary care practice will differ from what works in an inpatient hospital setting, a community-based nonprofit health clinic, a school setting, or an outpatient psychology clinic.

Additional complexities arise in settings with multiprofessional teams where professional roles may not be clearly articulated or where questions of power, authority, or responsibility are unresolved. An enriched understanding of each profession's self-perceived roles, and clear communication regarding each professional's responsibilities could help to improve clinical work flows while reducing conflict and inefficiencies. Although beyond the scope of this manuscript, implementation models such as the Consolidated Framework for Implementation Research (Damschroder et al., 2009) could provide additional guidance in understanding how to craft effective SBIRT implementation strategies while taking into account the characteristics of individuals (and disciplines) and the implementation processes most in line with professional competencies, preferences, and the practice environment.

Data about the effectiveness of team-based SBIRT delivery are still accumulating, and existing evidence shows conflicting results regarding which models are most effective. For example, 1 study performed in a large pediatric primary care clinic suggested that embedded behavioral healthcare providers trained in SBIRT were more likely to perform brief interventions when compared with pediatricians trained to provide SBIRT (Sterling et al., 2015). On the contrary, in a study performed in adult primary care, primary care providers were more likely to perform brief interventions and make referrals than nonphysician providers (behavioral health specialists, clinical health educators, or registered nurses) trained in SBIRT (Mertens et al., 2015). In other studies in ED or trauma settings, nurses have administered screening tools for alcohol use, and social workers or health educators have delivered brief interventions (Johnson et al., 2013; Gormican and Hussein, 2017). The current literature is sparse and limits the conclusions that can be drawn regarding the effectiveness of specific professions in SBIRT delivery in healthcare settings. Additional research is needed to better elucidate which team-based SBIRT implementation models are most effective and under what circumstances.

Ideally, clinics will have rich, interprofessional teams from which to draw complementary or even synergistic expertise. Psychologists may be used to select, implement, and monitor the use of psychometrically sound screening instruments and empirically-supported brief behavioral interventions. Social workers may establish linkages to service delivery systems, promote the inclusion of family members and social supports, and serve as key contacts for patients over longer periods of time, providing a mix of MI, case management, and psychotherapy. Physicians and nurse practitioners may contribute essential medical management for withdrawal or pharmacotherapy, whereas registered nurses integrate and sustain the practice of universal screening, documentation, and follow-up as part of the clinic's standard work flow. In reality, practice settings vary in resources and expertise. However, a deeper and more nuanced understanding of what each professional may bring could enhance efficiency and effectiveness while clarifying roles and establishing more cohesive teams (Broyles and Gordon, 2010; Mitchell et al., 2012). For example, SBIRT training could include not only the individual SBIRT skill components, but also the current understanding of professional skill sets, implementation models, and workflow management.

In summary, it is important to recognize that while real world practice is often multiprofessional, training remains siloed. This results in differences in how diseases, patients, and treatments may be perceived and the meaningful implementation of collaborative, team-based care continues to be mostly aspirational. Having a deeper understanding of each professional ''lens,'' and also shared strengths across disciplines may provide important insights in shaping implementation strategies and work flows, and promote truly collaborative, team-based care. Future design and research on interprofessional training and implementation programs are needed if we are to effectively transform our approach to substance misuse and SUDs across the healthcare system.

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