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Item Type	Article
Authors	Myers, Bronwyn;Sorsdahl, Katherine
Citation	Addressing Substance Use within Primary Health Care Settings in South Africa: Opportunities and Challenges 2015 Addicta: The Turkish Journal on Addictions
DOI	10.15805/addicta.2014.1.2.023
Journal	Addicta: The Turkish Journal on Addictions
Rights	Archived with thanks to Addicta: The Turkish Journal on Addictions
Download date	2026-05-15 14:15:31
Link to Item	http://hdl.handle.net/11288/595088

Addressing Substance Use within Primary Health Care Settings in South Africa: Opportunities and Challenges

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Abstract

Traditionally, substance use services have not been provided by South African primary health care facilities, limiting access to treatment. A lack of mental health workers has slowed plans to integrate these services into the primary health care system. This has prompted calls for the task-shifting of some treatment responsibilities from mental health specialists to non-specialty health workers. We present findings from three projects that used a task-shifting approach to integrate brief interventions (BIs) for substance use into primary care. The first involved the horizontal integration of nurse-led BI services. In our three-month evaluation, we found significant reductions in substance use ($p < 0.001$). The second involved the vertical integration of a community health worker-delivered BI within emergency services. In a randomized controlled trial, participants were assigned to a session of motivational interviewing (MI), a five-session blended MI and problem-solving therapy (PST) intervention, or a control group. At three months, ASSIST scores were significantly lower in the MI-PST group than in the other groups ($p < 0.001$). In the third, we horizontally integrated a nurse-delivered BI intervention into an antenatal clinic. There was low detection of alcohol use; however, tobacco use decreased significantly following the intervention ($p < 0.001$). Through task-shifting, it is feasible to provide substance use services in primary health care in low- and middle-income countries. It remains unclear whether it is more feasible, acceptable, and effective to integrate these services into primary care using horizontally or vertically integrated approaches. These questions need to be answered in order to guide the implementation of these new health services.

Keywords: Substance use • Primary care • Task shifting • Integration • South Africa

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Background

Substance use disorders represent a major public health problem, both globally and in South Africa. Data from a recent, nationally representative community sample, the South African Stress & Health study (SASH), indicate a high lifetime prevalence (13.3%) and early onset (21 years) of substance use disorders (Stein et al., 2008). Compared to the other provinces in the country, the Western Cape appears particularly affected by substance use disorders. For example, the SASH study found significantly higher lifetime prevalence rates for substance use disorders in the Western Cape compared to the other provinces. This is concerning given the evidence that the availability of substance abuse treatment services is limited in the Western Cape (with existing services largely overwhelmed by the demand for treatment) (Myers, Petersen, Kader, & Parry, 2012).

One way of improving access to treatment in South Africa is to increase the range of treatment services available in order to ensure that services cover the full continuum of care (Myers, Petersen et al., 2012). The existing substance abuse treatment system relies heavily on the provision of high-threshold treatment services offered by specialist service providers, with few low-threshold early intervention services available at a primary health care level. This limits access to care because high-threshold services are costly to provide. Apart from the limited availability of these services (with only about 16,000 treatment slots available annually), there are also well-documented structural issues to accessing these services, including affordability and geographic access barriers (Myers, 2013; Myers, Fakier, & Louw, 2009; Myers, Louw, & Pasche, 2010). Another barrier to treatment utilization relates to low rates of perceived need for treatment among people who may benefit from these services; often people only seek out treatment when their problems have become severe and require intensive services (Myers et al., 2009; Myers, Kline, Doherty, Carney, & Wechsberg, 2014). Increasing the repertoire of substance use services to include lower threshold intervention services that focus on providing screening to facilitate early case detection, brief interventions (BIs), and (where needed) referrals to more intensive treatment may be a cost-effective way of expanding access to care than providing more high threshold specialist treatment services.

Evidence from high-income countries suggests that screening, BI, and referral to treatment (SBIRT) for substance use disorders is effective for addressing

mild to moderate substance-related problems and is feasible to implement in health services (Babor et al., 2007; Drummond et al., 2009). To date, there has been little evidence from South Africa about the effectiveness or feasibility of implementing SBIRT for substance use problems in health services. Providing SBIRT in primary health care settings is a widely supported strategy for increasing the detection of substance-related problems among people who may present for primary care services but would not ordinarily seek out substance use or mental health services (Madras et al., 2009). Proponents argue that SBIRT would not only improve patient's lives by preventing the progression of their substance use disorder but would also result in cost savings to the health system. Because substance use often contributes to risk for injury, and poorer chronic communicable and non-communicable disease outcomes, and because these health problems increase health service utilization and costs, the detection and treatment of substance use disorder is critical to an effective and functioning health system (McBain, Salhi, Morris, Salomon, & Betancourt, 2012).

Despite the potential benefits of integrating SBIRT services for substance use into the primary health care system, such services have been absent from primary health care services in South Africa (Bhana, Petersen, Baillie, & Flisher, 2010). This is partly because of the limited capacity to deliver additional mental health services in low-resourced and chronically overburdened health services, and the limited availability of specialist mental health staff in LMICs (McInnis & Merajver, 2011; van Ginneken et al., 2013). Task shifting SBIRT for common mental disorders (including substance use disorders) from specialty to non-specialty health workers has been widely proposed as a strategy for expanding access to substance use and mental health care in countries with few mental health specialists (McInnis & Merajver, 2011; van Ginneken et al., 2013). The World Health Organization has identified four levels of task shifting in which mental health care tasks previously undertaken by mental health specialists are shifted to non-specialist doctors (level 1), nurses (level 2), community health workers (CHW, level 3), and people living with these disorders (level 4), with specialists providing supervision and training to non-specialized cadres (McInnis & Merajver, 2011; van Ginneken et al., 2013). South Africa's non-communicable disease policy framework (2013-2017) embraces task shifting from senior cadres to level 2 and level 3 staff (who comprise the bulk of health workers) as a strategy for integrating and expanding access to substance use

services into primary care settings (Department of Health, 2013). However this integration has been hampered by unanswered questions about how to include SBIRT for substance use into primary care services so that these services are acceptable to patients and providers, and feasible to implement with few additional resources.

In this paper, we reflect upon the lessons learned from three pilot studies that attempted to adopt a task-shifting approach to integrate SBIRT for substance use into primary health care services. We present an overview of each study; evidence of its feasibility, acceptability and impact on substance use outcomes; and the challenges to implementing these programs as planned.

Methods

We present three case studies of efforts to implement SBIRT programs for substance use in primary health care settings within the Western Cape Province of South Africa.

The Jooste Day Hospital Project

This SBIRT program emerged from the realization that for one day hospital in the Western Cape, at least 80% of the 250 patients seeking psychiatric services on a monthly basis had a substance-related psychosis. This led to the creation of a SBIRT program delivered at a substance use center located within the hospital and staffed by a social worker, an auxiliary social worker, and an administrative/research assistant. At this hospital, the process of delivering SBIRT was as follows: All patients presenting for services at this hospital were screened for potential substance use by nurses and any suspected cases of substance use were referred to the substance use center for further follow-up. Patients referred to the center were provided with verbal and written information about the program. The auxiliary social worker then re-screened the patient using a modified version of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) (WHO ASSIST Working Group, 2002) to screen for the presence of problematic substance use. For patients with moderate or high ASSIST scores, the social worker delivered a BI [(based

on motivational interviewing (MI)] to the patient immediately following the screening. Because participants in the high-risk group were more likely to have a substance-related health condition or suspected substance dependence, they were referred for further care to specialist substance abuse treatment centers following the BI. An independent external evaluator conducted the outcomes evaluation of this program (Sorsdahl, Stein, Weich, Fourie, & Myers, 2012) using an uncontrolled one-group pre-test post-test design. All participants who were enrolled into the program participated in the evaluation. At the 3-month follow-up, the ASSIST was re-administered by the administration clerk to all patients, and a feedback questionnaire about the services was completed.

Substance Use and Trauma Intervention (Project STRIVE)

Most primary care clinics in South Africa have level 1 emergency departments that are open 24 hours and deal with injuries and other serious medical conditions requiring emergency medical interventions. In low-income communities in the Western Cape, more than 50% of the patients presenting for these services are related in some way to alcohol or drug misuse. Incidents of violence and injury increase over weekends. The goal of this project was to help reduce high levels of substance-related violence and traumatic injury seen in these settings through providing patients presenting for emergency services with SBIRT for substance use. The SBIRT program went through a thorough development process that included an epidemiological study to assess the coping strategies and problem-solving styles of people who use substances (Sorsdahl, Stein, Carrara, & Myers, 2014), in-depth interviews with health care workers to assess what would be feasible and acceptable to implement in their context (Sorsdahl et al., 2013), expert interviews with stakeholders, and a pilot-test of the intervention with patients to examine initial outcomes and responses to the intervention (Sorsdahl, Myers, Ward et al., 2014). We then adapted the SBIRT package prior to testing it in a small randomized controlled trial.

In this trial, the process of care was as follows: Community health workers (CHWs) especially employed to provide this new service approached patients for screening after they had been triaged for illness or injury severity and while they were waiting for a consultation with the attending doctor. Patients were eligible

if they were ≥ 18 years of age and at moderate to high risk for substance use problems, as measured by the ASSIST (WHO ASSIST Working Group, 2002). Exclusion criteria included severely altered mental status, physical inability to participate due to severe illness, and lack of any detailed locator information. Patients were screened and recruited at varying times during the day and during at least one 12-hour night shift on the weekend (7pm–7am) in order to reflect the busiest periods of the selected departments. Patients who consented to participate in the program were asked to complete an interviewer-administered baseline questionnaire that included questions on substance use, injury, and other health risks that took approximately 45 minutes to complete. After this assessment, participants were randomly assigned to one of three conditions.

The three conditions comprised one session of MI, five sessions of a blended MI-problem-solving therapy (PST) intervention, and an information-only control arm. The four-session intervention focused on building motivation to change and developing and practicing skills to address life problems. These sessions were spaced approximately one week apart and were between 45 and 60 minutes in duration. During the sessions, the counsellor and the participant collaborated to identify problems occurring in the participant's life, and focused on exploring one or more of these problems while the counsellor taught the participant a structured PST approach to addressing problems (Sorsdahl, Myers, Ward et al., 2014). The baseline assessment was re-administered 3 months after the initial assessment.

Antenatal Personal Support Project

The goal of this project was to help improve maternal and infant health outcomes by integrating SBIRT for common mental disorders into free midwife-led antenatal services. This pilot program was offered at a maternal obstetric unit (MOU) located within a large impoverished community in Cape Town. As part of their initial first contact with antenatal care, all pregnant women attending the MOU were screened for depression by the nurse responsible for recording their medical history. Women who scored at risk for depression were referred to psychiatric services for further assessment and care. Following this initial screening, women were referred to HIV counsellors based at the MOU who

were responsible for conducting HIV testing and counseling (HTC). These CHWs were trained to screen all pregnant women for alcohol, tobacco, and other drug (ATOD) use using the ASSIST (WHO ASSIST Working Group, 2002). If the women screened positive for any alcohol, tobacco, or drug use, the CHWs provided them with a BI.

This BI is based on the “5As” Smoking Cessation Clinical Practice Guideline, an intervention specifically adapted for use with South African pregnant women (Everett-Murphy et al., 2010). The 5As for tobacco cessation consists of the provision of a 10–15 minute counseling session by a trained provider comprised five steps: 1) asking the patient about their tobacco use; 2) advising every tobacco user to quit; 3) assessing the patient’s readiness to change; 4) assisting willing patients to quit, and 5) arranging a follow-up visit to assess the patient’s success in quitting. It also includes the provision of pregnancy-specific self-help education materials. Not only is the 5As intervention regarded as the best practice for brief tobacco cessation counseling, it has also been shown to be effective in the South African context (Everett-Murphy et al., 2010). This intervention was adapted to address alcohol and other drug use in addition to tobacco use. Following the BI, patients who screened at high risk for substance-related health problems and were likely to have a substance use disorder were referred for further care to specialist substance abuse treatment centers.

We evaluated the feasibility, acceptability, and initial outcomes of this program by extracting data from clinical records, assessing patient’s responses to the intervention, and exploring providers’ views of the feasibility and acceptability of the program.

Results

The Jooste Day Hospital Project

Universal Screening was not Implemented; rather, there was “Case-finding” by Nurses: Overall, 127 patients using substances received an intervention from the GF Jooste Hospital. Among these participants, the most frequently reported primary substance of abuse was methamphetamine (30%), followed by alcohol (26%) and cannabis (26%). Poly-substance use was reported by 44% of participants.

Response to the Intervention: Of these 127 patients, 68% received screening, a BI and referral for specialist substance abuse treatment, while 32% received screening and a BI without referral for further treatment. Overall substance use involvement scores decreased significantly following the intervention (pre-intervention: $M = 37.60, SD = 8.43$; post-intervention: $M = 17.02, SD = 17.19, t(72) = 10.89, p < 0.001$). Reductions in the use of all classes of drugs were found.

Referral to Care was Poor: Uptake of referrals to specialized treatment was poor, with less than 50% of those who were referred utilizing these services. Patients reported attitudinal and structural barriers as reasons for not attending further care. Of those that did attend treatment services, only 55% felt that the facility met their needs.

Substance Use and Trauma Intervention (Project STRIVE)

Feasibility of Universal Screening: In the implementation period, we screened more than 2700 patients, of whom 19% met inclusion criteria. Of these, 74% were willing to participate in the program, indicating high levels of acceptability to patients. Providers, however, suggested that approaching intoxicated, injured, and aggressive patients was sometimes challenging and reported using active case detection methods rather than universal screening.

Feasibility and Acceptability of Intervention: Only 58% of patients completed all five sessions. Patient feedback revealed that three to four sessions was the preferred duration of the intervention. Patients found the intervention materials and content highly acceptable. Providers thought that a CHW rather than a nurse-delivered intervention was more feasible to implement in a busy emergency department setting. They noted that for the program to be implemented properly, they would require additional CHWs dedicated to the delivery of this program (Myers, Stein, Mtukushe, & Sorsdahl, 2012; Sorsdahl, Myers, Ward et al., 2014).

Initial Outcomes of Project STRIVE: There was a significant effect of intervention type on substance use outcomes, with ASSIST scores significantly lower in the MI-PST condition relative to the combined MI and CG control groups (adjusted mean difference of $-1.70, 95\% CI: -3.36$ to -0.08) at 3-month

follow-up. There were no significant differences in substance use outcomes among participants randomized to the MI condition and those allocated to the CG. In addition, there was a significant effect of intervention type on depression outcomes, as measured by the Centre for Epidemiological Studies Depression (CES-D) scale. Participants in the MI-PST group reported less depressed mood at 3 months compared to those in the combined MI and CG conditions (adjusted mean difference of -3.33, 95% CI: -6.24 to -0.42). Furthermore, a linked cost-effectiveness analysis suggested that the targeting of MI-PST to high-need services would be the most efficient use of limited resources.

Antenatal Personal Support Project

Feasibility of Conducting Universal Screening for Substance Use: Over a period of 6 months (August to January 2013), a total of 3407 women presented at the MOU for their first antenatal visit. Of these, only 1468 (43%) women were screened for maternal mental disorders. In addition, we found lower than expected rates of ATOD use disclosure for this population. Of the 1468 women who were screened, 302 (21.4%) met criteria for depression, 388 (26.4%) disclosed smoking tobacco, and 29 (2%) disclosed alcohol and other drug use. Of the 302 who met criteria for depression, only 15 (5%) were referred for further treatment.

Women's Preliminary Responses to the Intervention: Results from the three-month evaluation indicated that participants significantly decreased their tobacco use following receipt of the 5As intervention and psycho-educational materials (pre-intervention mean 18.16 ± 2.5 , post-intervention mean 4.24 ± 1.75 , $t(73) = 3.45$, $p < 0.001$). Of the 29 women who disclosed alcohol and drug use, 15 completed the follow-up interview. Among these women, there was no significant reduction in alcohol and drug use following receipt of the intervention.

Health Care Workers' Perceptions of Barriers to Delivering SBIRT: All of the healthcare workers interviewed were in favor of continuing this pilot SBIRT program; however, they did identify areas of concern. First, they reported an increase in their workloads following the implementation of SBIRT into the

antenatal services due to additional responsibilities associated with screening, providing the BI, and/or referral to specialized services. They also reported a lack of consultation to inform them about their expanded responsibilities under this new program. Third, they reported that women were not willing to disclose their ATOD use, and this hindered the uptake of the program. They also noted that SBIRT was challenging to implement without a sustainable referral pathway in place. According to respondents, the main reason for this was a lack of specialist psychiatric services in the area, including within nongovernment organizations (NGOs) serving the local community.

Discussion

South Africa is overwhelmed by a high prevalence of untreated substance use disorders coupled with limited availability of treatment facilities to reduce the burden of these disorders. SBIRT in primary health care settings has been proposed as a strategy for expanding access to care and improving the early detection of people with potential substance use disorders. This paper presents an overview of three pilot studies that attempt to introduce SBIRT into primary care settings within a task-shifting framework. All of these studies demonstrated that when using evidence-based interventions that are implemented with fidelity, SBIRT approaches can lead to clinically significant reductions in substance use involvement and also have secondary benefits in terms of improving other indicators of poor mental health (for example, depression) that are often associated with greater substance use involvement. This is among the first pieces of evidence for the effectiveness of SBIRT for substance use from low- and middle-income countries. These findings hold even when the delivery of these interventions is task-shifted away from mental health specialists to nurses without mental health training (tier 2) and even community health workers (tier 3). This suggests that SBIRT can be effectively implemented and has the potential to have a positive effect on substance use outcomes in low-resourced health care settings, with relatively little additional investment in costly human resources.

Apart from emerging evidence of the effectiveness of these approaches in a low- and middle-income country setting, these three studies also demonstrate

the acceptability of introducing SBIRT within a task-shifting framework to both patients and providers. In all studies, providers reported that they thought the SBIRT model was important and added value to their clinical practice. Patients seemed willing to accept the program, as indicated by the high numbers of patients who were potentially eligible for participation in the program who actually enrolled in the service and who demonstrated relatively high rates of retention in the services (even for the longest intervention). Together, these findings demonstrate that introducing SBIRT into primary health care settings may provide an opportunity to expand access to care and reduce the negative health outcomes associated with continued substance use involvement for a cohort of patients who are unlikely to access stand-alone substance use services.

However, some of the lessons we learned through implementing these programs require careful consideration before rolling out SBIRT more widely in primary care settings. First, in all three pilot programs, health workers failed to conduct universal screenings of patients for substance use disorders. We found that nurses were too busy with routine care to universally screen all patients presenting for services. Instead, they conducted their own case-finding in which they only screened patients when they had a high degree of clinical suspicion that the person may be using substances. This finding is not altogether surprising because other studies in this low-resourced and over-subscribed health care system have also reported that health care workers tend to case-find rather than universally screen patients for mental health difficulties (Kagee, Tsai, Lund, & Tomlinson, 2013). Future iterations of SBIRT in primary care settings may wish to consider two alternative approaches to universal screening. In populations in which any substance use is considered dangerous and necessitates intervention (such as pregnant women or patients with traumatic injuries), health service planners may want to consider using technology-based screening tools such as quick biological screens or self-administered computerized assessments performed at the point of care to ensure that universal screening occurs and does not rely on busy clinic staff to implement it. In populations in which any substance use is highly stigmatized, this might also improve substance use disclosure rates. Second, while SBIRT for substance use disorders has been advocated for all chronic disease patients (e.g., for HIV, TB, hypertension) in resource-rich settings, it is probably not feasible to conduct SBIRT for all chronic disease patients in low-resourced settings due to the additional staffing resources and time needed. It may be a more efficient

use of scarce health resources in chronic disease care services to screen patients for substance use involvement only if they are not adhering optimally to their health regimen or have unexplained poor responses to treatment.

The second lesson we learned relates to the continuum of care. In all three pilot programs, the “referral to treatment” arm of the SBIRT program was problematic. In some instances, health workers did not know or have any local resources to which they could refer patients for further specialist care. In other instances, referral uptake was limited due to structural barriers to accessing care. More concerning were reports among the small proportion of patients who did take up their referrals that the care they received was not completely to their liking. Together, all of these findings highlight the need to strengthen referral to treatment. It is probably not feasible to create a whole set of new resources to which patients could be referred for care. To address this barrier, we have proposed utilizing BIs that are slightly longer than the one-session BI that is commonly implemented in primary care settings. In our earlier feasibility work, we found that patients actually wanted more counseling sessions than we provided and said that they would be willing to attend three to four intervention sessions (Myers, Stein et al., 2012). While this is still within the definition of a BI, it is more than what is traditionally provided and in psychotherapeutic terms can be defined as a short treatment. This would partly bridge the gap between BI and referral to more specialized care. These BIs may also need to be supplemented with case management strategies to help effectively link patients to more specialized care when indicated. Case management strategies (Rapp et al., 2008) can be an effective tool for helping overcome some of the structural barriers to accessing specialist care that many patients with substance use disorders experience. Finally, to successfully link patients to specialist treatment, more work needs to be done to ensure that available services are a good fit for this population. Several studies have reported patient dissatisfaction with substance use treatment services in South Africa, highlighting the need to work with organizations providing these services to improve the quality of care they provide and ensure that it meets the needs of the patients they serve (Myers et al., 2009; Myers, Petersen et al., 2012).

We also identified several gaps in our knowledge of how to integrate SBIRT into primary care settings that need to be addressed prior to implementing this program more broadly in South African health care services. First, while we

have demonstrated positive outcomes for these SBIRT programs, we need more information on the durability of these outcomes and whether patients were able to maintain the reductions to their substance use over at least a 12-month follow-up period. We also need more evidence of the cost-effectiveness of these approaches so that we can build a business case to demonstrate why the health care system should implement this new program. Furthermore, we need more certainty about whether the health care system should adopt a horizontally integrated (HI) approach to delivering substance use services within primary health care services or a vertically integrated (VI) service. In a HI approach, level 2 staff (such as nurses) without specialty mental health training would be designated to provide additional mental health care and support to patients *in addition* to their usual health care duties. In contrast, in a VI model wherein task-shifting is adopted, mental health care would be delivered by level 3 staff (such as CHWs) who are part of the collaborative care team but whose *sole responsibility* is the provision of SBIRT for mental disorders (Briggs & Garner, 2006; Oliviera-Cruz, Kurowski, & Mills, 2003). While the merits of both models of integrated care have been outlined for other types of health services (Briggs & Garner, 2006; Oliviera-Cruz et al., 2003), there have been no studies comparing the relative effectiveness of VI or HI models on substance use outcomes. On one hand, level 2 cadres in a VI approach would have more health training and exposure to mental health issues than level 3 staff, and these differences in training could impact on mental health outcomes. In contrast, nurses in a HI approach would have many other responsibilities that may limit their ability to practice and develop substance use intervention skills and the amount of time they have to provide SBIRT, which could impact on the effectiveness of an HI approach. More research on the relative impact and cost-effectiveness of each model of integrated service delivery is needed so that these questions can be answered.

In conclusion, we have shown that SBIRT is a promising approach to reducing substance use among patients presenting for primary health care services in a low-resourced setting; however, more work needs to be done to improve screening detection rates and referral to care. In addition, evidence demonstrating whether VI or HI models of service integration are more effective and cost-effective for improving substance use outcomes is needed before the health system can proceed with integrating this service package in primary health care.

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