Feasibility of Alcohol Screening and Brief Intervention in a South African Trauma Centre: Views of Health Care Providers

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Abstract

In response to alcohol-related injuries, emergency departments internationally have implemented screening and brief intervention programmes for alcohol misuse. Despite high levels of alcohol-related injury in South Africa, no such programmes exist in any trauma centres. Views of medical staff members towards screening and brief intervention programmes affect the success of its implementation. This study investigated the opinions of staff of a trauma centre in Cape Town towards these programmes. Identified potential barriers to implementation included time limitations, injury treatment as priority, reliance on patient honesty, patient confidentiality, patient reactions, a desire to avoid patients' personal issues, language barriers, and scepticism regarding the effectiveness of screening and brief intervention programmes, with the central barrier being inadequate funding. Effective implementation would require training in understanding the efficacy of screening and brief intervention programmes, and the implementation of a standard protocol.

Keywords: Screening and brief interventions, alcohol misuse, alcohol-related injury, trauma centre, implementation framework, health care providers

Alcohol abuse is the third leading global cause of death and disability, resulting in approximately 1.8 million deaths per year (WHO, 2011). Reviews of emergency departments around the world report a strong link between alcohol consumption and injuries (Borges et al., 2006). In South Africa, adult per capita consumption of absolute alcohol is approximately 16.6 litres per year (Schneider, Norman, Parry, Bradshaw & Plüddeman, 2007), the highest rate of alcohol consumption in the world (Rehm et al., 2003). In Cape Town, more than a third of the patients seen at trauma units in 2001 had blood alcohol levels above the legal driving limit (Plüddeman, Parry, Donson & Sakhai, 2004). Groote Schuur is the largest tertiary hospital in the Western Cape, and treats Cape Town's most severe and complex injuries (Department of Health, 2010). In 2000, 60% of patients seen at Groote Schuur Hospital's trauma centre were intoxicated with alcohol at the time of their presentation (Donson, Peden, Nose, & Maziko, 2000).

Global reviews of emergency departments have found that programmes of screening for substance misuse, followed by brief interventions for those patients identified as misusing substances, are highly effective in reducing patients' overall levels of alcohol consumption and associated injury recidivism (D'Onofrio & Degutis, 2004; Moyer, Finney, Swearingen & Vergun, 2002).

Previous studies have investigated the views of health care providers regarding their views of the implementation of screening and brief intervention programmes (Weiland, Phillips, Dent, & Lee, 2008). Only one such study has been conducted in South Africa, and focused on the views of nurses only, in a primary care setting (Peltzer, Seoka, Babor, & Tlaluka, 2004).

As a response to interest in implementing a screening and brief intervention programme for patients presenting to Groote Schuur trauma centre, this project investigated the attitudes of doctors, nurses and a social worker towards such an implementation, focusing on the barriers that may influence the implementation. An identification of these barriers allows for appropriate solutions to the barriers to be found, ultimately resulting in the simplest possible implementation of an effective screening and brief intervention programme at Groote Schuur trauma centre.

Williams et al. (2011) used a broad conceptual model of implementation, the Consolidated Framework for Implementation Research (CFIR), to review studies of alcohol screening and brief implementation, identifying the specific domains present at those facilities with high levels of screening and/or brief interventions. This model, developed based on previous reviews of implementation research literature, is currently the only known

model of its kind. The authors describe the CFIR as "useful as a roadmap" in the development phases of an implementation program for screening and brief interventions (Williams et al., 2011, p.7), and so is highly applicable to the potential implementation of a screening and brief intervention programme at Groote Schuur trauma centre. This study will therefore rely on the CFIR as a framework for the identification of supportive elements of a screening and brief intervention programme implementation.

Alcohol Misuse and Alcohol-Related Injuries in South Africa

According to the World Health Organisation, South Africa rates 47th highest out of 189 countries in terms of alcohol consumption, consuming 7.81 litres of absolute alcohol per adult per year (WHO, 2004). However, the real figure is thought to be closer to 16.6 litres, due to the high estimated levels of unrecorded and illegal drinking, such as the home-brewing of beer, and the high numbers of South Africans who abstain from alcohol use (Freeman & Parry, 2006; Schneider et al., 2007). According to Rehm et al. (2003), this is the highest rate of alcohol consumption in the world. In the Western Cape specifically, alcohol remains the most frequently abused substance (Myers, Louw, & Fakier, 2007), with the highest prevalence rates for lifetime alcohol use (39%-64%) and risky drinking (9%-34%) compared to other provinces (Harker et al., 2008).

There are serious consequences of heavy alcohol use. A meta-analysis of emergency departments across 10 countries found a significant link for both quantity and frequency of drinking with alcohol-related injury (Borges et al., 2006). Globally, alcohol is implicated in 20-50% of all injuries (WHO, 2007). In South Africa, 20.2% of unintentional and 40.9% of intentional injuries are attributable to alcohol (Schneider et al., 2007), compared to global figures of 28% and 12% respectively (Rehm et al., 2004).

Specifically, the city of Cape Town had the highest proportion of alcohol-positive trauma patients who sustained transport injuries in South Africa in 2001 (46%), compared to Port Elizabeth (41%) and Durban (16%; Plüddeman et al., 2004). The proportion of alcohol-positive deaths due to transport injuries was also highest in Cape Town (59%) in 2004, compared to Durban (49%) and Johannesburg (48 %; Matzopoulos & Seedat, 2005).

Illegal drug abuse (i.e. not including alcohol) is also an issue that affects South Africa; approximately 15% of the South African population use illegal drugs regularly, twice the global norm (INCB, 2009). More than 40% of trauma patients presenting to trauma units in Cape Town in 2001 tested positive for an illicit drug (Parry, 2005). There is a lack of research for the benefits of brief interventions for illegal drugs, as well as for the link between illegal drug use and injury (Charbonney, McFarlan, Haas, Gentilello & Ahmed., 2010).

Screening and Brief Interventions for Reducing Alcohol Misuse and Alcohol-Related Injuries.

As a response to these high levels of alcohol abuse and alcohol-related injury, many emergency departments around the world, specifically in the US and the UK, screen patients for alcohol use. Screening allows health care practitioners to provide interventions for those patients identified as misusing alcohol, with the aim of reducing patients' levels of alcohol consumption and associated injury recidivism (Coulton et al., 2009).

There is a wide international evidence base for the high levels of success associated with the provision of screening and brief interventions for patients who present at emergency departments with alcohol-related injuries (D'Onofrio & Degutis, 2004; Moyer et al., 2002). Programmes of screening and brief intervention can be highly effective in reducing patients' overall alcohol consumption (including the number of binge drinking episodes), as well as long-term injury recidivism (Charbonney et al., 2010). For example, a global review of emergency departments found that a simple screening procedure, followed by a 5-minute intervention, delivered by a physician or nurse, reduced alcohol consumption in over 80% of cases (D'Onofrio & Degutus, 2004). Based on this evidence, the provision of screening and brief interventions became mandatory for all level-one trauma centres in the US in 2006 (Cherpitel, Moskalewicz, Swiatkiewicz, Ye & Bond, 2009).

Trauma centres are the ideal setting for screening and brief intervention to occur, as they are able to take advantage of the "teachable moment" (Charbonney et al., 2010, p. 8) or window of opportunity generated by the injury and the thus obvious deleterious effects of substance misuse (Cherpitel, 2006).

Despite the evidence for the efficacy of screening and brief interventions, screening and brief interventions are not routinely carried out. Only 25% of American physicians use formal screening questionnaires with some or all of their patients (Schermer et al., 2003), and whilst no formal research into South African settings has been carried out, it appears that no facilities in South Africa carry out any sort of formal screening or brief interventions for substance abuse (A. Nicol, personal communication, 16 March, 2011).

The Efficacy and Feasibility of Screening Tools and Brief Intervention Procedures

Screening Tools. A number of questionnaire-based tools have been developed for the screening of patients for alcohol disorders (Smith, Herrmann, & Bartlett, 2011). These tools, which rely on patient self-report to assess alcohol consumption levels, are all recognised for their generally high levels of efficacy and feasibility, as well as in discriminating those patients with mild to moderate drinking problems from those with severe drinking problems

(Brown, Hermann, Jones, & Wu, 2004; Cherpitel, 2005). Such tools include the CAGE (Cut down, Annoyed, Guilt, Eye-opener – an acronym for the four questions asked), the AUDIT (Alcohol Use Disorders Identification Test), and the BMAST (Brief Michigan Alcoholism Screening Test) (Smith et al., 2011). The AUDIT and BMAST are generally disregarded in trauma centre settings due to the length of time necessary for their administration (Cherpitel & Soderstrom, 2000). There are currently no such screening tools for other substances, except the ASSIST (Alcohol, Smoking and Substance Involvement Screening Test), developed by the WHO in 2002 (WHO ASSIST Working Group, 2002).

Relevant measures of validity pertaining to these tools include sensitivity (the ability of the instrument to correctly identify those with the condition) and specificity (the ability of the instrument to correctly identify those without the condition). Sensitivity is of primary concern—it is important to identify all those who may be positive for an alcohol use disorder— but specificity must also be at a reasonably high level, so as to avoid false diagnosis (Cherpitel & Soderstrom, 2000).

The CAGE is specifically recognised for its high levels of sensitivity and specificity, and its brevity is favoured in trauma centre settings (Cherpitel & Soderstrom, 2000). However, the CAGE has poor specificity for discriminating current alcohol use disorders from past disorders (Cherpitel, 2005).

Even though self-report relies on patients' honesty to ascertain their levels of alcohol consumption, findings show that the majority of patients are honest about regarding their alcohol use (Sommers, Dyehouse, Howe, Wekselman & Fleming, 2002). Questionnaire-based screening instruments are thus effective in trauma centre settings for identifying patients with alcohol use disorders, due to their brevity and simplicity (Cherpitel & Soderstrom, 2000).

Another common alcohol screening method is the use of blood alcohol concentration level tests. Many doctors believe this method to be accurate and time-efficient (Schermer et al., 2003). However, not only are blood alcohol concentration tests mostly inaccurate (Salaspuro, 1994), they can also only measure patients' recent alcohol consumption, and cannot detect alcohol use disorders or dependence. Furthermore alcohol concentration levels can only be measured for up to 6 hours after consumption (Cherpitel & Soderstrom, 2000).

Another common method of screening is the alcometer, which analyses a patient's breath for level of alcohol use (Seppa, Lahtinen, Antila & Aalto, 2004). Although it has been described as easy, non-invasive and rapid to perform (Walsh & McLeod, 1983), its specificity and sensitivity have been questioned (Seppa et al., 2004). Just as with blood alcohol

concentration level tests, alcometers can also only measure recent alcohol consumption, and not regular heavy alcohol use (Seppa et al., 2004). As a result, trauma staff members generally favour blood alcohol concentration tests over alcometers (Cherpitel & Soderstrom, 2000).

Cherpitel and Soderstrom (2000) therefore recommend the combined use of blood alcohol concentration testing (for the screening of recent alcohol consumption) and questionnaires (for the screening of alcohol use disorders) for the most accurate screening of trauma patients.

Brief Intervention Procedures. A review of studies confirmed the effectiveness of brief interventions for reducing alcohol consumption and injury recidivism levels among emergency department patients (D'Onofrio & Degutis, 2004). Based on the Institute of Medicine guidelines (1990), a brief intervention should be provided to all patients identified as having mild to moderate drinking problems, with the goal of reducing these patients' levels of consumption and alcohol-related injury. Those with more severe drinking problems or alcohol dependence should be referred for intensive, specialised treatment (Cherpitel & Soderstrom, 2000).

Interventions for alcohol misuse are usually carried out by any available member of the medical care team, from physicians and nurses to substance abuse counsellors or social workers (Charbonney et al., 2010). One feasibility study of US trauma centres found that even in the busiest trauma centres, one half-time employee was able to meet all screening and brief intervention needs (Schermer, 2005).

Brief interventions are also cost-effective, especially when comparing the cost of the intervention to the cost incurred from multiple admissions to the emergency department for treatment (Chezem, 2004; Crawford et al., 2004).

The Views of Trauma Staff Members regarding the Implementation and Execution of Screening and Brief Intervention Programmes

A number of international studies have explored how health care practitioners, particularly nurses, view the barriers and promoting factors influencing the implementation and execution of screening and brief intervention programmes (Aalto, Pekuri, & Seppä, 2001; Groves et al., 2010; Peltzer et al., 2004; Weiland et al., 2008). The identification of these barriers and promoting factors allows for the potential implementation of such programmes to be as simple and efficacious as possible (Desy & Perhats, 2000). The CFIR places particular emphasis on the targeting of anticipated barriers to implementation, describing it as a crucial first step in programme implementation (Williams et al., 2011).

Barriers to the Implementation and Execution of Screening and Brief Intervention Programmes

The most widely cited barriers, according to health care practitioners all over the world, refer to time limitations. Trauma centres are chaotic and time-crucial environments (Groves et al, 2010; Weiland et al., 2008) and physicians and nurses have constant pressures on their time (Cherpitel, 2006; D'Onofrio & Degutis, 2004; Holland, Pringle & Barbetti, 2009). Trauma centre staff members therefore report that it is important that any screening tools be simple to administer and score (Coulton et al., 2009). Linked to this limit on time is an apprehension concerning any extra paperwork involved (Groves et al., 2010).

Some trauma staff members believe that their priority is to treat patients' injuries, not facilitate screening or interventions for alcohol (Guly, 2004). At an Australian emergency department, staff members reported concerns over language barriers, and patients being too injured to carry out screening (Weiland et al., 2008). In another study, staff members expressed concern regarding adverse patient reactions to being screened, such as aggression or intimidation (Groves et al., 2010).

Despite the number of studies establishing that self-report is consistently better than physiological measures (Brown et al., 2004), nurses in some studies raised concerns about the reliance on patients' honesty (Groves et al., 2010; Weiland et al., 2008). Some nurses also reported hesitation and a lack of confidence in providing screening or brief intervention procedures as a result of an inadequate knowledge base in addiction and/ or screening tools (Aalto et al., 2001; Cherpitel, 2006; Holland et al., 2009; Weiland et al., 2008).

Other studies reported scepticism among staff members regarding the effectiveness of screening and brief interventions in making any difference to patients' drinking habits (Weiland et al., 2008). Many studies thus report that it is crucial to the success of the screening and brief intervention programme that physicians and nurses first be convinced of the programme's effectiveness (D'Onofrio & Degutis, 2004; Holland et al., 2009).

In the US, the alcohol exclusion law meant that insurance companies could deny financial reimbursement for patients who suffered injuries whilst under the influence of alcohol (Grill, 2010). As a result, many trauma staff members were reluctant to screen patients for alcohol use, citing concerns over patient confidentiality (Chezem, 2004; D'Onofrio & Degutis, 2004). Luckily, alcohol exclusion laws in the US are in the process of being repealed, as the efficacy of screening for alcohol use is realised (Grill, 2010).

In a South African study (Peltzer et al., 2004), nurses at 18 rural primary care clinics reported a number of similar barriers, including a lack of faculty role models, inadequate

training, and role ambiguity regarding who is responsible for the screening and interventions. These nurses also mentioned difficulties with patients who were not interested or refused the intervention, as well as a shortage of staff, work overload, and a lack of adequate services for treatment of alcoholic patients.

The CFIR specifically mentions staff members' perceived complexity of the programme and stakeholders' relative priority of the implementation of a screening and brief intervention programme as crucial barriers to be considered in terms of the implementation of a screening and brief intervention programme (Williams et al., 2011).

Factors Promoting the Implementation and Execution of Screening and Brief Intervention Programmes

Positive reactions from nurses included sympathy for alcoholic patients, and a commitment to patients' care, regardless of circumstances (Groves et al., 2010). Many nurses thought screening and brief intervention programmes useful in identifying individuals who misuse alcohol, especially those who would not otherwise be detected (Groves et al., 2010). The majority of nurses accepted responsibility for alcohol screening, and none rejected it as being part of their role (Aalto et al., 2001; Groves et al., 2010).

Nurses identified factors that aided the process of screening, such as explaining the reasons for screening to patients, performing the screening when the ward is quiet, doing the screening as part of the admission process and having the support of pamphlets or documentation (Groves et al., 2010). The nurses who had received training felt increased confidence in their ability to administer the screening or interventions (Groves et al., 2010; Holland et al., 2009).

The nurses in the South African study (Peltzer et al., 2004) also mentioned a number of supportive elements, including cooperation from colleagues, support from facilitators and supervisors, and the provision of training.

The Effective Implementation of Screening and Brief Intervention Programmes

Following the identification of the barriers and promoting factors that influence the implementation and execution of screening and brief intervention programmes, the first step in the actual implementation is usually the provision of training for trauma staff members in the necessary procedures (Desy & Perhats, 2008; Seale, Shellenberger, Boltri, Okosun, & Barton, 2005). The CFIR does specifically emphasise the provision of training, particularly for the provision of new knowledge and education about screening and brief intervention programmes and their importance, as well as in boosting providers' confidence, and in altering staff members' perceptions regarding the complexity and relative priority of the

programme (Williams et al., 2011). In short, the provision of training is key to the overall efficacy of the entire programme.

Nurses who receive training demonstrate raised expectations about the efficacy and value of screening and brief interventions to make a positive difference in patients' levels of alcohol consumption (Aalto et al., 2001; Peltzer et al., 2004; Peltzer, Matseke, Azwihangwisi, & Babor, 2008). Trained medical staff members are thus more likely and more willing to perform screening and brief interventions with patients (Seale et al., 2005). The CFIR specifically mentions the value placed on preventing unhealthy alcohol use by the medical personnel and the systems in place that encourage or discourage the medical personnel to perform screening and brief intervention procedures (Williams et al., 2011). These are both aspects that can be addressed within training sessions.

Booster or follow-up training sessions are strongly recommended (within the CFIR, and in other literature: Seale et al., 2005) for resolving any difficulties encountered by staff members, and for the constant monitoring and evaluation of the efficacy of the programme (Williams et al., 2011). These booster training sessions allow for the tailoring and refinement of the delivery of the programme's elements, so as to reach the highest possible levels of efficacy; a point reinforced by the CFIR (Williams et al., 2011).

Studies also encourage the introduction of an incentive programme, financial or otherwise, following the implementation of the programme, to motivate staff members to provide screening and brief interventions when necessary (Peltzer et al., 2004; Weiland et al., 2008).

The introduction of this programme as standard protocol is also key; this means that the programme will be incorporated into the routine operations of the trauma centre. In this way, it will be compulsory, and expected, for staff to provide screening and brief interventions with every patient (Schermer, 2005).

Aims

Up to this point, I have relied largely on international literature, the reasons for this being the dearth of South African literature in this area. However, it should be clear by this stage that this study holds particular importance in a South African context. The particularly high rates of alcohol consumption and alcohol-related injury in South Africa mean that not only are South African trauma centres more pressurised than those in international literature, but also that South African patients are probably more resistant to change from a simple intervention. The South African health system is also not as well funded as of the high income countries where much of this international literature is sourced. Therefore, any

intervention for alcohol misuse and alcohol-related injury that is implemented within this South African context needs to be as efficacious as possible.

This research project therefore aims to investigate the views of staff members regarding the possible implementation of an *effective* programme of screening and brief interventions at Groote Schuur trauma centre. If such a programme were to be successfully implemented at Groote Schuur trauma centre, it could mean the reduction in levels of alcohol-related injury among the population of Cape Town, the implications of which could only be positive.

Method

Participants

16 participants took part in the study, all of whom are staff members within the Groote Schuur trauma centre. Participants comprised of 8 doctors (4 surgical registrars, 2 medical officers and 2 trauma surgeons, the latter being the head and deputy head of the trauma centre), 7 nurses (3 registered nurses, 2 enrolled nurses, 1 staff nurse and 1 student nurse) and a social worker.

Due to the time-crucial environment of the trauma centre, selection of these particular participants was based on whoever was able to avail themselves to be interviewed at the relevant time. Participants were not selected on any demographic characteristics other than being staff within the trauma centre. I also aimed to interview at least two staff members from each of the relevant professional strata.

The reason for the decision to recruit a combination of medical personnel from each of the relevant professional strata is that this is a gap within the literature; most studies focus on nurses only (Weiland et al., 2008). This also allowed for a better understanding of the best method of implementation, according to all trauma staff members, across all levels of seniority. Furthermore, the implementation of this programme would require a shift in the daily operations of the trauma centre, so I needed to scope whether every level of staff member would endorse, or at least tolerate, the implementation of such a programme.

Data Collection

Data collection was carried out using semi-structured interviews. Semi-structured interviews hold benefit in that their structured questions allowed me, as the researcher, to guide the conversation and find out necessary information, whilst the open-ended questions allowed participants to add anything they felt necessary (Parker, 2005). Open-ended questions also allowed the "conversation" to follow a pathway directed by the participant, thus emphasising my passive role as the researcher in the data collection process (Willig, 2001).

I constructed my semi-structured interview questions with the goal of answering the research questions, as well as addressing relevant findings from previous literature (see appendix A). The questions were adapted from a template originally used to investigate alcohol misuse risk screening in primary and mobile clinics in California (Mertens, Weisner, & Sterling, 2001).

All questions followed general themes. For example, participants were asked about their views regarding current alcohol screening and intervention procedures in place so as to

gauge their general attitudes regarding these procedures, with the idea that current attitudes would inform future actions. This logic followed for questions asking participants about general screening procedures; any factors influencing these general screening procedures would be the same factors influencing future alcohol screening procedures. The questions asking participants for their views regarding the future possible introduction of a programme of screening and brief interventions informed possible future barriers, and allowed for every staff member, from all professional strata, to provide input regarding the best method of implementation.

Even though some of the questions may seem close-ended in nature, for example questions addressing prevalence of alcohol and other drug use, I was in fact asking for participants' opinions on these prevalence rates, and why they believe the figures to be so, meaning that every question was in fact open-ended in nature. Although I generally asked the questions in sequence, I probed where I felt necessary, and allowed participants to talk about anything they felt relevant, even if I felt their answers were unrelated to the research. In this way, the questions were simply a guiding framework for the conversations that I allowed to happen.

Procedure

Weekday mornings were identified as the appropriate time in which to conduct interviews, as this is when staff are least busy with patients (A. Nicol, personal communication, 16 March 2011). I sought out available staff members with the assistance of the trauma centre receptionist, and then asked them if they could spare half an hour of their time for an interview. The interviews took place in an empty, quiet room within the Groote Schuur trauma centre. After participants signed informed consent forms, I explained the concept of brief screening and interventions for alcohol misuse, and then proceeded with the interview questions. Most interviews lasted for approximately forty minutes. The interviews were recorded with a data voice recorder, and recordings were later transcribed in order for the interview content to be analysed as text.

This study followed the ethical guidelines for research with human subjects as outlined by the University of Cape Town's Faculty of Humanities (UCT Faculty of Humanities, 2001) as well as the Professional Board for Psychology under the Health Professions Council of South Africa (HPCSA, 2002). Participants signed informed consent forms (see appendix B), informing them of the confidential, voluntary and anonymous nature of the interviews. Participants received no financial compensation for their participation. Data recordings were deleted after transcription, and participants' names were replaced with labels

(e.g. surgical registrars 1-4, or registered nurses 1-3) in order to preserve confidentiality. Transcripts were also stored on a password-protected computer.

Data Analysis

The transcribed data was analysed using thematic analysis. Thematic analysis identifies common themes within the data, and allows for these themes to be grouped in a clear and organised manner (Aronson, 1994). The grouping of data into themes assists in the interpretation of the research topic, and allows data to be described in rich and complex detail (Braun & Clarke, 2006).

I followed the six steps of data analysis as outlined by Braun and Clarke (2006). These steps do not follow in a linear fashion, but instead are recursive, where movement is back and forth between the steps, as necessary. The six steps included (a) familiarising myself with my data (including transcribing and reading), (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report.

I first looked for themes identified within previous literature, such as "lack of time" or "issues of training," but soon found that a number of unexpected themes also emerged, such as "avoiding personal issues of patients." The emergence of these unexpected themes emphasised my passive role as the researcher, and elevated the importance of the research above my role of the researcher who is identifying and interpreting the themes (Braun & Clarke, 2006).

Reflexivity

Reflexivity implies an awareness of my role as the researcher within the research process (Willig, 2001). Therefore, I understand that my own subjectivity, and the ways in which I have understood and interpreted the data, has played a role in the analysis and content of this research (Camic, Rhodes, & Yardley, 2003).

For example, I feel very strongly about issues of alcohol misuse and alcohol-related injury, and tend to view any problem with the goal of solving it. I believe this personal interest in the research area influenced the content of this study in that I firmly believed in, and thus possibly overplayed, the efficacy of screening and brief interventions in reducing levels of alcohol consumption and alcohol-related injury recidivism, even when some research showed ineffective results.

I am also aware that I am a young, white, English-speaking female, and not a health professional. During the interviews, the participants, many of whom were of different races and nationalities, and much older than me, may have been aware of how I am different to

them. This could have impeded or facilitated the content of the data. For example, in some instances, I believe participants were brief in answering my questions as they may have viewed my research as unimportant. On the other hand, some participants were helpful in "teaching" me about aspects of their work that they believed I didn't understand. I also encountered language barriers whilst interviewing staff, and some staff members, particularly the nurses, struggled to understand some of my questions.

One nurse thanked me for the research that I was doing, explaining that she felt inspired that somebody was making efforts in addressing issues of substance misuse and substance-related injury.

Results and Discussion

Medical staff members who participated in the interviews identified possible factors that may hinder or promote the implementation and execution of a screening and brief intervention programme at Groote Schuur trauma centre. These results give important insights as to the best way to implement a programme of routine screening and brief interventions within the trauma centre.

The Current Situation at Groote Schuur Trauma Centre

Both trauma surgeons, as well as two of the surgical registrars, estimate that currently between 50% and 60% of patients present to Groote Schuur trauma centre with injuries as a result of alcohol use. These estimations reflect findings from a previous study conducted within Groote Schuur trauma centre (Donson et al., 2000), and familiarity with these findings probably influenced their estimations. The rest of the staff members estimated the figure to be higher than this, with all of the nurses estimating that over 90% of all patients currently present with alcohol-related injuries. This over-estimation could be based on the aversive nature of drunken patients; of course, some of the injuries may be "alcohol-related" in that sober patients may be the victims of drunken perpetrators. This could also be an example of the availability heuristic, where individuals over-estimate information according to "the ease with which instances or associations come to mind" (Tversky & Kahneman, 1973, p. 208).

In 2000, patients presenting at Groote Schuur's trauma centre were tested for drug use using urine analysis (Donson et al., 2000). 33.9% of patients tested positive for marijuana use, while less than 10% of patients tested positive for the use of any other drugs such as mandrax, morphine and cocaine. Again, the estimations, this time of all participants, predominantly reflected these figures.

All staff members identified alcohol and tik (crystal methamphetamine) as the substances most commonly used by injured patients. Although Donson et al. (2000)'s study confirmed alcohol use as the substance most commonly related to injuries, none of the patients in 2000 tested positive for tik use. In 2002, only 0.3% of all patients in the Western Cape tested positive for tik use, but this increased to 49% by 2007 (Plüddemann et al., 2008), indicating the increasing prevalence of tik use among the trauma centre population.

The majority of staff members believe that alcohol-related injuries are most commonly seen in young patients (between ages 18 and 35), a finding confirmed in Donson and colleagues' study in 2000, as well as in patients who are of lower socio-economic status. This could be another example of the availability heuristic (Tversky & Kahneman, 1973) at

work; the areas served by Groote Schuur Hospital are all lower socio-economic areas. Two of the surgical registrars, however, believe that alcohol abuse is an issue that doesn't discriminate between age, race, or socio-economic status. These answers indicate that training should include assistance for staff to overcome this rather skewed understanding, in the case they dismiss the idea of screening, for instance, a middle-class white patient.

Screening for General Health Conditions

Participants reported that routine history taking is currently performed with every patient who presents to the trauma centre. This includes screening all women of reproductive age for pregnancy, as well as routine tests of blood glucose and haemoglobin levels, urine (for kidney-related problems), and blood pressure. Screening for other conditions, such as tuberculosis, depends on the patient's specific injuries, or if suspicion about a concurrent medical condition is raised whilst treating the patients.

When asked if a lack of time or a high patient load would result in staff members skipping out on any of these screening procedures, most participants confirmed that these procedures are standard practice, and have to be performed with every patient, irrespective of circumstance. A medical officer and a surgical registrar, however, explained that in situations where the trauma centre is encountering a very high patient load or when particular patients are in a serious condition, for example in need of resuscitation, screening for certain medical conditions isn't seen as priority, as staff members are focused on the immediate patient injuries. In these cases, the necessary screening occurs at a later stage, when the patient is in a more stable condition.

These findings are relevant to screening for alcohol misuse; if trauma staff skip out on these necessary medical screening procedures when they are busy, they are even more likely to skip out on screening for alcohol use when the trauma centre is experiencing a high patient-load.

Current Screening for Alcohol and Other Drugs

At present, the only method used by medical staff to screen patients for alcohol use is staff members' awareness of a smell of alcohol on the patient.

> Trauma Surgeon 2: "... [screening for alcohol] is done purely on the basis of clinical assessment. So do they smell like alcohol or do they present as a drunk person and then after 12 to 24 hours in the hospital they're normal. Then we presume they're under the influence of alcohol. There is absolutely no screening and no tests done to determine whether a person is under the influence."

Blood alcohol concentration tests are only ever performed when police specifically request them, and this happens very rarely. Alcometers were used to test patients' levels of alcohol consumption but fell out of favour approximately 13 years ago, due to issues of cost and sensitivity.

Screening for other drugs, in the form of a urine toxicology test, currently only happens when a patient is showing symptoms of withdrawal, or isn't reacting to medication as expected. Urine toxicology tests have to be sent to Tygerberg Hospital for analysis, as the laboratory at Groote Schuur Hospital is not equipped to conduct such tests. The laboratory at Tygerberg Hospital only operates during office hours, and so results usually take up to 2 days to return to Groote Schuur, even longer over weekends. Therefore, medical staff members only conduct urine toxicology tests when completely necessary.

Medical staff members do make a note, during the patient history-taking process, when they suspect that a patient has used alcohol or drugs, but cannot note it down as fact. For example, if a staff member notes, as fact, that a patient involved in a motor vehicle accident was under the influence of alcohol or other drugs at the time of the accident, the patient may face legal consequences, or insurance companies may claim that they are not liable for any payments.

This is justification for the use of questionnaire-based screening tools; they allow staff members to detect patients with drinking problems, but such a record of the patient using alcohol cannot be allowed in court as legal evidence.

Current Interventions for Alcohol and Other Drugs

When participants were asked how often they ask patients questions about their alcohol use, or provide advice about reducing alcohol consumption, the most common response was "never" or "very seldom." Staff members reported that only occasionally do they mention to patients that they shouldn't drink so much, or that their injuries are as a consequence of alcohol. Only one registered nurse said that she regularly talks to patients about their alcohol use, but explained that this is because her husband was an alcoholic, and so she has a personal interest in patients' alcohol consumption.

> Surgical Registrar 2: "...with some patients we do point out the consequences of their drinking, but in terms of sitting down and really chatting with them about their social circumstances, no, but with some patients we do point out that their injuries are a consequence of drinking."

Currently, the only intervention in the Groote Schuur trauma centre is for patients who show signs of domestic and/or child abuse, in which case a referral to the social worker is made. There is currently only one social worker, and she covers both the trauma centre and casualty wards. Even though she only works with patients who have been abused, she is already overcommitted in terms of her patient load. As a result, staff members recognised that a second social worker would need to be hired to cover any interventions for alcohol misuse.

> Trauma Surgeon 1: "At the moment if we found the person was a victim of domestic violence or a minor, we refer to the social worker. But if we were referring to her for substance abuse too... we cannot refer two-thirds of our patients to the social worker. So with our current staff limitations we can't really..."

Occasionally, the social worker refers patients to specialised alcohol and drug abuse treatment centres, but again this is only in cases where those patients who are showing signs of domestic and/or child abuse are also recognised as misusing alcohol or other drugs.

> Trauma Surgeon 2: "There is no intervention, that I can guarantee you. So your chances of getting any intervention are only if you are admitted and we detect something like [domestic or child] abuse and refer to the social worker."

Barriers to the Implementation of a Screening and Brief Intervention Programme

The first step in the successful implementation of a screening and brief intervention programme within a trauma centre, in this case within Groote Schuur Hospital, is to identify what the staff members believe to be potential barriers to its implementation (Williams et al., 2001).

Time limitations. Every one of the 16 staff members identified time as the major barrier to routine screening and brief interventions; the trauma centre is a chaotic, time-crucial and under-staffed environment. Staff members also reported that they currently handle high volumes of paperwork, creating further strain on their time. This identification of a lack of time as the major barrier is strongly supported in previous literature (Cherpitel, 2006; D'Onofrio & Degutis, Groves et al., 2010; Holland et al., 2009; Weiland et al., 2008).

> Medical Officer 1: "I mean there is a massive turnover of patients and chronic, chronic short staffedness... I think anything that is going to take up extra time is definitely a problem, obviously."

> Surgical Registrar 4: “To be honest, for the time limit here we don’t really get to all of the medical things that we should, sometimes things related to the patients’ medical condition aren’t done, so something like this...”
> Medical Officer 2: “There is already so much paperwork in admitting patients, so if it means more paperwork, it’s not going to happen, not in a trauma unit...”

Injury treatment as priority. Most staff members explained that their priority as trauma centre staff members is to treat patients’ injuries and then discharge them as soon as possible. As a result, a number of the staff members feel that issues of screening or intervention for alcohol misuse are not the priority of a trauma doctor or nurse. This barrier is reflected in previous literature (Guly, 2004).

> Surgical Registrar 3: “Honestly in this unit, my priorities are to stop bleeding and trauma related issues, I mean those are the things that should be sorted out elsewhere, by somebody else.”

Reliance on patient honesty. A surgical registrar reported that one of the main reasons staff members do not ask patients about their alcohol use is because (staff believe) most patients will deny excessive alcohol use. Nurses in other studies also reported concern regarding patients’ honesty (Groves et al., 2010; Peltzer et al., 2004; Weiland et al., 2008).

> Surgical Registrar 4: “I learnt from that experience that there is no ways that a patient is going to tell you how much they’ve had to drink. It’s kind of pointless because if you ask a patient if they’ve been drinking most people are going to say no. It’s usually double or triple what they tell you, I learnt that from what the blood tests ended up showing.”

Issues of honesty are particularly pertinent in this situation, as self-report questionnaires are the most viable screening methods in the trauma centre. However, most staff members did agree that “asking is better than not asking” and that most patients should eventually be honest about their levels of alcohol consumption. In this case, the nurses believed that a doctor would be the most appropriate person to ask questions about alcohol consumption, as they believe that doctors have the most authority in patients’ eyes, and that patients already expect doctors to ask personal questions requiring honest answers.

> Registered Nurse 2: “Some of [the patients], they’re actually really open about their tik or alcohol abuse. You know “I’m on tik, I used tik this morning,” they are quite

> honest... they become honest about it. Also the doctors tell them it can affect their treatment if they're not honest. The patients are quite honest about it, but only with the doctors."

Patient confidentiality. A number of doctors and nurses raised issues concerning patient confidentiality. These staff members are worried that if they screen a patient for alcohol use, and the patient is found to be over the legal driving limit, the patient could face legal consequences. Patient confidentiality is an issue in many international emergency departments (Chezem, 2004; D'Onofrio & Degutis, 2004), due to the former alcohol exclusion laws in the US (Grill, 2010).

> Enrolled Nurse 1: "We write 'patient appears' intoxicated and 'smells like alcohol', we can't write that the 'patient is drunk or is intoxicated.' If the patient goes to court then they'll come to us and say oh you wrote this on that day, you wrote that Mr X was drunk and now Mr X is suing you. We have to be careful."

> Trauma Surgeon 1: "There is a bit of a concern, like can those figures then be used by insurance companies to try and say that the patient was drunk and as such they are entitled to get out of any payments. At the same time, it's not really a legal sample because legal samples have to be taken in the presence of the police and taken through the police laboratory. Obviously it will also be useful to screen the patient and to be able to follow them up at a later stage but the confidentiality issue does worry me a little bit."

The questionnaire method of screening could be the solution to confidentiality issues, as it will allow staff members to assess patients' levels of alcohol consumption, without being a legal sample that can be used in court.

> Trauma Surgeon 1: "From what I've read, [a questionnaire as a method of screening] is useful. It's very useful to pick up alcohol use. And it certainly might kind of, with the confidentiality issues that we have, it might be the way to go."

Patient reaction. A few of the staff members expressed concern at patients' reactions to being screened for alcohol use. A trauma surgeon and a surgical registrar fear that some patients may react with aggression when asked questions about their alcohol consumption, or may not co-operate with medical staff, although this could be due to intoxication. A few of the nurses agreed, also explaining that patients may question the nurses' authority in

attempting to screen them. Nurses in international studies also report a fear of patients' reactions to being screened, including aggression and intimidation (Groves et al., 2010).

> Staff Nurse: "They'll say to you, "Are you a doctor, what are you?" They'd be more open if a doctor asked the questions. The doctor would tell them that its part of their treatment and you must answer these questions."

The majority of the staff members, however, confirmed that patients' reactions would not be a concern, as they are used to providing appropriate treatment despite patients' reactions.

Avoiding patients' personal issues. One of the surgical registrars explained that some doctors often don't ask patients questions about their alcohol consumption as it is simply easier to treat the patients' injuries without getting involved in the difficult personal circumstances of the patient. A number of the nurses said that they too avoid asking patients too many personal questions, mostly due to time limitations. This barrier is not recognised in literature.

> Surgical Registrar 3: "I suppose just a sense of awkwardness at having to deal with these kinds of social issues. A lot of doctors would tend to shy away from talking too much with patients. Because you then sort of get into their personal lives... You just know that the more you open up with a patient, they tend to just give more and more and I think it becomes so much, it can be a bit overwhelming. It will go beyond their alcohol abuse, it will be about how their father abused them, and all that stuff. Then you have to deal with all of that as well. So a lot of doctors subconsciously avoid that."

Language barriers. The issue of language barriers was mentioned by a few staff members, and is reflected in international studies (Babor & Higgens-Biddle, 2000; Weiland et al., 2008). Many of the patients presenting to Groote Schuur trauma centre, as well as a few of the doctors, are foreign. For example, one doctor is from Kenya and so struggles with patients who speak isiXhosa or Afrikaans. The head of the trauma unit emphasised the importance of verbal questionnaires being conducted in the patients' home language, a view expressed by other authors (Babor & Higgens- Biddle, 2000) and supported by the CFIR (Williams et al., 2011). However, if all staff members are trained in the provision of screening and brief interventions, language barriers shouldn't be a problem, as there should

always be at least one member of staff available who is proficient in whichever language is required, and could then carry out any necessary screening or interventions.

Scepticism. Every staff member reported feelings of scepticism towards the implementation of a screening and brief intervention programme at Groote Schuur trauma centre. This scepticism is directed at a number of aspects of the implementation. Other studies report staff scepticism as a common barrier to the execution of screening and brief implementation procedures (Weiland et al., 2008).

Firstly, a few staff members questioned the effectiveness of screening and brief intervention methods to make a difference to patients' patterns of alcohol use.

> Surgical Registrar 4: "How much difference can you really make with a patient who is already leaving, you've treated them for their injuries and now you're going to say a few words about not drinking so much. It feels a bit pointless."

A number of staff members are sceptical regarding alcoholics' ability to change their drinking behaviours.

> Medical Officer 1: "You wonder what the point is, because no matter what you say you're going to see this person again in 2 weeks or whatever, drunk again... unless the patient themselves is at the stage of readiness where they actually want to fix some kind of change, asking them about their alcohol, is not going to make any difference whatsoever. I don't know, alcoholics, they don't buy a lot of faith in their ability to change."

A few of the staff members reported scepticism regarding the applicability of a screening and brief intervention programme to a South African context. They understand that screening and brief interventions are effective overseas, but believe that this might not be the case with South African population groups.

> Surgical Registrar 4: "You think it sounds nice in theory, but it sounds like it was developed overseas, what about context? Here, you imagine talking to some of these patients about it and you kind of don't think it will make much difference."

> Trauma Surgeon 2: "Obviously you'd have to look at cultural differences, socio-economic, political differences will come into play. If the population group is compatible to the ones overseas then obviously you'll find the same results. But if its two different population groups, in terms of socio-economic, you know, poorer

> patients, less education, that type of thing, unemployed. If it worked there I'm sure it could work here as well. But it has to be compatible. It might not work for our population group for whatever reason. I think those are things you need to investigate and look at."

Financial constraints. Finally, a major barrier identified by staff members, particularly senior doctors, refers to a lack of funding. Other studies report financial constraints as a major barrier to the execution of screening and intervention procedures (Dunn & Gentilello, 2000). Currently, the provision of brief interventions for patients identified as misusing alcohol is dependent on the hiring of a second social worker, as the one social worker is already overcommitted in terms of her patient load. The head of the Groote Schuur trauma centre reported that he is currently unable to secure funding to hire further doctors, never mind for a second social worker or other resources needed to implement and execute a screening and brief intervention programme.

If no intervention can be provided, the head of the trauma centre fears that staff won't screen patients, as they might believe that there is no point. Therefore, the implementation of a screening and brief intervention programme at Groote Schuur Trauma centre is entirely dependent on funding.

> Trauma Surgeon 1: "I think the major barrier is just that once you screen, nothing will be done on top of that. There are no funds available to employ anyone. That is a major barrier. Because then [the programme] is going to fall apart. It's no good screening if there is no outcome of that screening. There will be no patient benefit. But I think that if we get funding, if the staff see that there is a continual follow-up of patients and they're aware of it happening, that will work. That is the only way this will work."

In summation, barriers identified by the staff members include time limitations, injury treatment as priority, a reliance on honesty, patient confidentiality, patient reaction, an avoidance of patients' personal issues, language barriers, scepticism, and a lack of funding. These are the barriers currently limiting staff members' efforts to provide any sort of screening or intervention for patients with alcohol-related injuries, as well as the barriers limiting the possible implementation of a formal screening and brief implementation programme. Before any steps can be taken in implementing such a programme, solutions to these barriers must be found.

Addressing Barriers to the Implementation of a Screening and Brief Intervention Programme

The optimal situation will be for a second social worker to be hired, who could carry out all necessary screening and brief intervention procedures. This will eliminate the barriers of time limitations and injury treatment as priority, as doctors and nurses will be unaffected by the implementation of this programme. Concerns over patient confidentiality will automatically be removed through the use of verbal questionnaires, although it is imperative that patients are screened for alcohol use in a private space.

The provision of training would address the majority of barriers identified in this study. Training will provide the opportunity to demonstrate the efficacy of screening and brief interventions in reducing patients' levels of alcohol consumption and injury recidivism. This should remove the majority of staff scepticism, encouraging and motivating staff members to carry out screening and brief interventions with all patients, despite any time limitations or other barriers. During training, staff will also be made aware of studies demonstrating that patients in trauma centres do generally tell the truth regarding alcohol consumption, thus removing concerns over a reliance on patients' honesty.

The head of the trauma centre believes that the findings of this study should play a role in convincing senior management of Groote Schuur Hospital of the value of implementing a screening and brief intervention programme at the hospital's trauma centre. This will hopefully result in the provision of funding for an extra social worker to be hired, and for the programme to be implemented, as standard protocol.

Obviously, the provision of training cannot address all barriers, for example language barriers or a desire to avoid patients' personal issues, but these barriers will probably always exist. Future research should address these particular barriers, investigating possible solutions.

Recommendations for the Possible Implementation of a Screening and Brief Intervention Programme

Despite any scepticism, every staff member confirmed that he or she would support the introduction of a mandatory screening and brief intervention programme within the trauma centre. Specifically, trauma staff members recognised the unique opportunity of the trauma centre for providing an intervention to patients, described in the literature as the "teachable moment" (Charbonney et al., 2010, p. 8).

> Medical Officer 1: “The trauma unit is a good time for reflection. When they’re lying there and they’re on the drips and they’re sobered up and in pain, it’s probably the best time to do the talk, because all the circumstances are reinforcing the point”
>
> Surgical Registrar 4: “So although I’ve said that I’m sceptical about it, if I had to pick a time, this would probably be the best time to talk to someone.”

Using a combination of the staff members’ opinions, I have created a model for the possible implementation of a programme of screening and brief interventions at Groote Schuur trauma centre. This model explains how such a programme could best be implemented and executed within the trauma centre, and considers the possible barriers that may be encountered during implementation or execution. This model will recommend the provision of training in screening and brief intervention methods as an opportunity to address these barriers, as well as the implementation of this programme as protocol.

The implementation of formal screening measures. The suggested method of screening, according to staff members, is taking blood from severely injured or intoxicated patients as part of their routine blood count, to test their immediate blood alcohol concentration as they arrive. Later, when the patient has recovered sufficiently and is able to answer questions coherently, staff members could conduct a questionnaire, such as the CAGE. However, in light of evidence discrediting blood alcohol concentration tests as effective screening tools, I recommend the use of questionnaire-based tools only. I suspect that as an initial step, trauma staff members may want to use blood tests and questionnaires concurrently, so as to assess (or be convinced of) the sensitivity of questionnaires in accurately testing for alcohol use.

Despite initial beliefs that doctors have more authority in asking patients questions about their alcohol use, staff members agreed that the nurses would be the most appropriate members of staff to conduct screening. Nurses usually carry out the routine history taking with patients, and there are usually more nurses than doctors available at any one time. However, if a second social worker is hired, he or she could be responsible for all screening, only relying on nurses when he or she is not available.

The implementation of brief interventions. Staff members agreed that the best time to carry out brief interventions is in the ward, a few days after patients have presented with their initial injuries. By this stage, patients will be in a stable condition, and able to carry out a coherent conversation. The ward is also a quiet environment in which the circumstances, or

"teachable moment", of the patient's situation can be reinforced. Patients who are not admitted to the ward, for example those with minor injuries only, could be taken into a side room to receive the necessary brief intervention, to allow for privacy.

According to staff opinion, these brief interventions could be carried out by nurses (again, once they have received the appropriate training) or a social worker, who could also refer severe cases to specialised treatment centres. As I have already explained, the optimal situation would be for a second social worker to be hired to carry out any brief interventions for patients identified as substance abusers. In addition, social workers already have the appropriate training in substance abuse interventions.

Training in screening and brief interventions. Before a programme of screening and brief interventions can be implemented at Groote Schuur trauma centre, as standard protocol, all staff members would need to receive training in the appropriate procedures. The provision of training would not only increase staff knowledge and confidence in the provision of screening and brief interventions, but also be a valuable opportunity to provide education to staff members regarding the efficacy of screening and brief interventions. Training or follow-up sessions should continue to be held every few months after the initial implementation of the screening and brief intervention programme, in order to resolve any difficulties encountered by staff members, and for the constant monitoring and evaluation of the efficacy of the programme.

Incentives and standard protocol. Some of the staff members identified incentives that may increase staff motivation and willingness to carry out screening and brief interventions. Some staff members said that simply providing tea and biscuits at training sessions might be extra motivation for staff members to attend. Other staff members mentioned a financial incentive, for example, members of staff who do regular screening or interventions could be more likely to receive performance bonuses at the end of the year. However, some of the senior doctors don't believe that incentives are necessary, as the implementation of this programme as protocol should be sufficient. This means that it will become standard practice, and therefore compulsory, for staff to execute screening and brief intervention procedures as part of their daily operations.

Conclusion

The suggestion for the implementation of a programme of screening and brief interventions at Groote Schuur trauma centre comes in light of evidence for both the extent of alcohol misuse and alcohol-related injury in Cape Town, and the efficacy of programmes of screening and brief interventions in reducing levels of alcohol misuse and alcohol-related injury. The implementation of this programme is in line with the City of Cape Town's Alcohol and Drug Strategy (2007-2010), which calls for the provision of evidence-based interventions for alcohol and other drugs in order to prevent the negative outcomes of alcohol misuse within South African society. Although the implementation of this programme is only one small step towards the reduction in levels of alcohol misuse and alcohol-related injury among Cape Town's population, it could be the first step in the implementation of similar programmes at other South African trauma centres.

Specific areas for further research include South African staff opinions towards screening and brief interventions, particularly towards any related barriers and promoting factors, at both other trauma centres and primary-level clinics. In this way, Groote Schuur trauma centre would be able to monitor their programme's efficacy through comparison to that of other similar trauma centres, ensuring that their programme is as efficacious as possible.

As this is a feasibility study, the implementation of this programme will allow for the findings in this paper to be confirmed or disconfirmed. Staff will be able to identify the real barriers that influence their provision of screening and brief intervention procedures, as well as whether the model I have suggested suits the daily operations of the trauma centre. Through the contestant monitoring and evaluation of the programme, and through regular feedback and training sessions, staff members should be able to find the necessary solutions to any barriers or difficulties they encounter, and so make the necessary amendments to the programme.

In order for the implementation of this programme to be as effective as possible, priority must be placed on the opportunity provided by training for the provision of necessary education and support, as well as the introduction of the programme as standard protocol. Responsibility falls to the senior management of the trauma centre to elucidate all goals and procedures related to the programme, so as to ensure that all staff members follow the same modus operandi, and have a common goal; to effectively target issues of substance abuse among the patient population.

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