

ABSTRACT

Up to sixty percent of people admitted to acute mental health services in Australia present with a clinically significant co-occurring drug and/or alcohol problem. These individuals experience poorer health outcomes when compared to the general population and to those people who have a mental illness but have no co-morbid alcohol and drug problems. Anecdotal evidence also suggests that many nurses working in the area do not have the knowledge and skills and confidence to work effectively with this patient population.

Drug and alcohol assessment tools, considered the gold standard, generally assess only one substance at a time or provide little specific information on the particular substance of use or abuse. An amended version of the World Health Organisation, (WHO) Alcohol Smoking and Substance Involvement Screening Test Version 3 (ASSIST V3.0) and associated brief interventions was implemented following an in-vivo education program at an acute mental health inpatient unit in Western Australia. This before and after intervention study utilised a self-rating questionnaire and a knowledge quiz to assess nurses' knowledge of drug and alcohol issues as well as their level of confidence to work with people who have a mental illness and co-occurring drug and alcohol problems. Translation of acquired knowledge into patient care was also evaluated through a review of patient medical records.

Significant improvement in nurses' knowledge was reported along with increased clinical confidence and skills to identify, assess, and manage this group of patients and to provide them with information and referral to appropriate agencies in the community.

Key words: ASSIST, drug and alcohol assessment, nurses' knowledge and confidence, mental illness.

INTRODUCTION

The number of people who present to acute mental health services with co-occurring mental illness and drug and/or alcohol problems is increasing with an upward trend in rates of substance abuse/dependence noted between 1997–1998 (Kavanagh et al., 2004) and 2010 (Moore, Mancuso, Slade, Galletly, & Castle, 2012). Rates between 25 to 60% have been reported in other Australian studies (Hoolahan, Kelly, Stain, & Killen, 2006; Australian Bureau of Statistics, 2007) and in the United Kingdom (20-37%) and the United States of America (38-50%) (Carra & Johnson, 2009). These trends reflect the increasing rate of harmful use of substances within the community (Moore et al., 2012).

In 2009, approximately 48% of patients with a diagnosed mental illness admitted to an acute mental health service in Western Australia presented with clinically significant co-occurring drug and alcohol problems (measured by the Health of the Nation Outcome Scales (HoNOS) © Royal College of Psychiatrists 1996). Increased availability and use of substances that are frequently used in combinations greatly increases the risk of harms (Winstock & Mitcheson, 2012) and hospital presentations. It is now widely accepted that individuals who present with a mental illness and co-occurring alcohol and drug problems have complex and severe clinical profiles, poorer levels of general health and functioning (Blanchard, Brown, Horan, & Sherwood, 2000; Mills et al., 2009).

The Australian “National Practice Standards for the Mental Health Workforce” articulates the importance of the workforce having skills to manage co-morbidity issues in patient, including alcohol and substance misuse/abuse (National Mental Health Education and Training Advisory Group, 2002). In the quest to improve the care for this group a number of guidelines have been developed to assist in the management of people with co-occurring mental illness and drug and alcohol problems which are adaptable to the acute mental health setting (Mills et al., 2009). For example, The ‘National Drug and Alcohol Research Centre’

provides comprehensive guidelines and recommend that all patients be routinely assessed for drug and alcohol co morbidity (Mills, et al., 2009). However, at a clinical level, the introduction of the clinical guidelines has not improved nurses' knowledge and competence to work with this patient group (Tran, Stone, Fernandez, Griffiths, & Johnson, 2009).

Mental health nurses working in the acute mental health setting report that they lack the knowledge, confidence and skills to work with patients who have co-occurring drug and alcohol problems. Mental health nurses express a lack confidence and knowledge in the areas of assessment, treatment and management of drug and alcohol issues (Happell, Carta, & Pinikahana, 2002a). In addition, mental health nurses report that they are unsure of how to speak with patients about their drug and alcohol use as part of their routine care (Brown, Pirmohamed, & Park, 1997; Gerace, Hughes, & Spunt, 1995; Happell et al., 2002a; Lacey, 2009). Lack of knowledge and ineffective clinical skills have been demonstrated to impede early identification, treatment, and referral of patients with drug and alcohol issues (Gerace et al., 1995). These have impacted on the quality of care provided to patients and on their length of hospital admission as well as readmission rates.

A review of the medical records of individuals who were identified as having clinically significant drug and alcohol problem on admission to one acute mental health setting in Western Australia in 2009 revealed that only 23.5% of these patients had drug and alcohol issues identified with resultant care in their management plans. Less than half of these patients (47.1%) had their co-occurring drug and alcohol problems documented in their nursing progress notes and only 17.6% of patients were referred for drug and alcohol follow-up on discharge from the inpatient setting. As a result, it was identified by nursing management that there was a need for in-vivo drug and alcohol training (that is, in-house training that imbeds knowledge in clinical practice) and that appropriate assessment and

intervention strategies were needed at the clinical level to improve the quality of care for this group of patients.

Increases in the number and type of illicit substances available to the general population (Degenhardt & Hall, 2012; Winstock & Mitcheson, 2012) has meant that mental health nurses need to have a greater understanding of the effects of drugs and alcohol on patients admitted with mental illness (Ratschen, Britton, Doody, Leonardi-Bee, & McNeill, 2009) . They are now required to have expert skills in assessment and treatment of mental illness and to be competent in assessing and managing drug and alcohol use, misuse and withdrawal (Kelleher, 2007). There are a number of assessment tools to assist clinicians in the assessment of alcohol and substance use that have been traditionally used in mental health setting. However, the assessment tools that are considered to be the gold standard tools in Australia either assess for the use of one substance at a time; for example The Alcohol Use Disorders Identification Test (AUDIT) (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) or provide non-specific information regarding the actual substance used, for example the Drug Abuse Screening Test (DAST) (Gavin, Ross, & Skinner, 1989). An alternative screening instrument that allows the assessment of multiple substances within the mental health setting would enable nurses to better assess drug and alcohol problems in patients admitted to acute mental health services.

The World Health Organisation (WHO) Alcohol Smoking and Substance Involvement Screening Test Version 3 (ASSIST - V3.0) is a brief, easily and quickly administered, valid (Newcombe, Humeniuk, & Ali, 2005) and reliable screening instrument that assesses the use of psycho-active substances in health care settings (Hides et al., 2009). The ASSIST (V3.0) consists of eight questions or items that can be answered by most patients in around ten minutes. The ASSIST (V3.0) is able to discriminate between substance use, abuse and dependence (Newcombe et al., 2005) and is a valid screening test for

identifying psychoactive substance use in individuals who use a number of substances (Humenuik et al., 2008). The ASSIST (V3.0) questionnaire has been designed specifically to identify and intervene with people who are using substances in a hazardous way that may be creating harm, including the risk of progressing to dependence. Eight questions cover tobacco, alcohol, cannabis, cocaine, amphetamine, sedative, hallucinogen, opioid and 'other' drug use, misuse and abuse. These documents are in the public domain and may be amended with due reference to the original documents.

The ASSIST-Linked intervention manual for use in primary care (draft -V2.1) (World Health Organisation, 2010), provides brief intervention strategies that can be used within the mental health in-patient setting. Each strategy is linked to an outcome score derived from the ASSIST (V3.0) and provides the clinician with a clear guideline regarding interventions that can be implemented to improve patient outcomes. Scores can be entered onto a feedback card designed to provide patients with feedback about their drug and alcohol use and associated risks incorporated as part of an intervention strategy that is outlined in the ASSIST-Linked intervention manual (World Health Organisation, 2010). The feedback card gives personalised feedback to patients regarding their risk score and associated health problem. This allows the health professional to invite them to review the scores and engage in a discussion (Brief Intervention) in a non-confrontational manner. This has been found to be a successful way of getting patients who are deemed to be at a moderate risk, to change their substance use behaviours (World Health Organisation, 2010).

This article reports the findings of research to determine nurse's knowledge and level of confidence to assess and provide evidence based interventions to people who have a mental illness and co-occurring drug and alcohol problems. The study also aimed to evaluate how the implementation of the World Health Organisation (WHO) Alcohol Smoking and Substance Involvement Screening Test Version 3 (ASSIST - V3.0) and associated brief

interventions strategies and accompanying educational program had been translated to nursing practice at the clinical level.

METHODS

The study posed no risk to participants and met the guidelines for a quality improvement initiative and approved by the Department of Psychiatry Governance Committee and Royal Perth Hospital Quality Improvement Unit. Ethical approval was obtained from one university in Western Australia. Quality improvement is used extensively in health care and utilises the Plan-Do-Study-Act (PDSA) cycle. It allows health professionals to obtain feedback on current practices and to identify gaps in practice that will lead to improved outcomes for patients (Colton, 2000; Kring, 2008; Newhouse, Pettit, Poe, & Rocco, 2006).

Design

The design of this study was a ‘before and after’ intervention study. The intervention being the introduction of an amended version of the WHO ASSIST (V3.0), an amended version of the ASSIST-Linked Intervention Manual; the ‘ASSIST-Linked Intervention Manual - MH Worker’ and ‘ASSIST-Linked Intervention Manual – Client’, and an education intervention

Interventions

1. Implementation of the WHO ASSIST (V3amended) to the ward as part of practice improvement at the service.

For use in the clinical setting, the WHO ASSIST (V3.0) questionnaire was amended to reflect local nomenclature with the term ‘sedatives’ changed to ‘benzodiazepines’. An

additional item, 'risk of withdrawal' with a code 1 for 'yes' or 0 for 'no', and a prompt to refer to a key on the reverse side of the document was added to the alcohol and benzodiazepine lists of questions. Prompts to enable accurate assessment of and interventions for alcohol and benzodiazepine withdrawal states were added to the reverse side of the document along with the National Health and Medical Research Council (NHMRC) guidelines for standard drinks, and a key for the ASSIST Risk Scores and associated brief interventions. The amended document will be referred to as the ASSIST V3amended from here on in.

2. 'ASSIST-Linked Intervention Manual - MH Worker' and 'ASSIST-Linked Intervention Manual – Client'

The ASSIST-Linked intervention manual for use in primary care (draft -V2.1) was amended so that two booklets could be produced, one for use by mental health workers and one that could be used by patients in the acute mental health setting. The 'ASSIST-Linked Intervention Manual - MH Worker' was a more complete manual which was used in education sessions with mental health nurses. It contained most of the information in the original document, and in addition information on commonly used drugs, and a list of contact details of referral support agencies within WA. The 'ASSIST-Linked Intervention Manual – Client' was a simpler version of the original document that contained information about the ASSIST assessment, and risks associated with hazardous use of drugs and alcohol, useful tools and intervention strategies and a list of local contacts and useful websites.

3. Education Intervention

A three hour drug and alcohol education session was provided to all nurses working in the ward by the Dual Diagnosis Liaison Clinical Nurses Specialist (DDL CNS) and author (KH) prior to the implementation of the ASSIST V3amended. The session covered all aspects of drug and alcohol assessment, treatment, referral and follow-up care. Education was also

provided on the use of the ASSIST V3amended and the associated brief interventions outlined in the ASSIST-Linked intervention manual MH-Worker. Drug and alcohol education up-dates lasting approximately one hour were then provided on a monthly basis throughout the study period.

Continued support and training regarding the implementation of the ASSIST V3amended and the amended ASSIST-Linked Intervention Manuals was provided by the DDL CNS and author (KH) during the implementation phase of the intervention. Clinical support during the implementation phase was provided by the medical team, nursing management team and allied staff of the unit.

In evaluating the effectiveness of the intervention to improve nurses' knowledge and skills to work with this patient group the following data were collected:

1. The Drug and Alcohol Knowledge Quiz adapted from the questions provided in (Tables II and III) used by Happell, Carta and Pinilahana (2002). The quiz was administered before the first education session and three months after the implementation of the ASSIST V3amended into the clinical setting.
2. Knowledge and Confidence Self-Rated Questionnaire was also adapted from (Happell et al., 2002a). The 27-item questionnaire incorporated items from Tables 4, 6 and 7. Respondents were asked to indicate their level of knowledge and confidence for each of the 27 items using the following scale; 1 'Not at all knowledgeable/confident', 2 'A little knowledgeable/confident', 3 'Moderately knowledgeable/confident' and 4 'Very knowledgeable/confident'.

Data collection

Nurse Participants

All registered nurses working day and/or afternoon duty were invited to participate in the study. Eighteen nurses completed a 15 item drug and alcohol knowledge quiz and 27-item knowledge and confidence self-rated questionnaires, before and after the implementation of the ASSIST V3, associated brief interventions and education program giving a response rate of 78%.

Medical Record Review

Medical records for this review were selected when a patient scored a 2 or above for question three “problem drinking or drug taking” of the Health of the Nation Outcome Scale (HoNOS) at admission. HoNOS data is routinely collected on admission and discharge as part of the National Outcome and Case-mix Collection in Australia. A score of greater than two on any item of the HoNOS indicates a clinically significant issue that requires intervention (Burgess, Trauer, Coombs, McKay, & Pirkis, 2009). This was deemed as an appropriate method of identifying the sample as in the in-patient setting nurses are solely responsible for administering this assessment on admission and discharge.

Seventeen patients met the review criteria pre-test and 25 post-test and their medical records were reviewed as part of this study. The following data was collected;

- whether a drug and alcohol assessment was completed on admission,
- whether appropriate nursing interventions provided,
- whether there was documented evidence that drug and alcohol education or resources given to the patient,
- if the patient has been referred to the DDL CNS,
- whether the patients was referred for appropriate alcohol and drug services and appropriate post discharge follow-up,

- discharge HoNOS scores for question three, and ICD-10 discharge diagnoses. The data was collected using a data collection tool designed specifically for the study.

The purpose of this review was to examine the assessment and interventions received by patients in the acute mental health setting prior to the commencement of the study, and again after the completion to determine if ASSIST V3 amended and associated interventions were translated by nursing staff into improved patient care outcomes.

RESULTS

The demographic characteristics of the nurse respondents (n=18) are detailed in Table I.

<<INSERT TABLE I HERE>>

Post test data could only be obtained from 14 of the 18 participants due to staffing changes within the unit.

Knowledge and confidence

There was an overall improvement in nurses' knowledge of drug and alcohol issues. The results are detailed in Table II.

<<INSERT TABLE II HERE>>

Subjective improvement in knowledge of drug and alcohol issues was supported by objective scores in the 15-item knowledge quiz. There was a significant improvement in mean correct responses when the pre and post intervention quizzes were compared: mean

correct answers 1.2 (SD 2.264, n=18) compared to 13.21 (SD 2.293, n=14) respectively; $t = -2.456$, (df, 30) $p = 0.02$.

Significant improvements were noted in nurses' confidence in dealing with individuals with drug and alcohol issues (see Table III).

<<INSERT TABLE III HERE>>

Results of medical record review

There was no pre-test and post-test difference in the demographic characteristics of the patients whose medical records were selected ($p > .05$). In post test data significant improvements were noted in the number of drug and alcohol assessments completed at admission ($p < 0.001$) and the number of drug and alcohol issues identified in management plans ($p < 0.05$). The results of the medical record review are detailed in Table IV.

<<INSERT TABLE IV HERE>>

There was no difference in the number of individuals who received an ICD10 diagnosis for drug and alcohol issues from the medical team at discharge ($p = .934$). Nurses correctly identified 82.4% of patients' pre and 83.8% post who had a clinical diagnosis of drug and/or alcohol issues on admission using the HoNOS. Thus validating the nurses' initial assessment and the use of the admission HoNOS score for question three as a method of sample selection. There was only a slight (1.4%) improvement in agreement between nursing admission HoNOS and medical assessment according to ICD10 diagnosis on discharge pre

and post-test, suggesting that question three of the HoNOS provides a reliable assessment for co-occurring drug and alcohol issues in individuals with mental illness.

DISCUSSION

Drug and alcohol problems have a major impact on individuals with co occurring mental illness. On average, people with alcohol or drug use have approximately 30% more physical diagnoses per case than non-substance users and are at increased the risk of premature death, morbidity, and disability (Adams, 2008; Degenhardt & Hall, 2012). People with co occurring drug and alcohol issues also tend to have substantially poorer symptomatic and functional outcomes, including increased relapses and re-hospitalisations; financial, health, and legal problems; unstable housing and homelessness; and family burden (Kavanagh et al., 2004).

Individuals who use drugs and alcohol are exposed to a number of harms associated with use. Degenhardt (2012) suggest four broad types of adverse health effects from drug and alcohol use:

1. Harms associated with drugs and alcohol include the acute toxic effects of intoxication and withdrawal, overdose and poisoning as well as associated effects such as accidental injury (for example road-traffic accidents, falls, drowning, and related injuries) and violence increase the risk of morbidity (Degenhardt & Hall, 2012; Koola et al.2012; Moore et al., 2012)

2. The adverse health effects of sustained or chronic use such as chronic cardiovascular disease, cirrhosis diabetes, heart disease, asthma, skin infections, cancer, respiratory disorders and gastrointestinal disorders (Degenhardt & Hall, 2012). Increased rates of lung, liver and anogenital cancers have also been reported (Randall et al., 2011).

3. Blood-borne bacterial and viral infections, for example HIV, hepatitis C, and hepatitis B infections from unsafe injection practices are important health consequences in those who inject opioids, cocaine, or amphetamines or other drugs (Degenhardt & Hall, 2012; Koola et al. 2012).

4. Mental disorders such as depression, anxiety and psychosis which are harms directly associated with alcohol or drug use (Adams, 2008; Marshall & Werb, 2010), although it is often difficult to ascertain whether the mental disorder preceded or contributed to the development of problem drug use, or are exacerbated by use (Degenhardt & Hall, 2012).

Other harms associated with drug and alcohol reported in the literature include social problems such as criminality, homelessness, re-hospitalisation, unemployment, violence, poorer global functioning, legal problems suicidal behaviour (Blanchard et al., 2000; Moore et al., 2012) and victimisation (Koola et al., 2012). These additional factors further increase the harms for people who have an underlying mental illness. Factors such as overdose, poisoning, trauma and suicide are positively associated with increased risk of mortality in people with personality and affective disorder (Adams, 2008; Marshall & Werb, 2010) and psychotic disorders (Degenhardt & Hall, 2012).

Given the high number of patients presenting to emergency departments and acute mental health services with drug and alcohol issues and the increasing exposure of nurses to substance using patients, it is important to establish practice guidelines and or protocols and to target staff training to meet the needs and expected outcomes of patients' with substance use issues (Kelleher, 2007).

Many health care professionals consider caring for clients with drug and alcohol related problems to be a difficult and unpleasant experience (Happell, Carta, & Pinikahana, 2002b; Pinikahana, Happell, & Carta, 2002). Kelleher (2007) suggests that nurses in

particular, often hold moralistic, stereotypical, and pessimistic views about drug addiction. This coupled with deficits in knowledge may result in the failure to identify and address patients with substance use problems. Added to this is the fact that much of the research appears to have concentrated on negative connotations of harm and risks associated with co-occurring drug and alcohol issues (Adams, 2008). Adopting a more positive and optimistic attitude towards substance use diagnosis and treatment may empower health professionals to provide the appropriate help to those in need of medical and psychological care (Pinikahana et al., 2002) at both the identification phase and the treatment phase of service delivery (Kelleher, 2007). Investigating the reasons for use through research and providing more balance literature may allow a more positive and optimistic approach to be developed (Adams, 2008)

Providing nurses with professional knowledge, skills and research, along with improved nursing policies, guidelines and clinical expertise increases the likelihood that they will be better prepared to deliver quality evidence based care to patients with mental illness and co-occurring drug and or alcohol problems. Quality, inexpensive and short educational programs such as the one detailed in this study significantly increased knowledge, attitude and confidence levels of nurses to work with patients with drug and alcohol problems (Gerace et al., 1995; Lacey, 2009; Rassool & Rawaf, 2008). This study demonstrated that ASSIST V3 and the ASSIST-linked brief interventions are easily adapted for use in the mental health setting. Additionally the in-vivo training associated with this intervention proved to be effective, inexpensive and easily translated into clinical care. The adoption of the ASSIST V3 amended and associated interventions provided an opportunity for sustained knowledge acquisition and confidence in the assessment and treatment of people who have a mental illness and co-occurring alcohol and substance use problems. This intervention enabled clinicians to combine mental health assessment with a standardised assessment of

drug and alcohol issues which is accepted as best practice in formulating clinical management plans and effective strategies in supportive mental health care and health-promoting education (Groth-Marnat, 2009; Allen et al., 2009).

Knowledge of what drugs are available in the local population greatly increases the chance of appropriate treatment being offered. The increased availability of drugs and alcohol in the general community and the fact that drugs and alcohol are frequently used in combinations greatly increase the risk of harms (Winstock & Mitcheson, 2012) and hospital presentations. Compounding this is the availability of new drugs (for example γ -hydroxybutyrate (GHB) and its prodrugs, γ -butyl-lactone (GBL) and 1,4-butanediol; and ketamine) that have unknown risks of harms (Winstock & Mitcheson, 2012) not only increase the frequency of acute admissions to mental health services but add to the complexity of the provision of care to these individuals. Patients may present to mental health or emergency services with either concerns about their drug use or problems associated with drug use (for example, withdrawal on cessation of GBL or benzodiazepines); or they may report a problem that is drug related, but is not recognised as such (for example, urinary symptoms related to ketamine use) (Winstock & Mitcheson, 2012).

Overall improvement was found in nurses' knowledge of drug and alcohol issues and in their level of confidence to work with patients who have a mental illness and co-occurring drug and alcohol problems following the introduction of the ASSISTV3amended and associated brief interventions manuals and in-vivo education program. Significant improvements were noted in nurse's knowledge and confidence to conduct an assessment of a patient's drug and alcohol use and dependence as a direct result of introducing the ASSIST V3amended into the area. The significant improvements noted in knowledge relating to the identification of drug use and dependence, and relapse prevention allowed nurses to feel more

confident in talking with mental health patients about co-occurring drug and alcohol problems that impact on their overall health outcomes (see Tables II and III).

In determining the most appropriate treatment approach mental health clinicians need to determine why the individual may use drugs or alcohol, for example to counteract the effects of their prescribed medication, to improve the negative affect of their illness or relieve stress or boredom etc) (L. Thornton et al., 2012). For those psychotic disorders, tobacco and for those with depression, alcohol use helps individuals to cope, gives them a source of pleasure, for social reasons and to help with symptoms of their mental illness and medication side effects (Thornton, Baker, Johnson, & Lewin, 2012). Significant improvements in nurse's confidence to provide information on such things as the effect of marijuana on psychosis, the interaction between illicit drugs and psychiatric medications, the effect that alcohol has on psychiatric medications and the triggers for alcohol use allows the provision of timely interventions that can occur during the patient's hospitalisation in an acute mental health setting. Providing mental health nurses with the skills and confidence to effectively manage drug and alcohol withdrawal and to provide information and early intervention strategies may enable sustained changes in behaviours in this patient population (Lacey, 2009).

Individuals may benefit from treatment services which concurrently address co-morbid substance use (Moore et al., 2012). It may be beneficial to also tailor interventions for co-existing mental disorders and substance use by substance type and type of mental disorder. For example, interventions might be improved by addressing the social role of drugs and alcohol use and by helping people with mental disorders gain pleasure from their lives in other ways (L. Thornton et al., 2012)

The results of this study suggested that nurses were more confident to provide patients with information regarding referral agencies for drug and alcohol services. It is anticipated that this knowledge and confidence has an immediate positive effect on patient health care

outcomes and ongoing engagement with nurses during the period of hospitalisation. Optimal treatment outcomes are realised when clinicians consider both abstinence and non-abstinence goals, develop therapeutic techniques and external incentives to promote motivation for change (Adams, 2008). Motivational strategies and cognitive behavioural therapy are effective interventions to help people with co occurring drug and alcohol issues, especially those with co-occurring alcohol and depressive or anxiety disorders (Baker et al., 2002; Baker, Thornton, Hiles, Hides, & Lubman, 2012).

It is important that mental health services provide high quality and targeted interventions for co occurring drug and alcohol problems. Public health strategies to change alcohol- and drug-related behaviour, including tobacco smoking (L. K. Thornton et al., 2012) in the general population, such as pricing and age constraints that should have a beneficial effect in reducing co morbid dependence (Carra & Johnson, 2009) have been demonstrated to be ineffective among those with psychotic disorders (L. K. Thornton et al., 2012). Developing strategies specifically targeted to people with serious mental illness are now more critical (Moore et al., 2012) so that those with co occurring drug and alcohol issues avoid being subject to intervention by the criminal justice system (Carra & Johnson, 2009). Consensus agreement emphasizes the need for integrated treatment, but the evidence basis for specific interventions remains quite small (Adams, 2008). A staged approach to management that begins in the primary care setting along with brief intervention is recommended. However if an accompanying mental health problem is identified and a patient does not respond to a brief motivational intervention, referral to a specialist service should be considered if the patient is willing (Winstock & Mitcheson, 2012). Significant improvements were found post intervention in nurses' level of knowledge and confidence to provide brief interventions (providing information and advice without follow-up) and motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems) to

individuals with drug and alcohol problems (see Tables II and III). Thus the ASSISTV3amended provided the opportunity for an assessment that included patient participation and the provision of using motivational brief interventions, and demonstrated to improve treatment outcomes for this group of patients (McQueen, Howe, Allan, Mains, & Hardy, 2011).

The introduction of the ASSISTV3amended and associated brief interventions provided significant and sustained improvements in the assessment and of drug and alcohol issues and the inclusion of drug and alcohol issues in the patient's management plan. These improvements were noted in the three month post intervention medical record review (see Table IV). Such improvements are evidence of sustained practice improvement and translation of nursing knowledge and skills into improved patient care outcomes.

This study was conducted in a single acute mental health ward attached to an inner city general hospital. Although the sample size does not allow for generalisations it is expected that the patient characteristics are typical of many of those from within other inner city hospital settings, making an amended version of the WHO ASSIST V3 a valuable tool in the acute mental health setting. In order to promote nurse involvement in drug and alcohol prevention, it is necessary to provide skill-based training on assessment of drug and alcohol problems and intervention techniques aimed at increasing the capacity for intervention (Willaing & Ladelund, 2005) as detailed in this article. Future programs should be targeted at the needs of individuals, as there are variations in the level of knowledge, skills and confidence in different groups of nurses (Lacey, 2009). It is therefore suggested that specific training should be provided within the work practice environment with further updates on drug and alcohol-related counselling (Willaing & Ladelund, 2005) to ensure sustained knowledge acquisition and optimal nursing confidence .

CONCLUSION

This study demonstrated that the ASSIST V3 was able to be amended for use in an acute mental health setting. It was also demonstrated that the adoption of the ASSIST V3 amended and associated brief interventions manuals along with in-vivo education program improved the assessment of drug and alcohol issues and improved the knowledge and confidence of nurses working in the area to assess, manage and provide information on the risks associated with their drug and alcohol issues and appropriate referral agencies in a population of patients with mental illnesses. A review of patient medical records revealed this practice change was translated into patient care in the areas of improved drug and alcohol assessment and identification of drug and alcohol issues in management plans. It was also demonstrated that the score of two or more for question three of the HoNOS was an appropriate method of selecting individuals for review who had an identified mental illness and a clinically significant co-occurring drug and or alcohol issue.

The authors have no conflict of interest and have full control of all primary data.

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Title: The Alcohol Smoking and Substance Involvement Screening Test (ASSIST) in
an Acute Mental Health Setting

Running Title: Adopting the ASSIST in an Acute Mental Health Inpatient Setting

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Table I Demographic Characteristics of Nurse Respondents (n=18)

Sex	Male	8
	Female	10
Position Level	Clinical Nurse	8
	Registered Nurse	8
	Clinical Nurse Manager	2
Experience in Mental Health	1-5 years	3
	6-10 years	2
	>10 years	13

Table II: Results of a questionnaire to determine nurses' perceived knowledge of drug and alcohol issues in patients with mental illnesses pre and post introduction of ASSIST V3 amended and educational program

		n	Not at all knowledgeable	Only a little knowledgeable	Moderately knowledgeable	Very knowledgeable	χ^2	df	p																																																																																																																																																																																																																																																																																																																																												
1. Identification of alcohol use and dependence	Pre	18	0	5	9	4	5.038	2	.081																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	8	6				2. Identification of drug use and dependence	Pre	18	0	9	5	4	10.328	2	0.006	Post	14	0	0	10	4	3. Identification of alcohol withdrawal	Pre	18	0	3	11	4	0.701	2	0.704	Post	14	0	1	10	3	4. Identification of drug withdrawal	Pre	18	0	8	8	2	2.365	2	0.306	Post	14	0	3	10	1	5. Identification of drug overdose	Pre	18	0	4	12	2	2.433	2	0.296	Post	14	0	1	9	4	6. Assessment of alcohol use and dependence	Pre	18	0	9	6	3	10.994	2	0.004	Post	14	0	0	6	8	7. Assessment of drug use and dependence	Pre	18	1	10	4	3	13.037	3	0.005	Post	14	0	0	8	6	8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009	Post	14	0	0	7	7	9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14
2. Identification of drug use and dependence	Pre	18	0	9	5	4	10.328	2	0.006																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	10	4				3. Identification of alcohol withdrawal	Pre	18	0	3	11	4	0.701	2	0.704	Post	14	0	1	10	3	4. Identification of drug withdrawal	Pre	18	0	8	8	2	2.365	2	0.306	Post	14	0	3	10	1	5. Identification of drug overdose	Pre	18	0	4	12	2	2.433	2	0.296	Post	14	0	1	9	4	6. Assessment of alcohol use and dependence	Pre	18	0	9	6	3	10.994	2	0.004	Post	14	0	0	6	8	7. Assessment of drug use and dependence	Pre	18	1	10	4	3	13.037	3	0.005	Post	14	0	0	8	6	8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009	Post	14	0	0	7	7	9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6												
3. Identification of alcohol withdrawal	Pre	18	0	3	11	4	0.701	2	0.704																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	1	10	3				4. Identification of drug withdrawal	Pre	18	0	8	8	2	2.365	2	0.306	Post	14	0	3	10	1	5. Identification of drug overdose	Pre	18	0	4	12	2	2.433	2	0.296	Post	14	0	1	9	4	6. Assessment of alcohol use and dependence	Pre	18	0	9	6	3	10.994	2	0.004	Post	14	0	0	6	8	7. Assessment of drug use and dependence	Pre	18	1	10	4	3	13.037	3	0.005	Post	14	0	0	8	6	8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009	Post	14	0	0	7	7	9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																												
4. Identification of drug withdrawal	Pre	18	0	8	8	2	2.365	2	0.306																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	3	10	1				5. Identification of drug overdose	Pre	18	0	4	12	2	2.433	2	0.296	Post	14	0	1	9	4	6. Assessment of alcohol use and dependence	Pre	18	0	9	6	3	10.994	2	0.004	Post	14	0	0	6	8	7. Assessment of drug use and dependence	Pre	18	1	10	4	3	13.037	3	0.005	Post	14	0	0	8	6	8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009	Post	14	0	0	7	7	9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																												
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	Post	14	0	0	6	8				7. Assessment of drug use and dependence	Pre	18	1	10	4	3	13.037	3	0.005	Post	14	0	0	8	6	8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009	Post	14	0	0	7	7	9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																												
7. Assessment of drug use and dependence	Pre	18	1	10	4	3	13.037	3	0.005																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	8	6				8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009	Post	14	0	0	7	7	9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																												
8. Referral agencies for drug and alcohol services	Pre	18	2	7	7	2	11.457	3	0.009																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	7	7				9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019	Post	14	0	0	6	8	10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																												
9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	7	3	10.006	3	0.019																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	6	8				10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016	Post	14	0	1	3	10	11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																												
10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	2	5	8	3	10.371	3	0.016																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	1	3	10				11. Relapse prevention	Pre	18	3	8	4	3	7.935	3	0.047	Post	14	0	2	5	7	12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																												
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	Post	14	0	2	5	7				12. Management of alcohol withdrawal	Pre	18	0	5	9	4	5.038	2	0.081	Post	14	0	0	8	6	13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																												
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	Post	14	0	0	8	6				13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062	Post	14	0	1	10	3	14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																												
13. Management of drug withdrawal	Pre	18	0	8	7	3	5.561	2	0.062																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	1	10	3				14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137	Post	14	0	3	5	6	15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																												
14. Management of overdose	Pre	18	2	7	7	2	5.520	3	0.137																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	3	5	6				15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051	Post	14	0	1	7	6	16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																												
15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	5	3	7.783	3	0.051																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	1	7	6				16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001	Post	14	0	0	8	6	17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																												
16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	4	6	8	0	15.476	3	0.001																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	8	6				17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088	Post	14	0	0	6	8	18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																																												
17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	9	4	6.535	3	0.088																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	6	8				18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083	Post	14	0	0	8	6	19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																																																												
18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	5	9	3	6.663	3	0.083																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	8	6				19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332	Post	14	0	2	6	6	20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																																																																												
19. Risks associated with drug use	Pre	18	0	6	7	4	2.207	2	0.332																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	2	6	6				20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146	Post	14	0	2	4	8	21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																																																																																												
20. Risks associated with alcohol use	Pre	18	0	3	10	4	3.851	2	0.146																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	2	4	8				21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001	Post	14	0	0	11	3	22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																																																																																																												
21. NHMRC guidelines for alcohol consumption	Pre	18	5	7	5	0	17.120	3	0.001																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	11	3				22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003	Post	14	0	0	8	6																																																																																																																																																																																																																																																																																																																												
22. NHMRC Guidelines relating to standard drinks	Pre	18	4	7	4	2	14.176	3	0.003																																																																																																																																																																																																																																																																																																																																												
	Post	14	0	0	8	6																																																																																																																																																																																																																																																																																																																																															

23. Providing information on a patients closest alcohol and drug service	Pre	18	2	8	5	2	12.253	3	0.007
	Post	14	0	0	9	5			
24. Triggers for alcohol use	Pre	18	0	5	7	5	6.593	3	0.073
	Post	14	2	0	8	4			
25. Triggers for drug use	Pre	18	0	5	7	5	3.528	3	0.317
	Post	14	2	2	7	3			
26. Providing information for drug and alcohol rehabilitation services	Pre	18	1	8	6	2	2.735	3	0.434
	Post	14	0	4	6	4			
27. WA health prevention strategies	Pre	18	2	9	6	0	14.729	3	0.002
	Post	14	0	0	10	3			

*p<.05, **p<.01

Table III: Results of a questionnaire to determine nurse's perceived confidence dealing with patients who have both a mental illnesses and drug and alcohol issues pre and post introduction of ASSIST V3 amended and educational program

		n	Not at all confident	Only a little confident	Moderately confident	Very confident	χ^2	df	p
1. Identification of alcohol use and dependence	Pre	18	0	7	6	4	4.731	2	0.094
	Post	14	0	1	7	6			
2. Identification of drug use and dependence	Pre	18	1	6	6	4	7.465	3	0.058
	Post	14	0	0	8	6			
3. Identification of alcohol withdrawal	Pre	18	0	5	9	3	0.608	2	0.738
	Post	14	0	3	7	4			
4. Identification of drug withdrawal	Pre	18	1	7	7	2	2.131	3	0.546
	Post	14	0	4	9	1			
5. Identification of drug overdose	Pre	18	1	5	9	2	2.146	3	0.543
	Post	14	0	3	7	4			
6. Assessment of alcohol use and dependence	Pre	18	1	5	7	4	6.235	3	0.101
	Post	14	0	0	8	6			
7. Assessment of drug use and dependence	Pre	18	2	7	5	3	10.619	3	0.014*
	Post	14	0	0	10	4			
8. Referral agencies for drug and alcohol services	Pre	18	2	7	5	3	10.619	3	0.014*
	Post	14	0	0	10	4			
9. Brief Interventions (providing information and advice without follow-up)	Pre	18	2	6	6	3	9.080	3	0.028*
	Post	14	0	0	8	6			
10. Motivational counselling (persuasive, supportive strategies to allow patients to recognise their problems)	Pre	18	4	5	4	4	5.740	3	0.125
	Post	14	0	3	3	8			
11. Relapse prevention	Pre	18	4	8	2	2	7.806	3	0.05
	Post	14	0	4	5	5			
12. Management of alcohol withdrawal	Pre	18	0	6	7	3	6.568	2	0.037*
	Post	14	0	0	10	4			
13. Management of drug withdrawal	Pre	18	1	8	5	2	9.569	3	0.023*
	Post	14	0	1	12	1			
14. Management of overdose	Pre	18	2	9	5	0	7.041	3	0.071
	Post	14	0	5	5	4			
15. Providing information on the effect of marijuana on psychosis	Pre	18	4	5	3	3	9.243	3	0.026*
	Post	14	0	1	7	6			
16. Providing information of the interaction between illicit drugs and psychiatric medications	Pre	18	5	7	4	0	15.525	3	0.001**
	Post	14	1	0	9	4			
17. Providing information on effect that alcohol has on mental state.	Pre	18	1	4	7	4	5.558	3	0.135
	Post	14	1	0	5	8			
18. Providing information on the effect that alcohol has on psychiatric medications.	Pre	18	1	7	5	3	8.237	3	0.041*
	Post	14	1	0	7	6			
19. Risks associated with drug use	Pre	18	0	4	8	4	0.536	2	0.765
	Post	14	0	2	8	4			
20. Risks associated with alcohol use	Pre	18	0	3	10	3	3.597	2	0.168
	Post	14	0	4	4	6			
21. NHMRC guidelines for alcohol consumption	Pre	18	3	6	6	1	7.701	3	0.053
	Post	14	2	0	9	3			
22. NHMRC Guidelines relating to standard drinks	Pre	18	3	5	5	2	11.090	3	0.011*
	Post	14	0	0	7	7			
23. Providing information on a patients	Pre	18	2	5	6	3			

closest alcohol and drug service	Post	14	0	0	11	3	8.374	3	0.039*
24. Triggers for alcohol use	Pre	18	0	7	5	4			
	Post	14	2	0	8	4	9.602	3	0.022*
25. Triggers for drug use	Pre	18	1	6	5	4			
	Post	14	2	2	7	3	2.688	3	0.442
26. Providing information for drug and alcohol rehabilitation services	Pre	18	3	5	6	2			
	Post	14	0	2	9	3	4.974	3	0.174
27. WA health prevention strategies	Pre	18	4	6	6	0			
	Post	14	0	0	10	3	13.838	3	0.003**

*p<.05, **p<.01

Table IV: Audit of medical records of patients with clinically significant drug +/- alcohol issues pre and post introduction of ASSIST V3 amended and educational program.

		Pre Test n=17		Post Test n=24		df	χ^2	p
Admission HoNOS Score for Question 3 - Problem Drinking or Drug Taking	2	5	(29.4%)	5	(20.8%)	2	1.316	0.518
	3	9	(52.9%)	11	(45.8%)			
	4	3	(17.6%)	8	(33.3%)			
Alcohol and Drug (D&A) assessment completed at admission?	No	17	(100%)	12	(50%)	1	12.017	0.001**
	Yes	0	(0%)	12	(50%)			
Did the nurse's admission entry reflect D&A issues?	No	6	(35.3%)	10	(41.7%)	1	0.17	0.68
	Yes	11	(64.7%)	14	(58.3%)			
Did the patient have an ICD10 diagnosis for D&A issues at discharge?	No	3	(17.6%)	4	(16.7%)	1	0.007	0.934
	Yes	14	(82.4%)	20	(83.8%)			
Were A&D issues identified in the management plan?	No	13	(76.5%)	11	(45.8%)	1	3.848	0.049*
	Yes	4	(23.5%)	13	(54.2%)			
Nursing entry in progress notes to reflect D&A issues?	No	10	(58.8%)	11	(45.8%)	1	0.672	0.53
	Yes	7	(41.2%)	13	(54.2%)			
Evidence that D&A information had be provided to the patient?	No	9	(52.9%)	16	(66.7%)	1	0.788	0.375
	Yes	8	(47.1%)	8	(33.3%)			
Was the patient referred to RPH DASS?	No	15	(88.2%)	18	(75%)	1	1.11	0.292
	Yes	2	(11.8%)	6	(25%)			
Was the patient referred to an appropriate D&A service on D/C?	No	10	(58.8%)	18	(75%)	1	1.203	0.273
	Yes	7	(41.2%)	6	(25%)			
Discharge HoNOS Score for Question 3 Problem Drinking or Drug Taking	0	3	(17.6%)	8	(36.4%)	4	2.552	0.635
	1	4	(23.5%)	4	(18.2%)			
	2	3	(17.6%)	3	(13.6%)			
	3	1	(5.9%)	5	(22.7%)			
	4	1	(5.9%)	2	(9.1%)			
	Missing	5	(29.4%)	2	(9.1%)			

*p<.05, **p<.01