

**New Zealand Nurses' Alcohol and Other Drug Use**

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## **Abstract**

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This study is the first New Zealand research to estimate the prevalence of nurses' alcohol and other drug use (AOD). It is also the first study to examine the implications of altered work performance due to AOD use.

A mixed methods design was used. This included developing a questionnaire and surveying a nationally representative sample of active registered nurses. In addition, to gain a greater depth of understanding of the survey findings, focus groups and individual interviews were undertaken with active registered nurses, managers of nurses and Directors of Nursing across rural, regional and metropolitan regions.

This research found that nurses' use of alcohol was similar to that reported for the New Zealand general population. Nurses' cannabis use was less than reported for the general population and their opiate and benzodiazepine use was two times greater.

When nurses reported working below their normal level of performance due to their AOD use, their critical thinking and decision making abilities were altered, and they neglected the emotional care of patients and families. Nurse colleagues accommodated AOD affected nurses' behaviours in an effort to reduce risk to both patients and the affected nurses. The findings from this study suggest an established 'culture of permissibility' that unintentionally enables nurses to compromise the safety of patients when they work with a hangover or when they work while affected by their AOD use.

It is recommended AOD workforce education be provided to nurses and nursing students and organisational policies be developed that include zero tolerance for nurses working with a hangover, or otherwise affected by AOD use. These processes would discourage the continuation of the culture of permissibility, reduce health service provider organisations' risk, and promote safe patient care.

CHARLES DARWIN UNIVERSITY

## **Candidate Declaration**

I certify that this thesis, entitled:

*New Zealand Nurses' Alcohol and Other Drug Use*

is submitted for the degree of Doctor of Philosophy is the result of my own work and that where reference is made to the work of others, due acknowledgment is given.

I also certify that any material in this thesis that has been accepted for a degree or diploma by any university or institution is identified in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying online via the University's Open Access Repository eSpace.

Signed:

Name:

Date:

# CHAPTER 1

## INTRODUCTION

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This research explores Registered Nurses' (RNs)<sup>1 2</sup> use of alcohol and other drugs (AODs) across the continuum of use and the subsequent impact on patient care. Alcohol use is widely accepted in New Zealand (NZ) society. It is used to celebrate, commiserate and socialize, as a rite of passage and to foster a sense of camaraderie. Other drug use has become increasingly acceptable in some sectors of NZ society (Cagney, 2006). The aim of this research is to estimate the prevalence of AOD use by nurses, explore the implications for altered work performance and the delivery of safe patient care. This chapter provides a context for the study, explains the concepts used and the structure of the thesis.

From personal experience in earlier roles as a RN and nurse manager, it was accepted practice for nurses to work with a hangover or be otherwise affected by their alcohol use, and to a lesser degree their recreational drug use. The acceptance of this behavior by colleagues and managers has led to a shared belief among nurses that working while compromised by their AOD use will be tolerated. Anecdotally, nurses have accommodated their AOD affected colleagues by using humor and normalizing their work behavior. Research that has focused on nurses' behavior at the dependence end of the continuum shows that their colleagues assume extra responsibilities, carry heavier workloads, and tolerate poor communication skills that

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<sup>1</sup> Hereafter the term RN and nurses will be used interchangeably throughout the text to indicate active Registered Nurses.

<sup>2</sup> Registered nurses have successfully completed a three year Bachelor of Nursing degree from a program accredited by the NCNZ. Registered nurses are accountable for ensuring all health services they provide are consistent with their education and assessed competence, meet legislative requirements and are supported by appropriate standards ...” (NCNZ, p. 3)

alter workplace dynamics and the delivery of patient care. Nurses have also tolerated their colleagues' workplace absences such as extended breaks and absenteeism as a result of their AOD use (Haack & Yocom, 2002; Lillibridge, Cox, & Cross, 2002; Sullivan, Bissell, & Leffler, 1990).

There were no prior studies investigating the prevalence of NZ nurses' AOD use. In consultation with nurse leaders and experts in the field a decision was made to explore this topic because of its importance for the safety of patients.

Earlier international research in this area focused on addiction in nursing (Hutchinson, 1986, 1987; Sullivan, 1987a, 1987b). Subsequent research in this area has focused on: The prevalence and patterns of AOD use in the US, France, Taiwan and the United Kingdom (UK) (Blazer & Mansfield, 1995; Bugle, 1996; Callaghan, 1995; Callaghan, Fun, & Yee, 1997; Collins, Gollnisch, & Morsheimer, 1999; Finke, Hickman, & Miller, 1993; Hughes, Howard, & Henry, 2002; Kenna & Wood, 2004b; Niedhammer, Lert, & Marne, 1995; Plant, Plant, & Foster, 1992; H. Smith, Mangelsdorf, Louderbough, & Piland, 1989; Trinkoff, Eaton, & Anthony, 1991; Trinkoff, Zhou, & Storr, 1999; Von Burg & Forman, 1992; Yang, Yang, & Pan, 2001); specialty and access issues in the US and the UK (Plant et al., 1992; Storr, Trinkoff, & Hughes, 2000; Trinkoff & Storr, 1994, 1998a; Trinkoff, Storr, & Wall, 1999); factors that contribute to nurses' use of AODs in Hungary, the US and the UK (Bissell & Jones, 1981; Hutchinson, 1986; Kenna & Lewis, 2008; Lillibridge et al., 2002; Piko, 1999; Plant et al., 1992; Storr, Trinkoff, & Anthony, 1999; Sullivan, 1987a, 1987b; Trinkoff, Storr, & Soeken, 2000; West, 2002); early recognition, management, and policy development in the US (Cannon & Brown, 1988; Certo-Guinan & Waite, 1991; Damrosch, 1993; Hendrix, Sabritt, McDaniel, & Field, 1987; Hood & Duphorne, 1995; G. Smith, 1992; Swenson & Foster, 1993; Torkelson,

Anderson, & McDaniel, 1996); and attitudes toward nurses impaired by their AOD use in the US (Beckstead, 2002, 2003, 2005a, 2005b; Cannon & Brown, 1988; Cerrato, 1988; Certo-Guinan & Waite, 1991; Hendrix et al., 1987; Hood & Duphorne, 1995; Howard & Chung, 2000; Hughes, 1995; King III, 2001; King III & Hermodson, 2000; Lachicotte & Alexander, 1990; G. Smith, 1992). There were no recent studies reporting nurses' use of AODs across the continuum of use and there have been none since this research was undertaken.

AOD use-related harms to nurses occurring across the continuum of use (Mangione et al., 1999; Ryder, Salmon, & Walker, 2001), include problems related to intoxication, regular use and dependence (Thorley as cited in Plant, 1982). The acute effects of AOD intoxication and a hangover from AOD use are the most common manifestations of AOD use and cause the greatest concern (Allsop & Pidd, 2001; Frone, 2006). For nurses, problems associated with the effects of AOD intoxication and hangover, prolonged regular use, and dependence may compromise their ability to provide safe patient care.

As discussed in the following chapter the majority of the NZ adult population (over 15 years) reported consuming alcohol in the past year. The most recent report has shown a steady decline in the prevalence of alcohol consumption between 2006/07 (84%) and 2014/15 (80%) (Ministry of Health, 2015a).

Hazardous drinking (an AUDIT score of 8 or more) among adults who reported past year alcohol use has returned to levels similar to those reported in 2006/07 (22%). Despite there being a decrease in the percentage of young adults between 18 and 24 years (males 25% and females 11%) who reported a decrease in hazardous alcohol use, this group were still more likely than any other age band to

consume alcohol in this way (males 43% and females 24%) (Ministry of Health, 2015a).

Thirty two percent of Māori adults and 23% Pacific adults reported hazardous drinking patterns, with over half of Pacific males (52%) reporting this pattern of drinking. Asian adults (5%) were less likely to report hazardous alcohol use. The highest rates of weekly or more binge drinking (six or more standard drinks on one drinking occasion) was reported by young adults (19%) (Ministry of Health, 2015b).

Overall, the reported past year use of amphetamines for adults declined between 2003 (3%) and 2015/16 (1%). Younger adults (25 to 30 years), males (males 2% and females 1%) and Māori (three times more likely than non-Māori) were more likely to report amphetamine use (Ministry of Health, 2016).

Eleven percent of adults (15 years plus) reported past year cannabis use (Ministry of Health, 2015c). This finding is similar to reports for adults (13 years plus) in the early 2000's. Young adults (15 to 24 years), males and Māori adults, continued to report the highest rates of cannabis use (Ministry of Health, 2007b, 2010). The reported past year use of opiates, stimulants and benzodiazepines for the NZ adult population continues to be reported at <1% (Ministry of Health, 2010). The findings from this study are compared with AOD use in the NZ general population (de Bonnaire, McMillen, & Kalafatellis, 2004; Field & Casswell, 1999, 2001; Fryer, Jones, & Kalafatellis, 2011; Guiney, Newcomb, & Walton, 2014; Habgood, Casswell, Pledger, & Bhatta, 2001; Ministry of Health, 2004, 2007a, 2007b, 2008, 2009, 2010, 2013, 2015a, 2015b, 2015c; Palmer, Fryer, & Kalafatellis, 2007a, 2007b, 2009; Palmer & Kalafatellis, 2009; Research New Zealand, 2014; Wilkins &

Sweetsur, 2008) and the Māori adult population (Bramley, Broad, Harris, Papaarangi, & Jackson, 2003; Dacey & Moewaka Barnes, 2000).

A mixed methods design was used for this study. A questionnaire was designed to collect information on the prevalence of nurses' AOD use, nurses' altered work performance, the access and diversion of medicines from the workplace, and management issues resulting from nurses' use of AODs. In 2005 a randomized sample of active RNs<sup>3</sup> from the Nursing Council of New Zealand (NCNZ) data base was surveyed. This was followed by focus group and individual interviews with nurses, managers of nurses and Directors of Nursing.

The continuum of use, which as mentioned above is the focus for this research, has been included in recent changes made to the diagnostic criteria for substance use disorders in the *Diagnostic and statistical manual of mental disorders* (5<sup>th</sup> ed.) (American Psychiatric Association, 2013).

Findings from this survey estimating the prevalence of nurses' AOD use are compared with international studies of nurses and findings for the NZ general population. The focus group and individual interview data provide a greater depth of understanding to the findings from the survey and the implications of AOD use for altered work performance and the safety of patients.

This study was undertaken in 2005 and there have been some changes in alcohol consumption for the general population since that time (Ministry of Health, 2009, 2010, 2015b). It is anticipated, that changes will be reflected in nurses' AOD use as they are a sub-group of the general population. These changes will be discussed further in Chapter Six. International research in this area has found that nurses' use of AODs is less than (Kenna & Wood, 2004b) or similar to (Blazer &

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<sup>3</sup> Nurses in full-time or part-time employment as RNs.

Mansfield, 1995; Collins et al., 1999; Hughes et al., 2002; Plant et al., 1992; Trinkoff et al., 1991; Trinkoff, Zhou, et al., 1999) the general population, suggesting the findings from this study are still relevant.

Nurses are guided by NZNC's Professional Code of Conduct (2012) and competencies that outline "the behavior or conduct that nurses are expected to uphold" (NCNZ, 2012, p. 2). Principle 8 of The Code outlines the expectation that nurses maintain public trust and confidence in the profession. Expectations for nurses' behavior related to their responsible use of AODs are clearly outlined in Standard 8.6: "Your practice must not be compromised by the use of alcohol or drugs" (NCNZ, 2012, p. 38). Furthermore, standard 8.5 outlines nurses' responsibility when they are concerned about colleagues' competence: "Report to your employer or regulatory authority if you believe the health, competence or conduct of a colleague will compromise public safety or bring the profession into disrepute" (NCNZ, 2012, p. 38). Nurses are accountable for their practice under the Health Practitioners Competence Assurance (HPCA) Act (2003). Nurses in NZ are required to be registered with their professional body, the Nursing Council of New Zealand (NCNZ). The Council is responsible for public safety and regulation of the nursing workforce (NCNZ, 2012).

It is important therefore that we, with a health promotion focus, develop an understanding of the prevalence of nurses' AOD use and the ways nurses, their colleagues and managers recognize their responsibilities and accountabilities under the HPCA Act (2003) for the provision of safe patient care.

## 1.1 Structure of thesis

**Chapter One.** This chapter has introduced and provided a context for the study. It has given an overview of the methods employed to estimate the prevalence of nurses' AOD use and explore the implications of nurses' AOD use for altered work performance and the delivery of safe patient care.

**Chapter Two.** Chapter Two critically reviews literature relevant to this study including international studies of nurses and national prevalence studies.

**Chapter Three.** Chapter Three outlines the methods used to collect and analyse the data and discusses the development of the questionnaire.

**Chapter Four.** Chapter Four presents the findings from the survey: The prevalence of nurses' alcohol and other drug use, altered work performance, the access and diversion of medications, and management issues.

**Chapter Five.** Chapter Five presents the findings from the focus groups and individual interviews. The findings are presented in relation to altered work performance, enabling behaviors and management issues. They are explored from individual, collegial, nurse manager and Director of Nursing perspectives.

**Chapter Six.** Chapter Six discusses the research's contributions to knowledge and compares the significant findings with international studies of nurses and findings for the general population. Supporting interview data provides a depth of understanding to these findings. The 'Culture of Permissibility' is introduced as a way of understanding why nurses', colleagues, nurse managers and Directors of Nursing accept nurses working with a hangover or when otherwise affected by their AOD use. The strengths and limitations of the approach used and the implications of the findings for policy and practice are discussed, and recommendations are made for policy, practice and future research.

**Chapter Seven.** Chapter Seven presents an overview of this study and highlights recommendations for policy, practice, education and future research.

## CHAPTER 2

### LITERATURE REVIEW

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This chapter critically reviews available national and international literature from 1995 reporting nurses' use of AODs. It also reviews national studies reporting the prevalence of AOD use in the general population in New Zealand.

The databases accessed for this review include Psychlit, Medline, Medsearch, Cinhal, EBSCO Host and Google Scholar. The key search terms used were: impaired nurse; impaired nursing practice; impaired professionals; substance impaired professionals; substance abuse by nurses; substance misuse by nurses; AOD use by nurses; addicted nurses; and addicted health professionals. In addition, reports from the NZ Ministry of Health (MOH), the Alcohol Advisory Council of New Zealand (ALAC), the Alcohol and Public Health Research Unit (APHRU), Social and Health Outcomes Research, Evaluation (SHORE), and the Health Research Council (HRC) were accessed to review the NZ national data.

An increasing awareness of nurses' use of AODs and impaired nursing practice in the 1980s generated a number of studies from the United States (US), the United Kingdom (UK), France, Hong Kong and Taiwan. More recently there have been studies published from Iran, Australia, Canada and Norway.

The research foci for nurses' use of AODs to date includes estimating the prevalence of nurses' AOD use (Blazer & Mansfield, 1995; Callaghan et al., 1997; Collins et al., 1999; Hughes et al., 2002; Kenna & Wood, 2004b; Mohammadi, Dadkhah, & Mozafariand, 2008; Schluter, Turner, & Benefer, 2012; D. Smith, 2007; Yang et al., 2001); differences in AOD use between nursing specialties (Collins et al., 1999; Mohammadi et al., 2008; Trinkoff & Storr, 1998a); factors that contribute

to nurses' AOD use (Collins et al., 1999; Kenna & Lewis, 2008; Kenna & Wood, 2004a; Niedhammer et al., 1995; Piko, 1999; Schluter et al., 2012; Storr et al., 1999; Storr et al., 2000; Trinkoff & Storr, 1998b; Trinkoff et al., 2000; Yang et al., 2001); abuse and addiction in nursing (Bettinardi-Angres & Bologeorges, 2011; Bugle, 1996; Cares, Pace, Denious, & Crane, 2015; Kunyk, 2015; Lillibridge et al., 2002; West, 2002); the availability and efficacy of treatment programs (Bettinardi-Angres & Bologeorges, 2011; J. Brown, Trinkoff, & Smith, 2003; Cares et al., 2015; L. M. Cook, 2013; Grower & Floyd, 1998; Hood & Duphorne, 1995; King III & Hermodson, 2000; Kunyk, 2015); and management issues (Baldisseri, 2007; Beckstead, 2005a; J. Brown et al., 2003; Bugle, 1996; L. M. Cook, 2013; Grower & Floyd, 1998; Haack & Yocom, 2002; Hood & Duphorne, 1995; Hughes, 1995; Perry & Rimler, 1995; Shaw, McGovern, Angres, & Rawal, 2004; Torkelson et al., 1996).

While interest in this area is ongoing, the majority of information published continues to be opinion or commentary in nature. More recent research literature has focused on impaired nurses, abuse and dependence, and treatment evaluation. There is limited research that specifically explores the prevalence of AOD use across the continuum of use and the implications for the delivery of safe patient care and nurses' wellbeing.

This chapter is organised under the following subheadings: Nurses' use of alcohol and other drugs (New Zealand and international) and New Zealand general population. The national and international nursing literature is discussed using prevalence, nursing specialty and AOD use, contributing factors, addiction and nurses and management issues. The national literature is discussed using the following headings: Alcohol, and other drug use.

## **2.1 Nurses' use of alcohol and other drugs**

### **2.1.1 New Zealand**

In a recent study, data were analysed from the baseline wave of the Nurses and Midwives cohort study (NMeS) (Schluter et al., 2012). This was a longitudinal cross-sectional electronic survey that explored factors associated with workforce and health outcomes for Australian and New Zealand nurses (NZ nurses n=867) and midwives. The only finding relevant to this study was the relationship between long working hours and harmful daily alcohol consumption (Schluter et al., 2012).

### **2.1.2 International**

The majority of research published in this area originates from the US and the UK with a focus on AOD abuse and addiction. There is a paucity of international research based literature addressing AOD use across the continuum of use and the implications of AOD use for safe patient care. The majority of publications are commentary in nature (Baldisseri, 2007; Dunn, 2005; Griffith, 1999; Maher-Brisen, 2007; Monroe & Kenaga, 2011; Ramer, 2008; West, 2002). Published research from 1995 focused on AOD abuse and addiction (Bettinardi-Angres & Bologeorges, 2011; J. Brown et al., 2003; Bugle, 1996; Cares et al., 2015; Haack & Yocom, 2002; Hood & Duphorne, 1995; King III & Hermodson, 2000; Kunyk, 2015; Lillibridge et al., 2002; Perry & Rimler, 1995; Torkelson et al., 1996; West, 2002) and the evaluation of peer assistance and treatment programs (J. Brown et al., 2003; Hood & Duphorne, 1995; King III, 2001) available to nurses. A smaller number of publications reported the prevalence and patterns of AOD use by nurses (Blazer & Mansfield, 1995; Callaghan, 1995; Callaghan et al., 1997; Collins et al., 1999; Hughes et al., 2002; Kenna & Wood, 2004b; D. Smith, 2007; Yang et al., 2001), the differences in AOD use between specialties (Collins et al., 1999; Mohammadi et al., 2008; Trinkoff &

Storr, 1998a), factors that contribute to nurses AOD use (Collins et al., 1999; Kenna & Lewis, 2008; Kenna & Wood, 2004b; Niedhammer et al., 1995; Piko, 1999; Schluter et al., 2012; Storr et al., 1999; Trinkoff & Storr, 1998b; Trinkoff et al., 2000; Trinkoff, Storr, et al., 1999; West, 2002; Yang et al., 2001), and management issues (Beckstead, 2005a; Bettinardi-Angres & Bologeorges, 2011; J. Brown et al., 2003; Bugle, 1996; L. Cook, 2013; L. M. Cook, 2013; Grower & Floyd, 1998; Haack & Yocom, 2002; Hood & Duphorne, 1995; Hughes, 1995; King III, 2001; King III & Hermodson, 2000; Perry & Rimler, 1995; Shaw et al., 2004; Torkelson et al., 1996). These studies are identified below.

### **Prevalence**

From the mid-1990s publications reporting the prevalence of AOD use and misuse by nurses originated from the US (Blazer & Mansfield, 1995; Collins et al., 1999; Hughes et al., 2002; Kenna & Wood, 2004b), the UK (Callaghan, 1995), Taiwan (Yang et al., 2001), Hong Kong (Callaghan et al., 1997), and more recently Australia (D. Smith, 2007) Iran (Mohammadi et al., 2008) and New Zealand and Australia (Schluter et al., 2012). The majority of studies reported that nurses' use of alcohol was similar to (Blazer & Mansfield, 1995; Callaghan et al., 1997; Hughes et al., 2002; D. Smith, 2007; Trinkoff, Zhou, et al., 1999) or less than (Kenna & Wood, 2004b) reports for the general population.

Although nurses were more likely to report using cannabis than any other drug use (Kenna & Wood, 2004; Collins et al., 1999), overall, estimates of nurses' illicit drug use was similar to reports for the general population in the US (Blazer & Mansfield, 1995; Hughes et al., 2002; Trinkoff & Storr, 1998a). In contrast, Neidhammer (1995) found nurses' use of tranquilisers was greater than reports for the general population in France.

AOD use among nurses across the continuum of use has been difficult to estimate and there remains a paucity of prevalence studies using representative samples of nurses. Earlier estimates for nurses with AOD use problems were as high as 6% to 8% (American Nurses Association, 1984). These estimates are similar to the 6.4% of nurses who reported substance use problems using capture-recapture questioning in the US (Trinkoff, Zhou, et al., 1999).

**Nursing specialty and AOD use.** A small number of studies have identified nurses' use of AODs differs between nursing specialties. Studies have shown that nurses working in emergency departments (Trinkoff & Storr, 1998a) and critical care (Collins et al., 1999) were more likely to report illicit drug use and prescription type drug use (Mohammadi et al., 2008). Trinkoff (1998) found nurses working in oncology and administration were more likely to report consuming larger amounts of alcohol.

**Contributing factors.** A number of studies have identified factors that contribute to nurses' use and/or misuse of AODs. These include altered physical health and/or poor mental health (Trinkoff et al., 2000; Yang et al., 2001); stress resulting from physically and psychologically demanding work (Storr et al., 1999; Trinkoff et al., 2000; Yang et al., 2001); working in a hospital environment (Collins et al., 1999); ease of access to medications in the workplace (Kenna & Lewis, 2008; Kenna & Wood, 2004b; Storr et al., 1999; Trinkoff et al., 2000; Trinkoff, Storr, et al., 1999; Yang et al., 2001); nursing specialty (Collins et al., 1999; Piko, 1999); pharmacological optimism (Kenna & Lewis, 2008; Trinkoff et al., 2000; Trinkoff, Storr, et al., 1999; Yang et al., 2001); working night shifts (Niedhammer et al., 1995; Trinkoff & Storr, 1998b), rotating shifts and weekends (Trinkoff & Storr, 1998b); and long hours of work (Schluter et al., 2012; Trinkoff & Storr, 1998b).

**Addiction and nurses.** The majority of studies in this area have reported findings from a small sample of nurses who have been disciplined or are in treatment and/or recovery programs. Studies reporting addiction in nurses and impaired nursing practice have explored the experience of addicted nurses (Bugle, 1996; Lillibridge et al., 2002); identified risk factors leading to addiction in nursing (West, 2002); evaluated the efficacy of peer assistance and treatment programs (J. Brown et al., 2003; Hood & Duphorne, 1995; King III & Hermodson, 2000); focused on the early identification, management and re-entry to work for recovering nurses (J. Brown et al., 2003; Bugle, 1996; Haack & Yocom, 2002; Perry & Rimler, 1995; Torkelson et al., 1996); and examined the risk of relapse, prevention strategies and policy development (Perry & Rimler, 1995). More recent studies from the US (Bettinardi-Angres & Bologeorges, 2011; Cares et al., 2015) and Canada (Kunyk, 2015) have focused on the prevalence of AOD abuse and addiction in nursing, access to support for nurses who have an addiction, and attitudes of nurses towards their addicted colleagues.

**Management issues.** Studies investigating the management of nurses whose practice is impaired have focused on AOD abuse and addiction issues and have been generated from the US. Senior nurses advocated a supportive style of management towards AOD impaired nurses (Hughes, 1995). This was co-related with their level of education, a positive attitude towards their colleagues with an addiction, the availability of employee assistance programs (EAPs), written policies within the organisation, and working in a larger hospital (Hughes, 1995). Research from the 1990s shows nurses who had an addiction were reported to their professional bodies and legal processes were initiated when medications were diverted from the workplace for personal use (Hood & Duphorne, 1995; Hughes, 1995). When

comparing nurses' and doctors' use of treatment programs and outcomes from treatment, Shaw (2004) recommended managers access peer assistance support for affected nurses to promote their optimum recovery and successful re-entry into the workforce.

A number of studies have reported difficulties for peers when addressing colleagues' unethical or unsafe nursing practice resulting from their AOD use. The nurses' responses when observing unethical behaviours or clinical incompetence was found to be influenced by their attitude towards impaired nurses (Beckstead, 2005a; King III, 2001); their critical thinking abilities (Beckstead, 2005a; King III, 2001); their confidence in communicating with an affected colleague (Grower & Floyd, 1998); the work culture (Bettinardi-Angres & Bologeorges, 2011; L. M. Cook, 2013; Hood & Duphorne, 1995; King III & Hermodson, 2000); the intent and severity of the incident that occurred (King III, 2001); the reporting nurses' knowledge of peer assistance programs, organisational policies and re-entry to work programs (Bettinardi-Angres & Bologeorges, 2011; L. M. Cook, 2013; Grower & Floyd, 1998; Hood & Duphorne, 1995; King III & Hermodson, 2000); and reporting nurses' level of education (Bettinardi-Angres & Bologeorges, 2011; Grower & Floyd, 1998).

## **2.2 New Zealand general population**

In New Zealand, national surveys of AOD use in the general population have been undertaken by the Ministry of Health (MOH), the Alcohol and Liquor Advisory Committee (ALAC), Research New Zealand, Social and Health Outcomes Research Evaluation (SHORE), and the Health Promotion Agency (HPA). ALAC monitors adult and youth drinking attitudes and behaviours and the 2008/09 year saw a change from quarterly monitoring of attitudes and drinking behaviours to annual monitoring.

In addition, the age bands and questions for some prevalence studies have changed since 2007 to reflect changes in the law and societal attitudes towards AOD use.

When comparing relevant studies for the NZ general population, it is important to note that measures of a standard drink (10g – 15g pure alcohol), age bands and time frames differ.

### **2.2.1 Alcohol**

Habgood, Casswell, Pledger and Bhatta (2001) compared findings from the 1995 (n=4,232) and 2000 (n=5,113) *Drinking in New Zealand* national surveys. Data were collected from a nationally representative sample of those between 14 and 65 years. There was no significant difference in the number of drinkers when comparing the 1995 (85%) and 2000 (87%) data. There was a significant difference, however, in the overall annual volume of consumption by women. In 2000, 34% of women consumed alcohol, an increase from 30% in 1995, and their intake increased from seven to nine standard drinks per week. There was no change in the overall volume of alcohol consumed by men.

When comparing their heavier drinking episodes between 1995 and 2000, the percentage of alcohol consumed on heavier drinking occasions increased from 42% to 50%. Problems due to their drinking decreased for men and increased for women in this period. Of interest for this study is the reported past year incidence of feeling hungover, the most often reported consequence of drinking. This decreased for men and increased for women between 1995 and 2000. The reported incidence of the effects of alcohol while at work, study or doing household duties, decreased for men and increased for women. Reported absence from work was similar for both men and women.

*The Way We Drink (2004)* (de Bonnaire et al., 2004), commissioned by ALAC, reported current attitudes towards alcohol and behaviours from a national survey undertaken in 2003. To ensure a greater precision of estimates, Māori and Pacific adults were oversampled. The findings were reported in two segments, young people aged 12 to 17 years (n=626) and adults 18 years and over (n=1,157). Findings for the adult segment were relevant to this study. Eighty-one percent of adults reported they were current drinkers. Daily alcohol consumption was reported by 16%, 26% reported consuming alcohol two to three times per week, 22% once a week, 10% once every two weeks and 27% less frequently. Adults reported they limited their alcohol intake so it did not affect their work (72%) or they did not wake with a hangover (70%) following their drinking episodes.

*The ALAC Alcohol Monitor - Adults and Youth*, annual survey reported findings for adults' (18 plus years) drinking behaviours in the 2005/06, 2006/07, 2007/08, 2008/09, 2009/10 periods (Fryer et al., 2011; Palmer et al., 2007a, 2007b, 2009; Palmer & Kalafatellis, 2009). They found a significant increase in the number of adults who reported consuming alcohol between 2005/06 (85%) and 2006/07 (88%) and a significant decrease between 2008/09 (87%) and 2009/10 (84%). Comparisons across the years shows, when compared to non-drinkers, those who consumed alcohol were significantly more likely to be younger and identify as New Zealand European. Pacific adults were significantly more likely to be non-drinkers. Males and females were equally likely to consume alcohol. The number of adults who reported binge drinking (seven or more standard drinks on one drinking session) remained constant between the studies. When compared with moderate drinkers, binge drinkers were more likely to be male, younger and Māori or Pacific adults.

*A Portrait of Health* (Ministry of Health, 2004) reported findings for alcohol use from the *New Zealand Health Survey 2002/03*. Data were collected from people 15 years and over (n=12,929) with oversampling of Māori, Pacific and Asian groups. Eighty-four percent reported consuming alcohol in the past year with more males (89%) than females (80%) consuming alcohol. Subsequent surveys have shown that past year use of alcohol has remained stable for the 2006/07 period (84%) (Ministry of Health, 2008, 2009). More recent studies have found a decrease in the prevalence of alcohol use for the general population (80%) (Ministry of Health, 2013, 2015a, 2015b).

More New Zealand and other European and fewer Pacific and Asian people consumed alcohol when compared with other ethnic groups (Ministry of Health, 2004, 2009, 2015a, 2015b). The prevalence of alcohol use was steady from 25 to 45 years of age, thereafter use declined (Ministry of Health, 2004, 2008, 2015a).

Younger adults reported consuming alcohol less frequently and older adults reported consuming alcohol more frequently (Ministry of Health, 2004, 2008, 2015a, 2015b). Males consumed alcohol more frequently than females (Ministry of Health 2004, 2009, 2015a). Māori adults consumed alcohol less frequently than all other groups (Ministry of Health, 2004) and, more recently, NZ European and other European adults reported consuming alcohol more frequently than other ethnic groups (Ministry of Health, 2015a).

Dacey and Moewaka Barnes (2000) reported past year AOD use for Māori adults between 15 and 45 years (n=1,593). Eighty-three percent reported alcohol use, with 46% using alcohol weekly. Males (55%) were significantly more likely than females (37%) to report drinking weekly. These findings were similar to more

recent reports for the general population (Ministry of Health, 2004, 2008, 2013, 2015a).

Differences in Māori and non-Māori patterns of drinking were analysed from general population surveys (Bramley et al., 2003). The authors found that Māori adults (18 to 75 years) consumed alcohol less frequently but in larger volumes than non-Māori. These findings are similar to reports for the general population (Ministry of Health, 2004, 2008, 2013, 2015a, 2015b).

Huakau et al. (2005) used the data from the *National Alcohol Survey* (2000) to compare alcohol consumption for Pacific peoples (n=1,103) aged between 13 and 65 years with the general population. They found that although fewer Pacific people (57%) consumed alcohol, they consumed larger volumes on a typical drinking occasion than the general population. This finding is similar to other reports for the general population (Ministry of Health, 2004, 2008, 2013, 2015a).

Huckle, Yeh, Lin and Jensen (2013) in their more recent review *Trends in alcohol consumption and alcohol-related harms among females in New Zealand*, compared national studies of past year alcohol use and alcohol related harms of females between 16 and 65 years from 1995 to 2000. They found that the frequency and volume of alcohol consumed was less for females than males. Also, younger females consumed alcohol in greater volumes but less frequently than older females. Māori and Pacific females reported drinking less frequently but in larger volumes when compared with non-Māori/Pacific females.

Larger quantities of alcohol were consumed by females across all age groups in 2000 compared to 1995. Males and females between 20 and 24 and 30 and 39 years reported an increase in heavier drinking (five-plus standard drinks) in 2000. In

the same period females between 25 and 39 years reported consuming alcohol in similar quantities to males.

Huckle, You and Casswell (2011) reported trends in the volume of drinking for the NZ population in three nationally representative household surveys in 1995, 2000 and 2004. They reported an increase in the volume of alcohol consumed by men and women across most age groups between 1995 and 2000. The age of purchasing alcohol was lowered in 1999, alcohol outlets were increased, Ready to Drink mixes (RTDs) were introduced to the market, and aggressive marketing of alcohol began. Between 2000 and 2004 alcohol consumption remained stable. Heavier drinking (five or more drinks per drinking occasion) increased for both men (40 to 65 years) and women (20 to 24 years and 30 to 39 years) between 1995 and 2000.

A later publication, *Alcohol Use in New Zealand* (Ministry of Health, 2007), reported alcohol use from the 2004 *Health Behaviours Survey - Alcohol Use* (Ministry of Health, 2007). Data were gathered from people between 12 and 65 years of age (n=9,847). Eighty-one percent reported consuming alcohol in the last 12 months and 15% reported heavy drinking episodes. Males (20%) were significantly more likely than females (11%) and Māori (21%) were significantly more likely than non-Māori (15%) to drink heavily. Of interest for this study, 38% of those who consumed alcohol reported feeling the effects of their alcohol use after drinking the night before, at least once in the last 12 months. Fifteen percent reported they felt the effects of alcohol at work/study or while doing household duties.

Wilkins and Sweetsur (2008) compared drug use (AOD) for the general population (15 to 45 years) from the national household surveys of drug use in 1998 (n=5,475), 2001 (n=5,504), 2003 (n=3,042) and 2006 (n=1,902). They reported an

increase in the prevalence of alcohol use from 2003 (82%) to 2006 (85%). Overall, the use of alcohol had increased between 1998 and 2006 with an increase in the number of drinkers reporting they were using 'more' alcohol and a decrease in those reporting they were using 'less'.

The *New Zealand Alcohol and Drug Use Survey (NZADUS)* (Ministry of Health, 2009), reported findings for past year and life time use of alcohol, alcohol related harm, and health seeking behaviours of adults between 16 and 64 years (n=6,784) in 2007/08 for the general population. Eighty-five percent of adults reported consuming alcohol in the past year and 7% reported daily alcohol consumption. Large amounts of alcohol (six standard drinks for men and four standard drinks for women) were consumed by 62% of adults and 13% reported consuming large amounts on a weekly basis. Of interest for this study, the self-reported harm from alcohol use included absence from work or school (6%) and working while under the influence of alcohol (11%). Slightly more than 1% of adults reported that they had accessed help to reduce their alcohol consumption.

The NZADUS study found that while the trend of past year alcohol use in the general population remained constant, reported use for Māori and Pacific adults increased significantly from 1996/7. Past year alcohol use for both Māori men and women increased from 1996/7 and 2007/8. Twenty-five percent of Māori men and women engaged in heavier drinking episodes at least weekly. Sixty-one percent of Pacific adults reported they were less likely than other groups to consume alcohol. There was an increase in the amounts of alcohol consumed by both Pacific males and females between the 1996/7 and 2007/8 period. This finding is similar to other reports for the general population (Ministry of Health, 2004; 2008; 2013; 2015a).

In 2004, 17% of the NZ adult population reported hazardous patterns of alcohol use (an AUDIT score of eight or more). This increased to 21% in 2008, and there was a steady decline reported between 2013 (19%) and 2015 (15%). Initial findings from the 2014/15 survey showed an increase in hazardous drinking (18%) similar to that reported in 2013 (Ministry of Health, 2015b). The reported incidence of hazardous drinking decreased as age increased (Ministry of Health, 2004, 2008, 2013, 2015a). Younger adults (15 to 24 years) and males (Ministry of Health, 2004, 2008, 2013, 2015a, 2015b), Māori women (Ministry of Health, 2004), Māori (Ministry of Health, 2006, 2013, 2015a) and Pacific adults (Ministry of Health, 2013, 2015a, 2015b) were more likely to report hazardous drinking. Asian adults were least likely to report hazardous drinking (Ministry of Health, 2004, 2008, 2013, 2015a).

In 2015, 2% percent of adults reported drinking heavily (six standard drinks for men and four standard drinks for women). As age increased the reported episodes of heavy drinking decreased. Males were more likely than females to report drinking heavily. Māori adults were more likely than non-Māori and Asian adults were least likely to report heavy drinking (Ministry of Health, 2015a). Again, of interest to this study, 7% of the respondents reported working while under the influence of alcohol and 6% reported they were absent from work or school due to their alcohol use (Ministry of Health, 2015a).

The prevalence of past year alcohol use for the general population has remained relatively steady from the mid-1990s. Studies from 2013 however, have reported a decrease in alcohol consumption for the NZ adult population. Younger adults reported consuming alcohol in greater volumes and less frequently than older adults. As age increased, the frequency of alcohol use also increased, and the volume

of alcohol consumed decreased. Reported episodes of heavy drinking and hazardous alcohol use also decreased with age. Males reported consuming alcohol more frequently and in greater volumes than females. While the volume of alcohol consumed by males remained constant over time, there was a steady increase in the volume of alcohol consumed by women from the mid 1990's. The prevalence of alcohol use was highest for NZ Europeans when compared with other ethnic groups. Māori and Pacific adults reported consuming alcohol less frequently but in larger volumes than other ethnic groups. Asian people were least likely to report consuming alcohol. Of particular interest for this study, adults reported feeling hungover, feeling the effects of alcohol while at work, study or doing household duties, and absence from work as a result of their alcohol use.

### **2.2.2 Other drug use**

*The New Zealand Alcohol and Drug Use Survey (NZADUS) 2007/08*, (Ministry of Health, 2009) as mentioned above, reported past year recreational drug use for the general population. Nearly 15% of the population reported using cannabis, with 39% of those reporting weekly use and 54% reporting use at least monthly. Stimulant use was reported by almost 4%, <1% reported recreational prescription stimulant use and almost 3% reported using Ecstasy. Nearly 2% reported using sedatives and <1% reported recreational benzodiazepine use. Recreational opiate use, which included prescription pain killers and opiates, was reported by 1% of the general population. Findings relevant to this study include nearly 19% of the population reported working while under the influence of drugs (other than alcohol), 7% were absent from work or school as a result of their drug use and 7% reported their drug use affected their work, study or employment opportunities. Significantly higher past year drug use was reported by males between

18 and 24 years and those who identified as Māori and Other/European. Pacific and Asian people reported lower rates of drug use.

Dacey and Moewaka Barnes (2000) reported past year drug use for Māori between 15 and 45 years (n=1,593). Drug use was reported by 26%, 18% reported that they were current users and 4% reported heavy drug use. Ecstasy use was reported by 1% and 2% reported using tranquillisers.

Drug use trends of New Zealanders aged 15 to 45 years for 1998, 2001, 2003 and 2006 were analysed by Wilkins & Sweetsur (2008). They reported a decrease in cannabis use between 2006 and 2001 (18% vs 20%) and amphetamine use between 2006 and 2001 (5% vs 3%) and, an increase in the use of Ecstasy between 1998 and 2006 (2% vs 4%).

Overall, the prevalence of past year cannabis use for the general population had steadily declined from the early 2000's. The reported past year use of opiates, stimulants and benzodiazepines for adults was 1% or less. Younger adults, males, other European and Māori were more likely to report drug use. Of interest for this study, the most frequently reported consequences of drug use by NZ adults was working under the influence of drugs, absence from work or school and drug use that had affected work, study or employment opportunities.

### **2.3 Conclusion**

The majority of research on nurses' use of AODs originates from the US and UK with only one study being generated from Australasia. To date, the research focus has remained on AOD misuse, abuse, addiction and the evaluation of treatment and recovery programs. A small number of studies have estimated the prevalence of AOD use and misuse, nursing specialty and AOD use, factors that contribute to

nurses' use of AODs, and management issues. Very few studies have highlighted the implications of nurses' AOD use for patient safety. Since the 1980s there has been no research addressing the prevalence of nurses' AOD use across the continuum of use and the implications for providing safe patient care.

In conclusion, there are currently no New Zealand studies reporting the prevalence of nurses' AOD use across the continuum of use; the implications for safe patient care; nurses' access to and diversion of medicines; differences in AOD use between nursing specialties; and management issues that emerge when nurses' work performance is altered as a result of their AOD use. The following chapter will discuss the development of the questionnaire and the research design and methods used to estimate the prevalence of New Zealand nurses' AOD use and to explore the implications for altered work performance and the delivery of safe patient care.

## CHAPTER 3

### METHODS

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This chapter outlines the use of mixed methods as a research strategy for collecting and analysing data of NZ RNs' AOD use across the continuum of use, and explores the implications for altered work performance and the delivery of safe patient care. It details the development of the questionnaire used for this study, the sampling of the active RN workforce, the data analysis for both survey and interview data, and discusses the ethical considerations when researching the sensitive issue of AOD use by nurses.

There were no studies available reporting the prevalence of AOD use across the continuum of use for nurses in NZ. To gather information on this topic, a national survey estimating the prevalence of AOD use of nurses was a beginning point for gaining an understanding of the extent of RNs' use of AODs. Epistemologically I realized that this would not provide an in-depth understanding of the complexity of the issues that surround nurses' use of AODs and the associated implications for patient safety. To address the need for a greater depth of understanding of these issues, I used a qualitative research approach to gather information from RNs, managers of nurses and Directors of Nursing across metropolitan, regional and rural health care contexts.

Following the collection and analysis of the survey data with the collection and analysis of qualitative data from the interviews and focus groups, provided an opportunity to gain a deeper understanding of the survey findings. The individual interviews with nurses, and the focus group interviews with the nurse managers and

DONs provided an opportunity to discuss not only the survey results but also how AOD effected nurses are managed by peers and their employers.

Using mixed methods approaches provides broader, deeper and more useful information. Both the quantitative and qualitative approaches complement each other by making up for the short comings of each approach (Creswell, 2003).

The research questions were: (1) What is the prevalence of alcohol and other drug use of active registered nurses in New Zealand and (2) Does registered nurses' alcohol and other drug use have implications for altered work performance and the delivery of safe patient care? Altered work performance is defined as changes in cognitive (Frone, 2006; Percival, de Crespigny, & Hale, 1996), physical and social skills (Allsop & Pidd, 2001; Frone, 2006) that directly affect a nurse's ability to provide safe patient care and work effectively in the health care context (Allsop & Pidd, 2001; Frone, 2006; Percival et al., 1996).

The data for this study were gathered in two stages. Stage one involved gathering data using a questionnaire developed specifically for this study following consultation with experts in the field. The survey offered a mixed mode response option which included a postal questionnaire and an opportunity to complete and submit the questionnaire online. The questionnaire aimed to estimate the prevalence of AOD use of nurses; examine the implications of nurses' AOD use for altered work performance and safe patient care; estimate access to and diversion of medicines; and identify issues for management.

At the time this study was undertaken, there were no studies available that estimated the prevalence of NZ nurses' AOD use and explored the implications for altered work performance and the delivery of safe patient care.

In stage two, focus groups and individual interviews were undertaken with nurses, managers of nurses and Directors of Nursing. Following communication with Allsop, an Australian researcher and author in this area (Allsop, Phillips, & Calogero, 2001), the focus group and individual interviews were facilitated to gain a greater depth of understanding of the survey results (Kitzinger, 1995; Kitzinger & Barbour, 1999; Morgan, 1996).

### **3.1 Stage One - Survey**

As there was no existing evidence available of NZ nurses' AOD use, a survey was undertaken to estimate the prevalence. The survey aimed to gather a broad range of relevant, self-reported data from a large number of nurses throughout NZ to answer the research questions (Polit & Beck, 2004). Surveys have been an effective method of collecting AOD use data for the NZ general population (Bramley et al., 2003; Dacey & Moewaka Barnes, 2000; de Bonnaire et al., 2004; Field & Casswell, 1999, 2001; Habgood et al., 2001; Huakau et al., 2005; Ministry of Health, 2004) and have been used for international nursing populations in the US (Blazer & Mansfield, 1995; Collins et al., 1999; Hood & Duphorne, 1995), UK (Callaghan, 1995), Taiwan (Yang et al., 2001), and Hong Kong (Callaghan et al., 1997). To encourage participation it was decided to offer a mixed mode response option using postal questionnaires and an online response option for the self-administered questionnaire (Dillman, 2000; Johnson & Fendrich, 2005). The following section will discuss in detail the development of the questionnaire used for this study (Appendix A).

### 3.1.1 Questionnaire development

Following an extensive literature search and discussions with clinical and academic experts in the field, a questionnaire was developed to gather a broad range of data estimating the prevalence of nurses' AOD use across the continuum of use and to explore the implications for altered work performance, and the delivery of safe patient care.

The questionnaire was four pages in length, it included 52 items and an open ended question asking for further comments. It gathered self-reported information from nurses on their last 12 months use of alcohol, cannabis, opiates, stimulants and benzodiazepines. It included questions related to the impact on patient care when working with a hangover from AOD use, or while affected by AOD use; absence from the workplace; access to and diversion of medicines; issues for management; factors that may contribute to the nurses' AOD use; and general demographic information.

The following section discusses the development of the questionnaire. The discussion includes sensitive data collection; the reliability and validity of self-report; the use of conjoint questions; the use of AUDIT C and standard drink measures to collect alcohol consumption data; the collection of other drug use data; access to and diversion of medicines from the workplace; the implications of altered work performance for patient care; and management issues.

**Sensitive data collection.** Asking nurses to self-report their AOD use is a sensitive issue. In addition to the issues of sensitivity reported for the general population (Harrison, 1995; Tourangeau & Yan, 2007), nurses may have additional concerns. They may be fearful of accurately reporting embarrassing, unsafe, illegal and professionally compromising behaviours that have the potential to threaten their

nursing registration, and employment opportunities (Collins et al., 1999; Tourangeau & Yan, 2007; Trinkoff, Zhou, et al., 1999). In an effort to ‘soften’ any perceived personal threat and to enhance an accurate response to sensitive questions, the nurse respondents were asked to report their observation of their colleagues’ behaviour before responding to questions about their own behaviour (Dillman, 2000; Tourangeau & Smith, 1996; Tourangeau & Yan, 2007). This included questions about the diversion of medicines (as this is illegal) and management issues. This study focused solely on nurses’ use of AODs in contrast to other studies that had embedded questions about nurses’ AOD use in a general questionnaire (Callaghan, 1995; Callaghan et al., 1997; Trinkoff & Storr, 1997).

As mentioned above a mixed mode data collection strategy using pencil and paper and an online response option was employed to increase the nurses’ willingness to report sensitive information (Tourangeau & Smith, 1996; Trinkoff & Storr, 1997). This will be discussed in greater depth below. It was important to guarantee anonymity and confidentiality of the information gathered to promote an accurate and honest response (Singer, Von Thurn, & Miller, 1995; Trinkoff & Storr, 1997). The ethical issues relating to the sensitivity of this research will be discussed towards the end of this chapter.

**Reliability and validity of self-report.** Although there continued to be debate about the reliability and validity of self-reported AOD use, general population based studies largely supported the accuracy of self-reporting AOD use behaviours (Casswell, Huckle, & Pledger, 2002; Chan-Pensley, 1999; Del Boca & Darkes, 2003; Gomez, Conde, Santana, & Jorrin, 2005; Johnson & Fendrich, 2005; Volk, Cantor, Steinbauer, & Cass, 1997). To promote the accurate recall of

information, nurse respondents were asked to report their AOD use in the last 12-months.

**Conjoint questioning.** Conjoint questioning aimed to gather information on the nurses' use of alcohol and other drugs in one question. Although not specific to types of drugs used, this style of questioning had been found by other researchers to promote a positive response as questions are asked about combined alcohol and drug use, rather than other drug use or illicit drug use (R. Brown, Leonard, Saunders, & Papasouliotis, 1997; Johnson & Fendrich, 2005; McCabe, Boyd, Couper, Crawford, & d'Arcy, 2002). For nurses, this was particularly salient, as they may have been less likely to report specific AOD use behaviours due to perceived consequences for their registration and employment (Collins et al., 1999; Trinkoff & Storr, 1997; Trinkoff, Zhou, et al., 1999).

**AUDIT C.** The Alcohol Use Disorders Identification Test (AUDIT), developed by the World Health Organisation, is a well validated 10-item screening instrument for briefly assessing risk of self-reported past year alcohol use across age, gender, cultures and in the workplace (Babor & Grant, 1989; Davey, Obst, & Sheehan, 2000; Reinert & Allen, 2007; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). AUDIT C, a shortened version of AUDIT, questions alcohol consumption, more specifically the frequency and volume of alcohol use, and heavier drinking episodes. AUDIT C has been validated for screening for alcohol use disorders and hazardous drinking in the general population across age, gender and cultures (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998; Dawson, Grant, Stinson, & Zhou, 2005; Gomez et al., 2005; Gordon et al., 2001; Reinert & Allen, 2007). To estimate the prevalence of alcohol use 'across the continuum of use', AUDIT C was used to collect data for nurses' last year alcohol consumption. The

use of AUDIT C also allowed comparison of findings with international studies of nurses (Blazer & Mansfield, 1995; Trinkoff & Storr, 1998a; Yang et al., 2001) and NZ general population studies (Habgood et al., 2001; Ministry of Health, 2004; Wilkins & Sweetsur, 2008; Wyllie, Millard, & Zhang, 1996).

A standard drink measure of 10 grams of pure alcohol was used for questions relating to alcohol use and was clearly outlined at the beginning of the questions on alcohol consumption (Appendix A). Examples were given for standard drink measures of wine, beer, Ready to Drink (RTDs) and spirits. This measure is consistent with alcohol education information provided for the general population in NZ by ALAC (2004) and is used in some, but not all, NZ general population studies (de Bonnaire et al., 2004; Ministry of Health, 2004, 2007a).

A hangover occurs several hours after ceasing drinking when blood alcohol levels are falling. The effects of a hangover can continue with a blood alcohol concentration of zero. While the symptoms of a hangover vary, they include headaches, dizziness, fatigue, muscle aches, dehydration, nausea, vertigo, and cognitive and mood disturbances (Swift & Davidson, 1998; Wiese, Shlipak, & Browner, 2000). Working with a hangover may compromise an individual's cognitive ability and disrupt their ability to work effectively (Swift & Davidson, 1998; Wiese et al., 2000).

**Other drug use.** To estimate the prevalence of other drug use, nurses were asked about their last 12 months use of cannabis, opiates, stimulants and benzodiazepines. The questions were developed in consultation with expert clinicians. Recreational drug use is reported by international studies of nurses (Blazer & Mansfield, 1995; Collins et al., 1999; Hughes et al., 2002; Trinkoff et al.,

1991; Trinkoff & Storr, 1998a; Trinkoff, Storr, et al., 1999) and the NZ general population (Field & Casswell, 1999; Ministry of Health, 2007b, 2010; Wilkins & Sweetsur, 2008).

In this study, nurses were asked to report their recreational cannabis use. They were also asked to report their opiate, stimulant and benzodiazepine use, as these drugs were used for recreational purposes and were accessible to nurses in their workplaces. To gain a greater understanding of nurses' use of drugs, questions were designed to differentiate between prescribed drug use and 'on your own' prescription-type drug misuse (Trinkoff et al., 1991; Yang et al., 2001).

**Access and Diversion.** Nurses are in the unique position of having access to medication in the workplace and opportunities during their working day to divert medications from the work imprest stock and patient supplies. They may also be able to access prescription drugs from colleagues. The diversion of medicines from work imprest stock or patient supplies is an illegal activity and therefore, related questions are highly sensitive (Finke et al., 1993; Trinkoff & Storr, 1998a). To 'soften' such questions nurses were asked to report knowledge of their colleagues' behaviours before reporting their own behaviour (Johnson & Fendrich, 2005; Tourangeau & Yan, 2007).

**Altered work performance.** Questions related to altered work performance were developed to gain a greater understanding of how working with a hangover or working while affected by AOD use may have impacted on work performance and the safe delivery of patient care. The questions were informed by previous nursing studies (Bugle, 1996; Collins et al., 1999; Lillibridge et al., 2002; Trinkoff, Zhou, et al., 1999), workforce studies (Ames & Rebhun, 1996; French, Zarkin, Hartwell, & Bray, 1995; Mangione et al., 1999) and NZ general population studies (de Bonnaire

et al., 2004; Ministry of Health, 2004). Following consultation with senior nurses and experts in the field, five altered work performance indicators were identified. These were altered decision-making ability; irritability with patients, families and colleagues; difficulty in managing workloads; medication errors; and technical difficulties.

**Management issues.** Questions were developed to gather information about the management of nurses whose AOD use was affecting their work. The nurse respondents were asked to indicate their managers’/employers’ responses when work performance was affected by their AOD use (Hughes et al., 2002; Shaw et al., 2004). Again, to ‘soften’ the questions, and encourage responses, nurses were asked to report their observations of colleagues before being asked to report their own experiences.

**Contributing factors.** Previous nursing studies have identified stress, anxiety and depression as factors that contribute to nurses’ AOD use (Lillibridge et al., 2002; Plant et al., 1992; Storr et al., 1999; Trinkoff et al., 2000). The nurses in this study were asked to indicate whether their stress, anxiety and/or depression had contributed to their use of AODs in the last 12 months.

**Demographic questions.** In contrast to usual practice when constructing questionnaires on sensitive topics, questions related to AOD use were asked before demographic questions to immediately capture the interest of the respondent and encourage questionnaire completion (Dillman, 2000). Following discussion with senior clinicians and academics in this area, the development of the demographic categories combined questions in the NCNZ’s annual national workforce survey and the NZ census to enable comparison of findings with the NZ nursing workforce and the general population.

**Support for nurses.** To ensure nurse participants' wellbeing, the name and contact details of agencies available to provide support were included should any issues arise as a result of being asked questions about their AOD use. These included community alcohol and drug services; the Alcohol and Drug Helpline; the ALAC Website and employee assistance programs (EAP).

### **3.1.2 Pilot questionnaire**

Ten paper questionnaires and an online option were distributed to nurses from two educational institutions in two large NZ metropolitan regions. These nurses were selected as they were no longer clinicians but they were recognised as having valuable knowledge and experience of the work nurses do, an understanding of nurses' scope of practice and the work environment.

The initial questionnaire was eight pages in length, and contained 72 items. The nurses were asked to critically review the content validity (Polit & Beck, 2004) of the questions and the length, layout and language used. As a result of feedback from the eight respondents and consultation with clinical and academic experts in the field, changes were made and the questionnaire was reduced to four pages in length with 52 items.

The focus of this survey was to gather information about nurses' AOD use across the continuum of use. Any questions specific to AOD dependence were removed. The full AUDIT screening instrument was reduced to AUDIT C (frequency, volume and episodes of heavy drinking) to allow for comparison with reports for general population studies at that time. The use of nicotine was beyond the scope of this study, therefore questions related to nicotine consumption were removed. Questions related to treatment, recovery and re-entry to the workforce were also removed, as these too were outside the scope of this study.

The questionnaire had a green border and the text was printed in different shades of green on white paper. Edwards et al., (2002) found that the use of coloured ink increased response rates for postal questionnaires. The final four-page questionnaire was reviewed by supervisors, expert medical and nursing clinicians, academics and scholars in the field.

The online questionnaire was piloted to test for ease of access, completion and submission. It was successfully accessed, completed and submitted by eight nurses in a large educational institution. Following the successful pilot, and after the postal questionnaires were distributed, the online questionnaire went 'live'.

### **3.1.3 Online response option**

The online option assumed that the nurses had access to a computer and were computer literate (Dillman, 2000; Knapp & Stuart, 2003; Link & Mokdad, 2005; McCabe et al., 2002). A website was developed for nurses to access the participant information sheet and complete the online questionnaire. Usernames and passwords (n=1750) were randomly generated for access to the online questionnaire. This was done to ensure anonymity. Respondents were able to access and complete the online response option after receiving instructions with the postal survey information.

The questionnaire layout for the online response option was altered slightly for a more effective flow of information and responses. Radio buttons as opposed to drop down boxes, were provided for answer selection in the format similar to a conventional mail survey. The nurse respondents were able to log on to the website an unlimited number of times, however they were only able to submit one complete questionnaire. The online respondents were offered a "prefer not to answer" and/or "don't know" option for all questions (Cook, Heath, Thompson, & Thompson, 2001; S. Crawford, Couper, & Lamias, 2001; S. Crawford, McCabe, Couper, & Boyd,

2002; Dillman, 2000; Heerwegh & Loosveldt, 2002; Shannon, Johnson, Searcy, & Lott, 2002). The program recorded the login number of the nurse respondents who accessed the site, tracked the number of times each respondent logged on, and offered the opportunity to partially complete the questionnaire, save data and return to complete and submit the questionnaire at a later date.

To track the nurse participants responding to the questionnaire in more than one mode, login numbers of those who responded online were cross-referenced with those on the returned postal questionnaires.

### **3.1.4 Data collection**

Following consultation with Mr Alistair Stewart, a biostatistician at The University of Auckland, a random sample of 1,500 active RNs was chosen to achieve a CI of +/- 2.5% for an estimate of 50%. The sample was drawn from nurses who had consented to be contacted by researchers<sup>4</sup> and was drawn from the NCNZ's 2004 database. As a precautionary measure, a further 250 names were generated for a second round of questionnaire distribution if the initial dissemination resulted in a low response rate. Nurses excluded from the sampling frame were those who identified their primary area of employment as midwifery, management, research, education, professional and policy development. It is important to note that midwifery in New Zealand is regarded as a profession separate from nursing. While some midwives in NZ may hold dual registration with the NCNZ and the Midwifery Council of New Zealand (MCNZ) they were only included in the research if they were employed in a nursing role.

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<sup>4</sup> Registered nurses have the opportunity to consent to participating in research when completing their Annual Practising Certificate application.

With the support of the NCNZ, a computer-generated algorithm randomised the sample of nurses and provided their names and postal addresses. The nurses' details were then generated and printed on labels by the NCNZ. To ensure participant anonymity, the NCNZ attached the printed labels to each set of mailings provided by the researcher.

The distribution of this survey was informed by and adapted from the work of Dillman (2000) and is similar to methods use by other researchers in this area (Blazer & Mansfield, 1995; Collins et al., 1999; Edwards et al., 2002; Kenna & Lewis, 2008; Kenna & Wood, 2004b; Trinkoff & Storr, 1997). There was a four-week timeframe for the distribution of four communications related to the study (Dillman, 2000; Edwards et al., 2002). In week one, a sealed envelope containing the letter of introduction (Appendix B) to the study was posted to the sample (Dillman, 2000; Edwards et al., 2002). This letter outlined the purpose of the study and alerted the potential participants that a questionnaire would arrive by post within a week. The participant information sheet with instructions for an online response option (Appendix C), the questionnaire (Appendix A), a self-addressed stamped envelope for returning the completed questionnaire (Dillman, 2000; Edwards et al., 2002), and a letter inviting participation in a future focus group or individual interview (Appendix D) were distributed in week two. Reminder cards were sent to participants in weeks three and four (Appendix E and F) (Dillman, 2000; Edwards et al., 2002).

Any unopened mail was to be returned to NCNZ and recorded as a returned survey. In the event of no further contact details being available, the participants' details were removed from the envelopes and destroyed and the envelopes were

returned to the researcher. The return of completed questionnaires indicated that nurse participants had consented to taking part in the study.

### **3.1.5 Data Analysis**

Data were cleaned and ranked, entered into an Excel spreadsheet and imported to the Statistical Package for Social Sciences (SPSS) v19. Following consultation with Mr Alistair Stewart, biostatistician at The University of Auckland, descriptive statistics were generated, and ordinal and nominal data were analysed using non-parametric statistical analysis (Pallant, 2005). Non-parametric statistical analysis was used as it assumes a random sample and independent observations where one response can only appear in one category and the data from one subject cannot influence another (Pallant, 2005).

The majority of questions had three or more response options and the Kruskal-Wallis Test was used to generate statistical analysis for these questions. The Kruskal-Wallis Test is an omnibus test that ranks individual scores, as it calculates the mean rank for each group.

The Kruskal-Wallis Test determines whether there is a statistical difference between three or more groups, however, it does not specify where the between group difference occurs (Pallant, 2005). Post hoc analysis was undertaken using the Mann-Whitney U Test to determine statistical significance between the groups (Pallant, 2005). The significance for post hoc testing was set at .01 to allow for multiple p values. Following discussion with consultant biostatistician Mr Alistair Stewart, the weighted mean was also calculated to focus on the trends between groups as numbers within the groups differed.

For those questions that asked for a yes/no response the Mann-Whitney U Test was used to test for significance between two independent groups for a

continuous measure. The Mann-Whitney U Test compares medians, scores are converted to ranks and then assessed for significance across the two groups (Pallant, 2005).

A large number of statistical analyses were undertaken and this meant it was likely that a Type 1 error would occur. A Type 1 error occurs when the analysis shows statistical significance between groups, but some significant results may be spurious due to for example very small sample as happened with the low numbers of Pacific nurses. To minimize the possibility of a Type 1 error occurring, significance was set at  $p=0.05$  for the main tests and  $p=0.01$  for the post hoc tests. A 95% confidence interval was calculated where necessary (Pallant, 2005; Polit & Beck, 2004). Tables and graphs were created using SPSS v19 and Excel programs.

## **3.2 Stage Two - Focus groups**

### **3.2.1 Participant selection and data collection**

To gain a greater depth of understanding of the implications for the results of the survey, RNs and nurse managers were invited to participate in a focus group interview. The questionnaire included an invitation to RNs who had experienced working alongside colleagues whose AOD use had affected how they worked, to make contact with the researcher and participate in a focus group interview. In addition, an advertisement inviting participation in a focus group was also placed in the New Zealand Nursing Organisation's Journal *Kai Tiaki Nursing New Zealand* and the *Nursing Review* website (Appendix G) (Krueger & Casey, 2000; Polit & Beck, 2004). To ensure participation from RNs and nurse managers in both islands, and from metropolitan and provincial regions, nurses were invited to participate by two people known to the researcher (Krueger & Casey, 2000; Polit & Beck, 2004).

Eight focus groups with between three and nine RNs were held in three metropolitan, two regional and one rural centre in NZ. The interviews were held in meeting rooms in hospitals, the nurses' place of employment and a private home. The nurses were given the participant information sheet (Appendix H) and consent form (Appendix I) prior to the interviews and these were signed before the interviews began. Issues relating to confidentiality of the focus group process were discussed with the group and participants were assured of anonymity when reporting findings from the interviews. Participants were offered the opportunity to seek clarification of the process at any time (Gibbs, 1997; Kitzinger, 1995; Krueger & Casey, 2000).

A fictitious scenario was used to prompt the participants' thinking and discussion of their experiences of working with or managing nurses whose AOD use 'across the continuum of use' affected their practice (Appendix J). Open ended questions were used as prompts for further discussion and to seek clarity where necessary (Appendix K). At the completion of the focus group interview a \$20 petrol voucher was offered to each participant for reimbursement of their time and travel costs incurred. Following data transcription, the participants were offered the opportunity to review the transcripts.

### **3.3 Individual Interviews**

#### **3.3.1 Participant selection and data collection**

Seven Directors of Nursing from main centres and provincial areas across NZ were invited to participate in interviews and five agreed (Krueger & Casey, 2000; Polit & Beck, 2004). As well, two nurses who completed the questionnaire volunteered to take part in an individual interview (Krueger & Casey, 2000; Polit &

Beck, 2004). All of the individual interviews took place at the participants' workplaces and lasted 60 – 90 minutes. The participants were offered a \$20 petrol voucher as an acknowledgement of their time.

The interview questions with the Directors of Nursing focused on nurses' use of AODs across the continuum of use and implications for the workplace, affected individual nurses' ability to deliver safe patient care, and management issues. In addition, they were asked about the diversion of medicines by nurses and the subsequent implications for the nurse. The Directors of Nursing were also asked about their organisations' policies and their legal requirement under the HPCA Act 2003 to report nurses whose practice was impaired through AOD use to the NCNZ (Appendix L).

The two individual RN interviews began with the same fictitious scenario used for the focus group interviews, and again, open ended questions were used to prompt discussion and seek clarification.

The participants were given a participant information sheet (Appendix M) and consent form (Appendix N) and the consent forms were signed prior to the commencement of the interviews. Issues relating to confidentiality of the interview process were discussed and the participants were assured of anonymity when the research findings were reported (Gibbs, 1997; Kitzinger, 1995; Krueger & Casey, 2000; Polit & Beck, 2004). The interviews were recorded and, following transcription of the tapes by the researcher, the participants were given an opportunity to review their transcripts. Two of the Directors of Nursing reviewed their transcripts and neither made changes.

Throughout the interview process, I was aware of the need to adjust the language used to describe a nurse working while affected by their AOD use. The

terms 'hangover', 'under the weather' and 'feeling seedy' were used according to the terms the participants used.

### **3.3.3 Data analysis**

Analysis of the qualitative data did not take place until all of the individual and focus group interviews were completed and transcribed. A general inductive analysis approach was used to interpret the qualitative data. This approach facilitated the summary of a large volume of raw data and the emergence of transparent and defensible themes and subthemes that gave a depth of understanding to the research topic (Thomas, 2006). The interviews were transcribed, the data was read and re-read so the researcher was able to familiarise herself with it (Thomas, 2006). The data was sensitive, multifaceted and extensive. Using a general inductive approach facilitated the exploration and interpretation of the text. The themes arose directly from the analysis of the raw data and were relevant to the aim of the research (Thomas, 2006). The data was coded and three themes emerged, altered work performance; enabling behaviours; and management issues. Each theme was then discussed using the subthemes: Individuals; colleagues; nurse managers and Directors of Nursing. Examples from the text were used to illustrate the emergent themes. The themes were reflective of the complexity of nurses' AOD use and its implications and provided a depth of understanding to findings from the survey data.

## **3.4 Ethical considerations**

Researching AOD use in the general population is by nature highly sensitive as often participants report embarrassing and potentially illegal behaviours (Harrison, 1995; Saunders et al., 1993). It is arguably more so for nurses as they may also be reporting information that is illegal or has compromised patient safety. The

reported behaviours may be embarrassing and have the potential to be professionally damaging, threatening their licence to practice and employment opportunities (Collins et al., 1999; Kidd & Finlayson, 2006; Trinkoff, Zhou, et al., 1999).

The ethical considerations for this study included the need to ensure participant anonymity and confidentiality of information; informed consent; support for participants; the identification of illegal or unsafe practice by the researcher; and consultation with Māori.

The nurses in this study needed assurance that the information they shared would remain anonymous and they and their colleagues would not be identifiable in the thesis or future publications. The processes outlining the anonymity and confidentiality issues for the survey respondents have been previously outlined in the data collection sections in this chapter. When analysing the survey data, the cell sizes for some specialty areas of practice were small and, when cross tabulated with other demographic variables, there was the remote potential that an individual nurse may be identifiable. As discussed earlier in this chapter, to prevent this occurring, the 20 main areas of practice used by the NCNZ were collapsed to four main areas of practice: Critical care, community care, acute care and mental health.

To create an environment of trust in the focus group interviews, the nurses were asked to respect the confidentiality of the participants and not to discuss outside of the interview the information shared within (Gibbs, 1997; Kitzinger, 1995; Krueger & Casey, 2000; Polit & Beck, 2004). Consent forms were signed before beginning the discussions. When reporting findings from the discussions, the nurses were assured of their anonymity and confidentiality of the information they shared. Pseudonyms were used when transcribing, reporting and presenting findings (Gibbs,

1997; Kitzinger, 1995; Krueger & Casey, 2000; Polit & Beck, 2004). The same process was followed for the individual interviews.

The nurse participants were sent information prior to the survey as outlined earlier in this chapter. A letter of introduction and the participant information sheet informed the nurses about the research. Participants also had an opportunity to clarify any concerns with the researcher by email or via the 0800 number provided. Consent for participating in the survey was assumed with the return of a questionnaire. Interviewees also received a participant information sheet and had an opportunity to seek clarification from the researcher before signing the consent form prior to the interview.

To ensure the nurses' wellbeing, and in the event of nurses needing personal or professional support as a result of completing the survey or being interviewed, the contact details of four agencies and services who support those with AOD use problems were provided. As stated above, the participants were also provided with contact details for the researcher and their supervisor if they had any queries or concerns about the study.

It was unlikely that the researcher would identify unsafe or illegal practice from the participants as the questionnaires were anonymous and the return envelopes were self-addressed and provided by the researcher. The focus group and individual interviews did not gather personal information, rather the participants experience of working alongside or managing nurses whose practice was affected by their AOD use.

Nurses who identified as Māori were included in the anonymous, randomised sample of active registered nurses. All the surveyed nurses, including nurses who identified as Māori, were invited to be part of the focus group and individual

interviews. To ensure the Māori nurses were not marginalized, consultation with Māori leaders (*Kaumātua*) was undertaken in the development stages of this project. These included Eru Potaka-Dewes (Ngati Porou, Ngati Uepohatu and Te Whanau-o-Pokai), Takarangi Metekingi (Tainui), Fiona Hamlin, (Ngati Kahungunu); and academic Dr Jacqueline Kidd, (Ngāpuhi).

Ethical approval for this research was received from The University of Auckland Human Participants Ethics Committee in 2004, Reference number 2004/383 (Appendix O).

### **3.5 Conclusion**

This chapter has discussed the research design and the methods used to collect and analyse the data. The ethical issues that were considered during the planning of this research have also been discussed. The following chapter will present the survey results and Chapter Five will present the findings from the focus group and individual interviews.

## **CHAPTER 4**

### **SURVEY FINDINGS**

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This chapter presents findings from the survey of nurses estimating the prevalence of alcohol and other drug use and altered work performance by active RNs in New Zealand. This chapter is presented in the following way: Demographic data; prevalence; altered work performance and management issues. Prevalence findings are presented under the sub-headings alcohol and other drug use. Alcohol use is then further broken down to the headings: The frequency of alcohol consumption; the volume of alcohol consumption and episodes of heavy drinking. Other drug use includes cannabis, opiates, stimulants and benzodiazepines. This is followed by access and diversion.

Altered work performance is discussed under the following subheadings: Nurses working below their normal level of performance; altered work performance and alcohol consumption; altered work performance and other drug use; altered work performance and AOD use at work or before work; problems from AOD use; and stress, anxiety and depression. Management issues, findings for education and from the open ended question are also presented. In this chapter descriptive statistics and statistically significant findings are reported where  $p < .05$ . The significance for post hoc testing was set at  $p < .01$  to allow for multiple p values.

## **4.1 Demographic data**

The demographic data for RN participants are shown in Table 4.1. RN participants are compared to nursing workforce data gathered by the New Zealand Health Information Service (Ministry of Health, 2004). The comparison of demographic data (Figure 4.1 - Figure 4.5) shows respondents are broadly representative of the 2004 nursing workforce. Demographic variables used for comparison include age, gender, marital status, primary region of practice, and ethnicity.

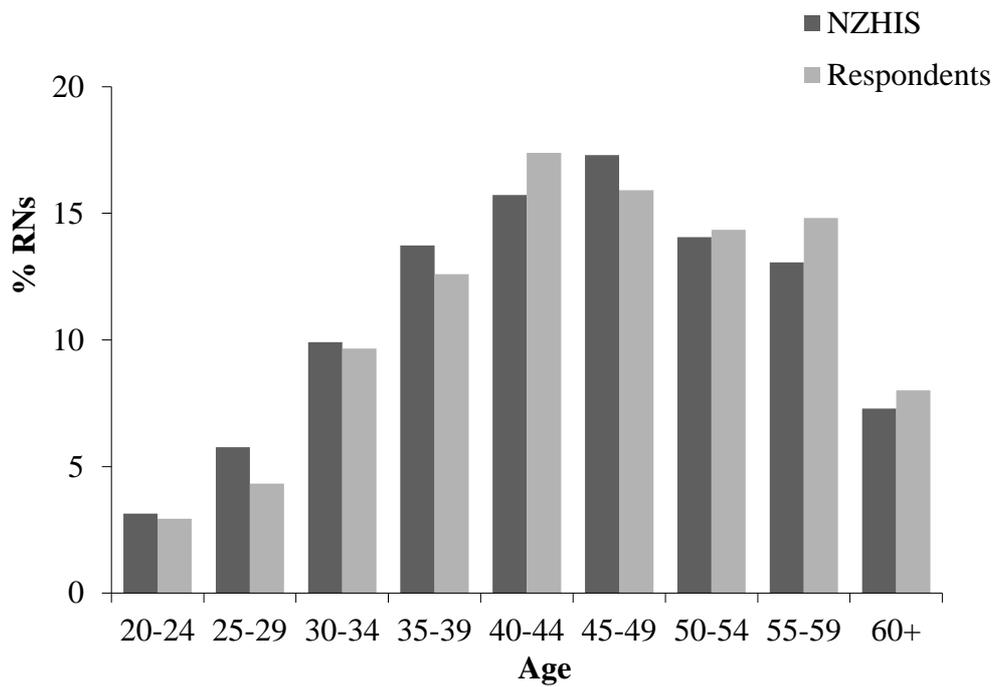
Table 4.1 Demographic data for respondents

Age	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 plus
Missing	4	47	105	137	189	173	156	161	87
Gender	Female	Male							
Missing	4	69							
Marital status	Never married/single	Married/defacto	Divorced/separated	Widowed					
Missing	7	804	115	20					
Ethnicity	NZ European	NZ Maori	Pacific Peoples	Other European	Asian	Other			
Missing	16	56	12	79	38	58			

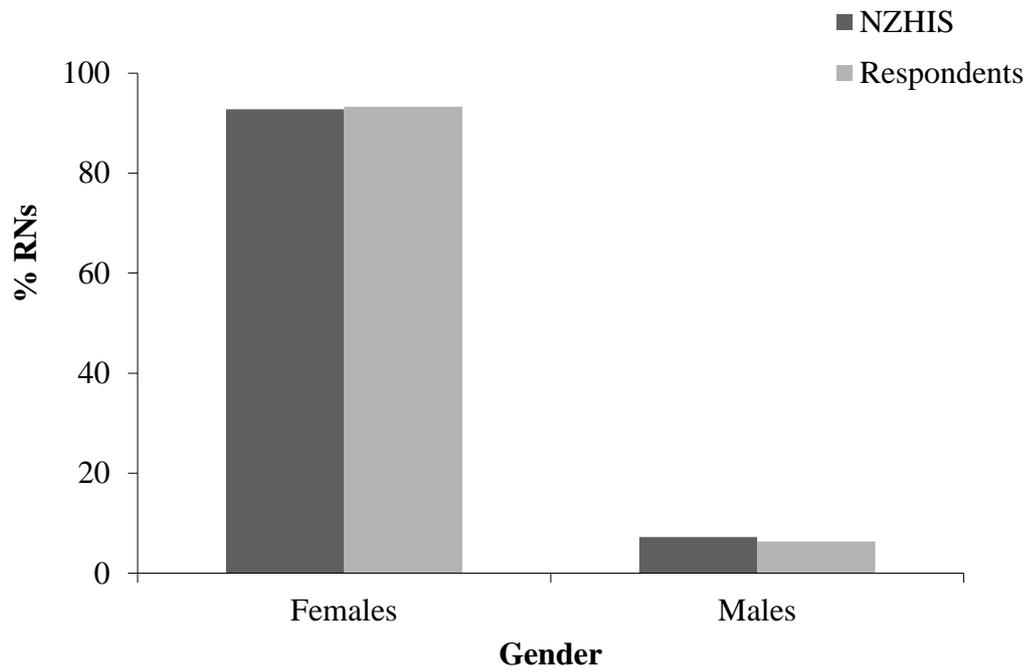
Chapter 4: Survey Findings

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Primary region of practice	Northland	Auckland	Marlborough	Southland	Taranaki	Nelson	Canterbury	Manawatu-Wanganui	Wellington
	53	291	18	29	35	24	181	69	108
West Coast		Hawkes Bay	Tasman	Waikato	Bay of Plenty	Otago	Gisborne		
9	61	7	70	69	51	8			
Missing	4								



*Figure 4.1. Age comparison of respondents with the 2004 RN workforce (NZHIS, 2004).*



*Figure 4.2.* Gender comparison of respondents with the 2004 RN workforce (NZHIS, 2004).

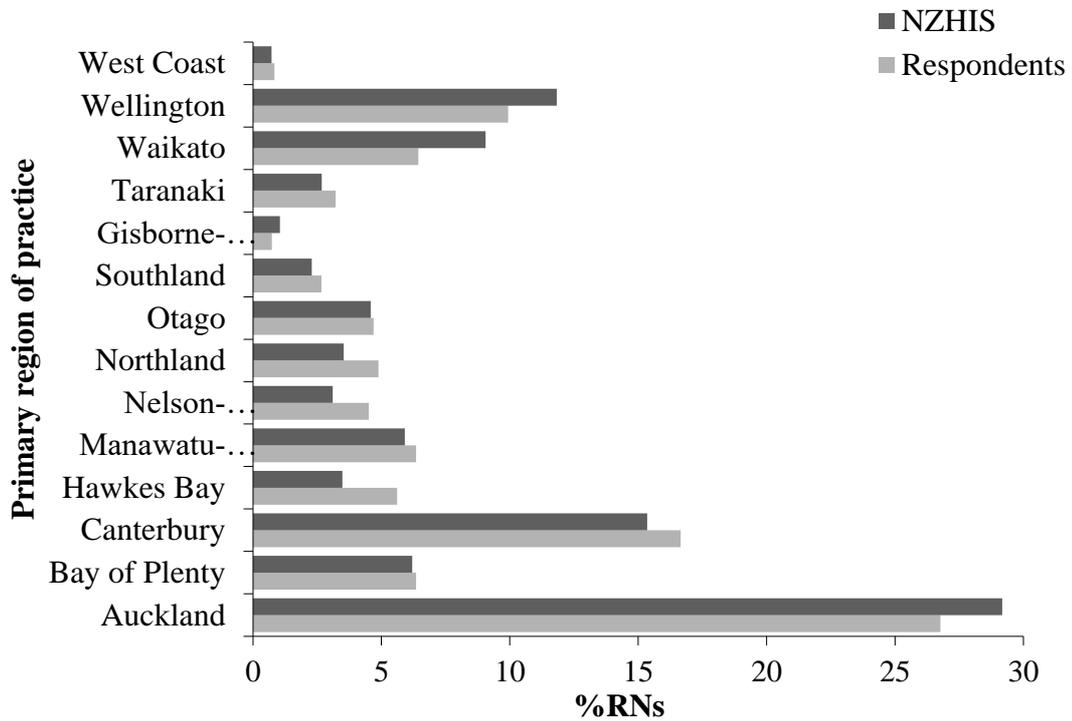


Figure 4.3. Primary region of practice comparison of respondents with the RN workforce (NZHIS, 2004).

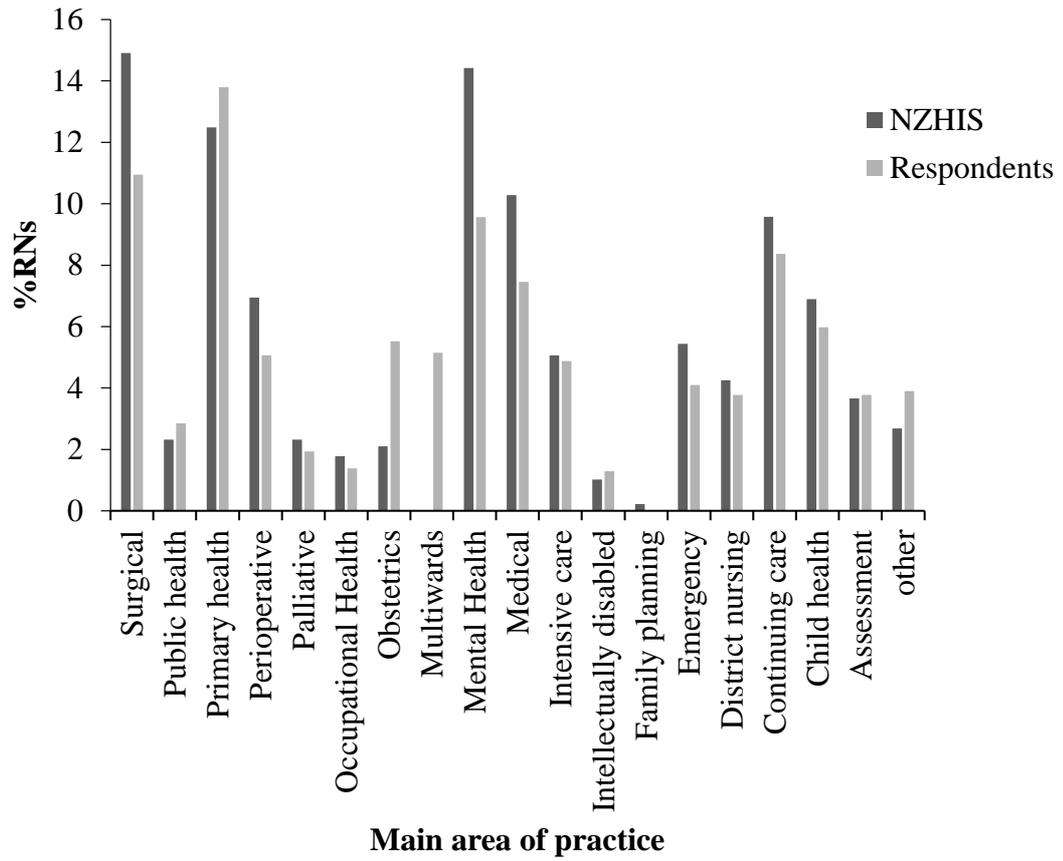


Figure 4.4. Main area of practice comparison of respondents with the RN workforce (NZHIS, 2004).

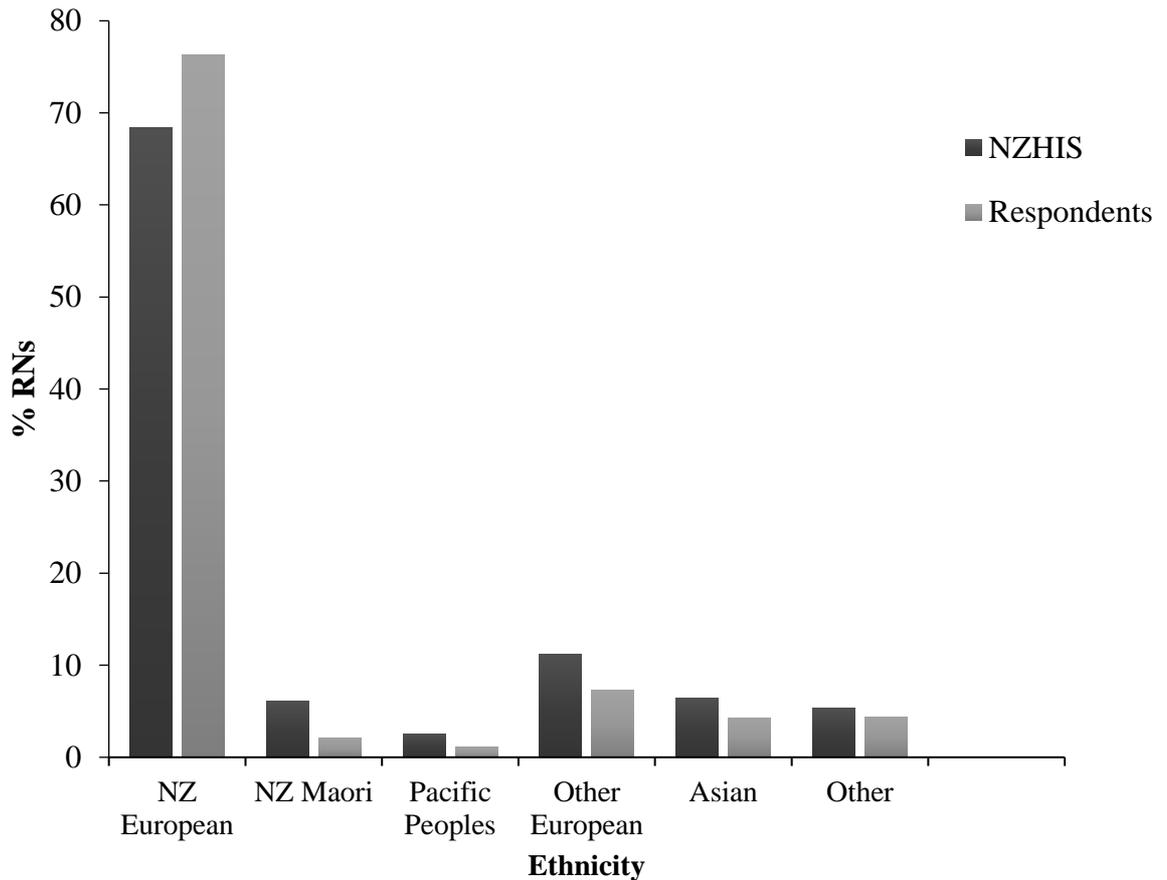


Figure 4.5. Ethnicity comparison of respondents with the RN workforce (NZHIS, 2004).

## 4.2 Prevalence

### 4.2.1 Alcohol use

The nurses were asked to report the frequency and volume of their alcohol consumption and their episodes of heavier drinking over the last 12 months. Overall 88% (N=958) reported consuming alcohol in the last 12 months 95% CI [0.86, 0.90] with 12% reporting they abstained from using alcohol 95% CI [0.10, 0.14]. The following section reports findings from the nurses who consumed alcohol.

### 4.2.2 Frequency of alcohol consumption

More nurses self-reported consuming alcohol 2 to 3 times per week (28%, n=301) 95% CI [0.25, 0.30], than 2 to 4 times a month (24%, n=262), monthly or less (21%, n=231) and four or more times a week (15%, n=164) 95% CI [0.13, 0.17], (Figure 4.6).

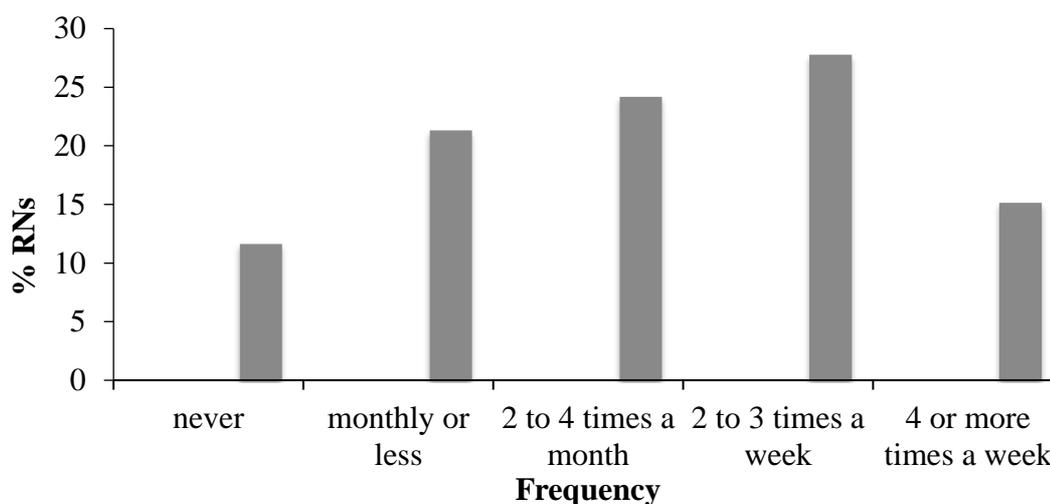


Figure 4.6. Frequency of self-reported alcohol consumption by nurses for the last 12 months.

To gain a greater understanding of nurses' self-reported alcohol use, the frequency and volume of alcohol consumed was cross tabulated with demographic variables including age, gender, marital status, primary region of practice, main area of practice, and hours of work. The weighted mean was calculated ( $\bar{x} = \frac{\sum fx}{\sum f}$ ), as the data presented an uneven distribution of numbers with some data points contributing more than others (Harraway, 1997). The common denominator for calculating the weighted mean for the frequency of alcohol consumption and heavy drinking episodes is weekly. The common denominator for the volume of alcohol consumed is one standard drink.

**Frequency of alcohol consumption and age.** A Kruskal Wallis test showed that there was a statistically significant difference between the age groups of nurses [ $\chi^2(8) = 33.792, p = .001$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows that the frequency of alcohol consumption was significantly less for nurses between 20 and 24 years when compared to nurses over 35 years, nurses between 25 and 29 years when compared to those between 40 and 49 years, and nurses between 30 to 34 years when compared to those between 40 to 49 years (Appendix P). See Table 4.2 for a summary of the data.

**Frequency of alcohol consumption and gender.** No significant difference was found between the frequency of alcohol consumption of male and female nurses [ $Z = -.436, p = .663$ ]. See Table 4.3 for a summary of the data.

**Frequency of alcohol consumption and marital status.** No significant difference was found between the frequency of alcohol consumption for nurses who had never married/single, those who were married or in defacto relationships, those who were divorced or separated and nurses who were widowed [ $\chi^2(3) = 5.867, p = .118$ ]. See Table 4.4 for a summary of the data.

**Frequency of alcohol consumption and primary region of practice.** No significant difference was found between the frequency of alcohol consumption for nurses across all primary regions of practice [ $\chi^2(15) = 21.193, p = .131$ ]. See Table 4.5 for a summary of the data.

Table 4.2. Nurses' self-reported frequency of alcohol consumption in the last 12 months, age and weighted mean

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
20-24	4	10	16	2	0	0.57
25-29	4	15	17	10	0	0.86
30-34	21	22	23	29	9	1.32
35-39	16	35	32	36	17	1.50
40-44	14	32	48	66	29	1.85
45-49	15	30	44	56	28	1.83
50-54	25	29	38	37	27	1.66
55-59	14	37	31	42	37	1.97
60+	13	21	13	23	17	1.78
Missing data	20					
Total	1087					

Table 4.3. Nurses' self-reported frequency of alcohol consumption in the last 12 months, gender and weighted mean

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
Female	121	217	235	285	153	1.66
Male	5	13	24	16	11	1.66
Missing data	7					
Total	1087					

Table 4.4 Nurses' self-reported frequency of alcohol consumption in the last 12 months, marital status and weighted mean

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
Never Married/single	15	35	44	32	14	1.34
Married/de facto	100	154	188	233	127	1.72
Divorced/separated	6	35	22	33	19	1.73
Widowed	5	4	6	1	4	1.38
Missing data	10					
Total	1087					

Table 4.5 Nurses' self-reported frequency of alcohol consumption in the last 12 months, primary region of practice and weighted mean

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
Northland	10	14	13	12	4	1.16
Auckland	51	52	70	75	43	1.59
Marlborough	2	7	2	6	1	1.24
Southland	4	4	12	8	1	1.19
Taranaki	3	6	11	14	1	1.40
Nelson	2	4	7	8	3	1.70
Canterbury	14	41	51	48	25	1.61
Manawatu-Whanganui	9	21	12	17	10	1.51
Wellington	6	23	23	34	22	1.99
West Coast	2	0	4	2	1	1.44
Hawkes Bay	8	8	13	16	16	2.14
Tasman	0	3	1	3	0	1.23
Waikato	5	17	18	19	11	1.69

Bay of Plenty	6	18	11	19	15	1.93
Otago	2	12	11	17	8	1.85
Gisborne	1	0	3	2	2	2.16
Missing data	7					
Total	1087					

**Frequency of alcohol consumption and ethnicity.** A Kruskal-Wallis test showed that there was a statistically significant difference between different ethnic groups of nurses [ $\chi^2(5) = 87.469, p = .001$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows the frequency of alcohol consumption was significantly greater for NZ European nurses when compared with NZ Māori and Asian nurses, and for Other European nurses when compared with Asian nurses. NZ Māori nurses consumed alcohol significantly less frequently when compared with Other European nurses and significantly more frequently when compared with Asian nurses (Appendix Q). See Table 4.6 for a summary of the data. It is important to note the small number of Pacific nurses for this data set.

**Frequency of alcohol consumption and main area of practice.** A Kruskal-Wallis test showed that there was a statistically significant difference between groups of nurses main area of practice [ $\chi^2(2) = 4.425, p = .109$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows the frequency of alcohol consumption was significantly greater for nurses working in community care when compared to those working in acute care [ $Z = -2.907, p = .004$ ]. See Table 4.7 for a summary of the data.

**Frequency of alcohol consumption and the number hours worked per week.** No significant difference was found for the volume of alcohol consumed per drinking occasion between nurses who worked 20 hours, 20 to 40 hours and more than 40 hours [ $\chi^2(2) = 4.425, p = .109$ ]. See Table 4.8 for a summary of the data.

Table 4.6 Nurses' self-reported frequency of alcohol consumption in the last 12 months, ethnicity and weighted mean

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
NZ European	65	168	212	241	140	1.79
NZ Māori	7	16	16	14	3	1.14
Pacific	6	3	1	2	0	0.51
Other European	6	15	20	28	10	1.73
Asian	20	12	4	2	0	0.25
Other	20	14	9	8	7	1.09
Missing data	10					
Total	1087					

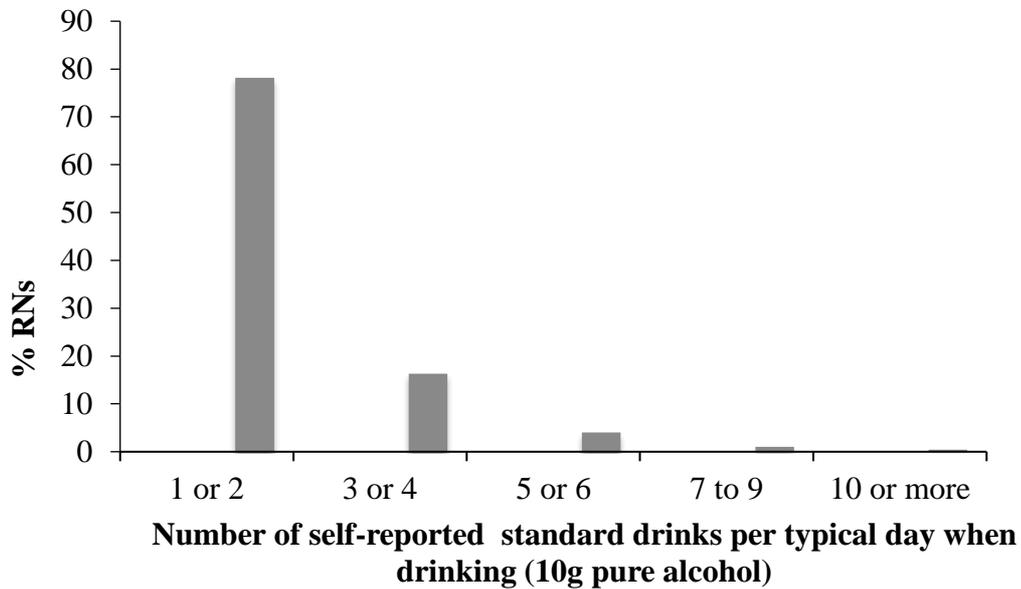
Table 4.7 Nurses' self-reported frequency of alcohol consumption in the last 12 months, main area of clinical practice and weighted mean

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
Critical Care	13	35	31	52	21	2.22
Community Care	36	64	86	102	63	2.26
Acute Care	59	83	96	97	50	1.99
Mental Health	9	32	29	50	14	2.10
Missing data	81					
Total	1087					

*Table 4.8 Nurses' self-reported frequency of alcohol consumption in the last 12 months, the number of hours worked per week and weighted mean*

	Abstinence	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	Weighted Mean
Under 20 hrs	12	32	28	46	30	1.96
20 to 40 hrs	93	157	185	209	106	1.61
over 40 hrs	19	41	48	45	28	1.62
Missing data	8					
Total	1087					

### 4.2.3 Volume of alcohol consumption



*Figure 4.7* Volume of alcohol consumed on a typical day when drinking, in the last 12 months.

Seventy-eight percent (N=742) of nurses reported that they consumed 1 or 2 standard drinks per drinking occasion 95% CI [0.66, 0.72], compared with those who consumed more standard drinks (Figure 4.7).

To further understand the volume of alcohol consumed by nurses (N=912) in the last 12 months, the number of standard drinks (10g of pure alcohol) on a typical day when drinking was cross tabulated with demographic data.

**Volume of alcohol consumed on a typical day when drinking and age.** A Kruskal-Wallis test showed a statistically significant difference between the age groups of nurses [ $\chi^2(8) = 69.097, p = .001$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows that the volume of alcohol consumed was significantly greater for nurses between 20 and 24 years when compared to nurses 35

years and over, for nurses between 25 and 29 years when compared to nurses between 40 and 49 years and for nurses between 30 and 34 when compared to nurses 35 years and over (Appendix P). See Table 4.9 for a summary of the data.

*Table 4.9* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, age and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
20-24	10	9	5	1	3	4.11
25-29	23	12	4	1	1	2.87
30-34	51	19	3	3	0	2.41
35-39	89	24	4	0	0	2.05
40-44	135	21	4	3	0	1.98
45-49	125	21	4	1	0	1.93
50-54	99	19	7	0	0	2.03
55-59	114	15	4	1	0	1.89
60+	60	5	0	0	0	1.65
Missing	12					
Total	912					

**Volume of alcohol consumed on a typical day when drinking and gender.**

No significant difference was found for the volume of alcohol consumed on a typical day when drinking between male and female nurses and [ $Z = -2.210, p = .027$ ]. See Table 4.10 for a summary of the data.

*Table 4.10* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, gender and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
Female	665	131	30	9	4	2.07
Male	39	13	5	1	0	2.41
Missing	15					
Total	912					

**Volume of alcohol consumed on a typical day when drinking and marital status.** A Kruskal Wallis test showed that there was a statistically significant difference between different groups of nurses' marital status. [ $\chi^2(3) = 11.960, p = .008$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows that the volume of alcohol consumed was significantly greater for nurses who were never married or single compared with nurses who were divorced or separated [ $Z = -2.285, p = .022$ ]. See Table 4.11 for a summary of the data.

*Table 4.11* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, marital status and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
Never Married/single	81	24	9	3	2	2.53
Married/de facto	529	102	22	6	1	2.02
Divorced/separated	78	18	4	1	0	2.08
Widowed	13	1	0	0	0	1.64
Missing	18					
Total	912					

**Volume of alcohol consumed on a typical day when drinking and primary region of practice.** No significant difference was found for the volume of alcohol consumed on a typical day when drinking between nurses across all primary regions of practice [ $\chi^2(15) = 11.840, p = .691$ ]. See Table 4.12 for a summary of the data.

*Table 4.12* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, primary region of practice and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
Northland	31	7	2	0	0	2.05
Auckland	175	35	2	3	2	2.04
Marlborough	13	1	0	0	0	1.64
Southland	17	5	2	0	0	2.25
Taranaki	21	9	0	0	0	2.10
Nelson	19	2	1	0	0	1.86
Canterbury	125	25	6	1	0	2.01
Manawatu-Whanganui	44	7	3	0	2	2.30
Wellington	76	15	4	2	0	2.11
West Coast	5	1	1	0	0	2.36
Hawkes Bay	36	9	6	0	0	2.32
Tasman	5	0	1	1	0	3.00
Waikato	48	10	2	0	0	1.97
Bay of Plenty	52	8	1	1	0	1.93
Otago	33	9	4	1	0	2.36
Gisborne	5		0	0	0	2.07
Missing data	14					
Total	912					

**Volume of alcohol consumed on a typical day when drinking and ethnicity.** A Kruskal Wallis test showed that there was a statistically significant difference between different ethnic groups of nurses [ $\chi^2(5) = 15.726, p = .008$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows that the volume of alcohol consumed was significantly less for NZ European nurses when compared with NZ Māori and Asian nurses. NZ Māori nurses consumed significantly greater volumes of alcohol when compared with Other European nurses. Other European nurses consumed significantly less volumes of alcohol when compared with Asian nurses (Appendix Q). See Table 4.13 for a summary of the data.

*Table 4.13* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, ethnicity and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
NZ European	572	115	21	5	4	2.04
NZ Māori	29	8	7	2	0	2.74
Pacific	3	2	0	1	0	3.25
Other European	56	7	3	1	0	1.99
Asian	15	3	0	0	0	1.83
Other	25	6	4	1	0	2.46
Missing	23					
Total	912					

**Volume of alcohol consumption on a typical day when drinking and main area of practice.** A Kruskal Wallis test showed that there was a statistically significant difference between groups of nurses' main area of practice [ $\chi^2(3) =$

15.473,  $p = .001$ ]. Mann-Whitney U post hoc analysis adjusted for multiple  $p$  values shows that the volume of alcohol consumed was significantly less for nurses working in critical care [ $Z = -3.220, p = .001$ ] and community care [ $Z = -3.541, p = .001$ ] compared with nurses working in mental health. See Table 4.14 for a summary of the data.

*Table 4.14* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, main area of practice and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
Critical Care	113	18	4	3	0	0.25
Community Care	257	46	9	2	0	0.22
Acute Care	257	50	10	2	3	0.27
Mental Health	63	29	12	3	1	0.61
Missing	117					
Total	912					

**Volume of alcohol consumption on a typical day when drinking and the number of hours worked per week.** No significant difference was found for the volume of alcohol consumed on a typical day when drinking between nurses who worked 20 hours, 20 to 40 hours and more than 40 hours [ $\chi^2(2) = 3.481, p = 0.175$ ]. See Table 4.15 for a summary of the data.

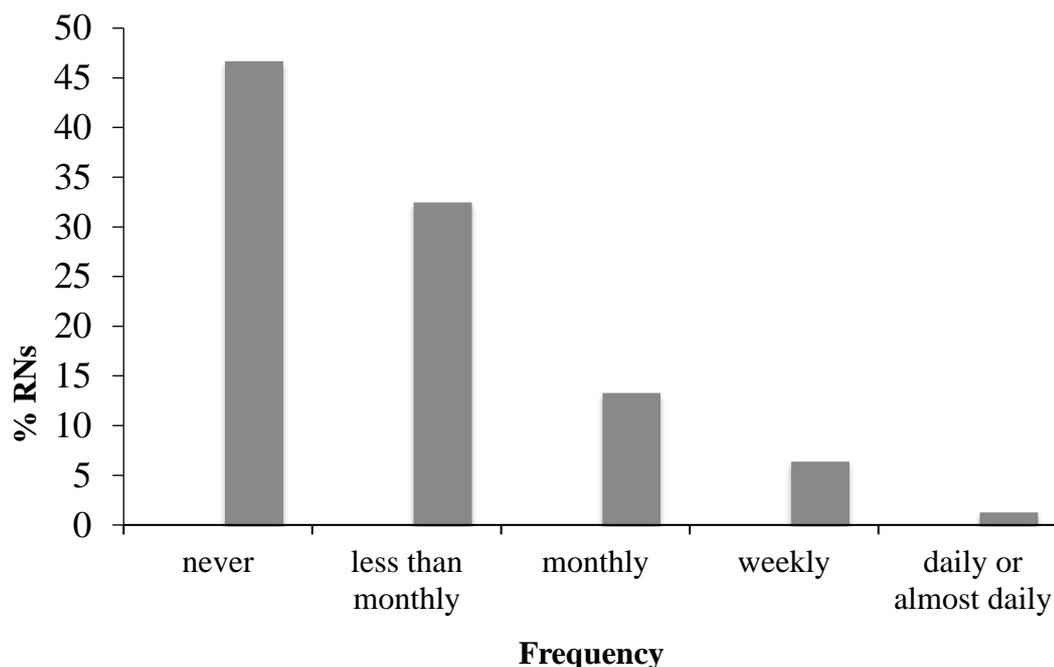
*Table 4.15* The number of nurses who self-reported the volume of alcohol they consumed on a typical day when drinking, hours worked per week and weighted mean

	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	Weighted Mean
Under 20 hrs	105	20	1	0	0	1.82
20 to 40 hrs	478	106	25	9	3	2.14
Over 40 hrs	121	19	8	1	1	2.07
Missing	15					
Total	912					

#### 4.2.4 Episodes of Heavy Drinking

Nurses were asked to report how often they consumed four (female) or six (male) or more drinks on one occasion in the last year. As in the previous sections, only nurses who reported consuming alcohol are reported in this section.

Slightly more than half (53%) of the nurses (N=912) reported drinking larger volumes of alcohol on one drinking occasion 95% CI [0.43, 0.49] and 8% (n=72) of these nurses reporting drinking larger volumes of alcohol weekly or more (Figure 4.8).



*Figure 4.8* Nurses' self-reported episodes of heavy drinking (4 females/6 males) on one drinking occasion by nurses in the last 12 months.

Heavy drinking episodes were cross tabulated with demographic variables to gain a greater understanding of nurses' episodes of heavy drinking.

**Episodes of heavy drinking and age.** A Kruskal Wallis test showed that there was a statistically significant difference between the age of different groups of nurses [ $\chi^2 = 63.104 (8), p = .001$ ]. Nurses between 20 and 24 years were significantly more likely to report episodes of heavy drinking when compared with nurses 40 years and over. Similarly, nurses between 25 and 29 years when compared with those 45 to 49 years and 55 years and over; nurses between 30 and 34 years when compared to those 35 years and over; and nurses between 35 to 39 years when compared with those 40 years and over were also significantly more likely to report episodes of heavy drinking (Appendix P). See Table 4.16 for a summary of the data.

*Table 4.16* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, age and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
20-24	6	9	8	4	0	0.26
25-29	10	18	9	3	0	0.19
30-34	16	37	14	5	0	0.18
35-39	33	51	22	8	0	0.17
40-44	72	55	20	12	1	0.18
45-49	80	38	16	11	3	0.23
50-54	70	32	13	4	3	0.22
55-59	80	34	9	8	3	0.22
60+	44	12	6	1	1	0.14
Missing data	31					
Total	912					

**Episodes of heavy drinking and gender.** No significant difference was found for episodes of heavy drinking between male and female nurses [ $Z = -.561$ ,  $p = .575$ ]. See Table 4.17 for a summary of the data.

*Table 4.17* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, gender and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
Female	383	269	107	50	11	.50
Male	26	17	10	5	0	.55
Missing data	34					
Total	912					

**Episodes of heavy drinking and marital status.** No significant difference was found for episodes of heavy drinking between nurses who had never married or were single, those who were married or in de facto relationships, those who were divorced or separated and nurses who were widowed [ $\chi^2 = 1.647 (3), p = .649$ ]. See Table 4.18 for a summary of the data.

*Table 4.18* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, marital status and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
Never married/single	51	32	17	13	1	.57
Married/de facto	301	218	88	35	8	.50
Divorced/separated	49	32	8	7	2	.42
Widowed	7	2	3	1	0	.67
Missing data	37					
Total	912					

**Episodes of heavy drinking and primary region of practice. No**

significant difference was found for nurses' episodes of heavy drinking across all regions [ $\chi^2 = 12.898 (15), p = .610$ ]. See Table 4.19 for a summary of the data.

*Table 4.19* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, primary region of practice and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
Northland	18	10	5	5	0	0.49
Auckland	100	76	30	8	2	0.47
Marlborough	7	4	1	0	0	0.25
Southland	9	10	3	2	0	0.45
Taranaki	17	10	1	2	0	0.19
Nelson	12	5	2	3	0	0.39
Canterbury	78	48	16	10	3	0.46
Manawatu-Whanganui	27	14	12	3	0	0.62
Wellington	47	26	12	6	1	0.48
West Coast	3	1	2	0	1	1.45
Hawkes Bay	23	12	9	3	3	0.84
Tasman	2	4	0	0	0	0.08
Waikato	25	20	10	4	0	0.53
Bay of Plenty	27	18	9	5	0	0.50
Otago	14	26	2	4	0	0.27
Gisborne	1	2	3	0	1	1.82
Missing data	33					
Total	912					

**Episodes of heavy drinking and ethnicity.** No significant difference was found for nurses' episodes of heavy drinking between ethnic groups [ $\chi^2 = 8.762 (5)$ ,  $p = .119$ ]. See Table 4.20 for a summary of the data. It is important to note the small number of Pacific nurses for this data set.

*Table 4.20* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, ethnicity and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
NZ European	328	230	93	45	10	0.21
NZ Māori	18	17	5	3	0	0.15
Pacific	1	0	4	1	0	0.33
Other European	36	18	7	4	0	0.12
Asian	8	9	1	0	0	0.08
Other	18	10	3	2	1	0.26
Missing	40					
Total	912					

**Episodes of heavy drinking and main area of practice.** No significant difference was found for episodes of heavy drinking between nurses working in critical care, community care, acute care and mental health [ $\chi^2 = 5.218 (3)$ ,  $p = .157$ ]. See Table 4.21 for a summary of the data.

*Table 4.21* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, main area of practice and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
Critical Care	65	43	20	8	0	.79
Community Care	156	83	42	21	9	.86
Acute Care	148	115	38	14	0	.74
Mental Health	34	41	14	14	6	1.13
Missing data	76					
Total	912					

**Episodes of heavy drinking and the number of hours worked per week.**

No significant difference was found for episodes of heavy drinking between nurses who worked 20 hours, 20 to 40 hours and more than 40 hours [ $\chi^2 = 1.887 (2), p = .389$ ]. See Table 4.22 for a summary of the data.

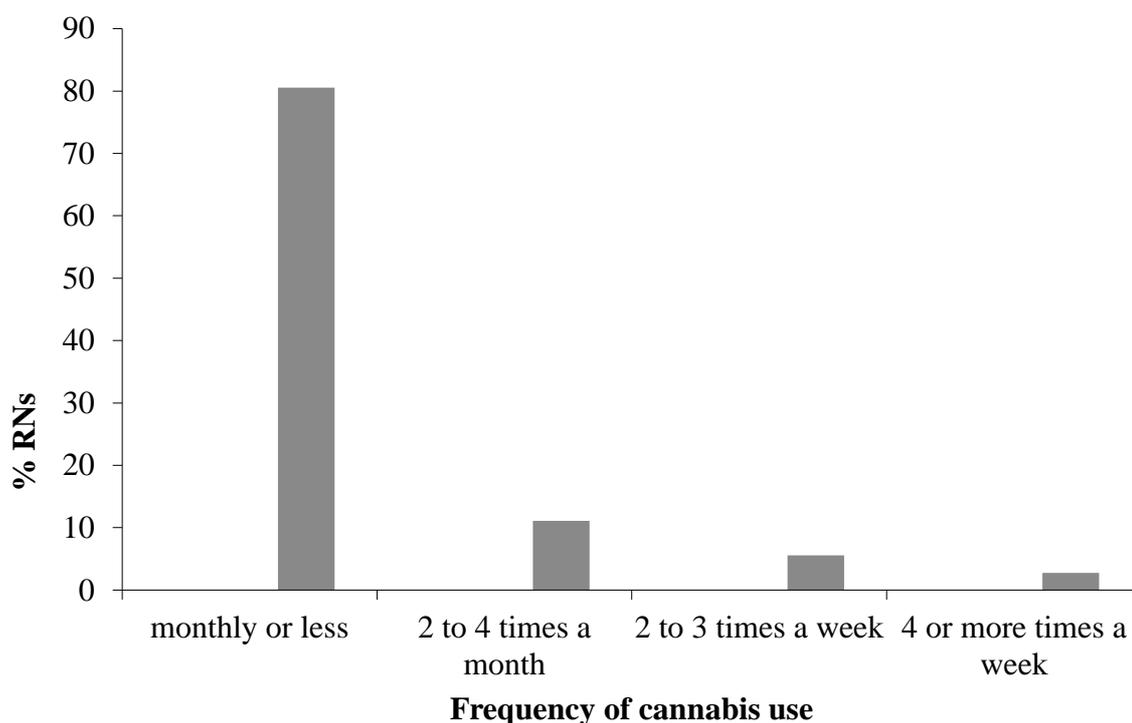
*Table 4.22* The number of nurses who self-reported episodes of heavy drinking on one drinking occasion, number of hours worked per week and weighted mean

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	Weighted Mean
Under 20 hrs	53	48	14	5	2	.46
20 to 40 hrs	277	201	81	42	7	.50
Over 40 hrs	80	36	21	9	2	.51
Missing data	34					
Total	912					

#### 4.2.5 Drug use other than alcohol

The nurses were asked to report their use of cannabis, opiates, stimulants and benzodiazepines. These questions were used to differentiate between licit and illicit drug use. The terms prescription drug use, non-prescription drug use, use more than prescribed, and drug use inappropriate to diagnosis and street type opiates are used for reporting drug use other than alcohol. See Table 4.23 for a summary of the data. The nurses were able to provide more than one response for their opiate, stimulant and/or benzodiazepine use.

**Cannabis.** Cannabis use in the last 12 months was reported by 3.5% (n=38) of the total sample of nurses 95% CI [0.03, 0.05]. The majority of this group (n=29) reported using cannabis monthly or less (*Figure 4.9*).



*Figure 4.9* Nurses' self-reported use of cannabis in the last 12 months

**Opiates.** Nine percent (n=96) of the total sample of nurses reported using opiates in the last 12 months 95% CI [0.07, 0.11]. Of these, 88% (n=84) reported

prescription opiate use. Non-prescription opiate use was reported by 13% (n=12), 3% (n=3) reported using opiates more than prescribed, 5% (n=5) reported opiate use inappropriate for their diagnosis, and one nurse reported using “street type” opiates. See Table 4.23 for a summary of the data.

**Stimulants.** Just over one percent (n=14) of the total sample of nurses reported using stimulants in the last 12 months 95% CI [0.01, 0.02]. Of these, 14% (n=2) reported prescription stimulant use. Non-prescription stimulant use was reported by 50% (n=7) and one nurse reported stimulant use inappropriate to their diagnosis. Five nurses were not specific about their stimulant use. See Table 4.23 for a summary of the data.

**Benzodiazepines.** Seven percent (n=76) of the total sample of nurses reported using benzodiazepines in the last 12 months 95% C.I. [0.06, 0.09]. Of these, 79% (n=60) reported prescription benzodiazepine use. Non-prescription benzodiazepine use was reported by 20% (n=15), 3% (n=2) reported using prescription benzodiazepines more than prescribed and 11% (n=8) reported benzodiazepine use inappropriate to their diagnosis. Nine nurses selected more than one response when reporting how they used benzodiazepines. See Table 4.23 for a summary of the data.

*Table 4.23* The proportion of nurses' self-reporting drug use other than alcohol in the last 12 months

	Cannabis use		Opiate use		Stimulant use		Benzodiazepine use	
	(%)	n	(%)	n	(%)	n	(%)	n
Total drug use	3.5	38	9	96	1	14	7	76
Prescription drug use			8	84	<1	2	6	60
Non-prescription drug use			1	12	<1	7	1	15
Use more than prescribed			<1	3			<1	2
Drug use inappropriate to diagnosis			<1	5	<1	1	1	8
Street type opiates			<1	1				

### 4.3 Access and Diversion

Nurses were asked to report access to medications at their place of work. Of the respondents (N=667), 30% (n=200) reported access to medication was difficult, 25% (n=169) reported moderately easy access and 18% (n=118) reported very easy access to medication in their place of work.

The nurses were asked to report their observations of colleagues who may have ingested or acquired medications from their workplace (imprest stock), accessed them from their colleagues or their patients' supplies. Eight percent (n=84) of the nurses reported that they were more likely to observe their colleagues diverting medications from their workplace than accessing medications from their colleagues (<1%, n=6) or the patients' supplies (2%, n=16). The nurses were then

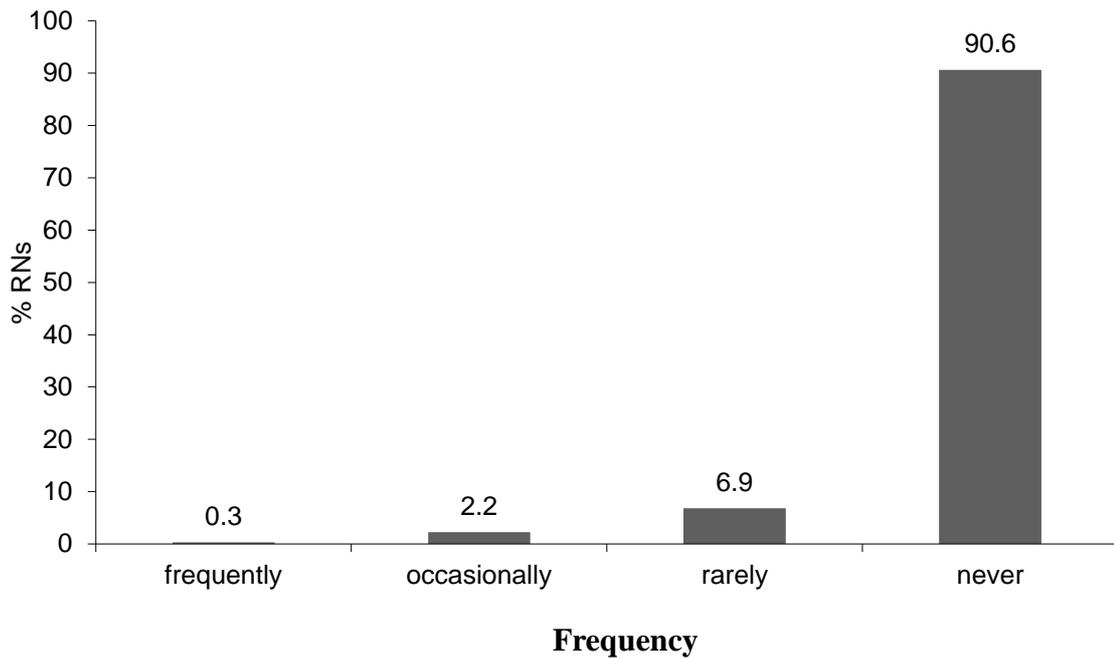
asked to self-report their access to medications. Three percent (n=34) reported diverting medications from their workplace and less than 1% reported diverting medicines from their colleagues (n=3) or the patients' supplies (n=1). See Table 4.24 for a summary of the data.

*Table 4.24* The proportion of nurses' reporting the diversion of medicines in the last 12 months

	The workplace		Colleagues		Patient supplies	
	%	n	%	n	%	n
Colleagues diversion	8	84	<1	6	2	16
Self-reported diversion	3	34	<1	3	<1	1

#### **4.4 Altered work performance and AOD use**

This section presents findings for the implications of altered work performance resulting from nurses' AOD use. The nurses were asked how often in the last 12 months they had worked below their normal level of performance due to a hangover or while otherwise affected by their AOD use.



*Figure 4.10* Altered work performance from a hangover or while otherwise affected by AOD use in the last 12 months.

Just over 9% (n=101) of the nurses reported their work performance was altered due to a hangover from their AOD use or while otherwise affected by their AOD use on rare (7%, n=74), occasional (2%, n=24) or frequent (<1%, n=3) occasions (Figure 4.10).

#### **4.4.1 Nurses working below their normal level of performance**

The respondents were given five examples of how they may work below their normal level of performance and they were given the option of responding to more than one example. Thirty-six percent (n=36) of the nurses reported irritability with patients, families and/or colleagues; 25% (n=25) reported difficulty managing their workload; 17% (n=17) reported altered decision-making ability; 1% (n=1) reported

medication errors; and 35% (n=35) reported other<sup>5</sup> examples of how they worked below their normal level of performance. There were no nurses that reported technical difficulties. One-hundred and one responses were given for this question. See Table 4.25 for a summary of the data. It is important to note the small data set for this group of nurses.

*Table 4.25* The proportion of nurses' reporting examples of altered work performance from a hangover or while otherwise affected by AOD use in the last 12 months

	Altered work performance	
	%	n
Altered decision-making ability	17	17
Irritability with patients, families and/or colleagues	36	36
Difficulty in managing workload	25	25
Medication errors	1	1
Technical difficulties e.g. reconstituting and administering of IV medicines	0	0
Other	35	35

To gain a greater understanding of altered work performance, it was cross tabulated with age, gender, and marital status, primary region of practice, ethnicity, and main area of practice and number of hours of worked per week. Due to the small number of nurses for this data set post-hoc Mann-Whitney U tests were not undertaken.

<sup>5</sup> In the 'other' option the nurses reported fatigue (n=35) resulted in reduced patient contact time; a lack of motivation; slower times to complete essential tasks; and disengagement from those around them.

**Altered work performance and age.** A Kruskal Wallis test showed that there was a statistically significant difference between groups of nurses and age [ $\chi^2=34.4 (8), p = .001$ ]. See Table 4.26 for a summary of the data.

*Table 4.26* The proportion of nurses' reporting altered work performance in the last 12 months and age

	Total sample	Altered work performance	
	N	%	n
20-29	79	20	16
30-39	240	14	34
40-49	360	9	33
50-59	313	5	17
60+	87	0	0
Missing	8		
Total	1087		101

**Altered work performance and gender.** No significant difference was found for altered work performance between male and female nurses [ $Z = -1.071, p = 0.284$ ].

**Altered work performance and marital status.** A Kruskal Wallis test showed that there was a statistically significant difference between groups of nurses and marital status [ $\chi^2= 17.7 (3), p = .001$ ]. See Table 4.27 for a summary of the data.

*Table 4.27* The proportion of nurses reporting altered work performance in the last 12 months and marital status

	Total sample	Altered work performance	
	N	%	n
Never married/single	141	18	26
Married/de facto	804	8	65
Divorced/separated	115	8	9
Widowed	20	0	0
Missing	7		
	1087		101

**Altered work performance and primary region of practice.** No significant difference was found for altered work performance between nurses across all primary regions of practice [ $\chi^2 = 9.363 (15), p = .858$ ].

**Altered work performance and ethnicity.** No significant difference was found for altered work performance between different ethnic groups of nurses [ $\chi^2 = 8.11 (5), p = .150$ ].

**Altered work performance and main area of practice.** A Kruskal Wallis test showed that there was a statistically significant difference between groups of nurses main area of practice and altered work performance [ $\chi^2 = 14.105 (3), p = .003$ ]. See Table 4.28 for a summary of the data.

*Table 4.28* The proportion of nurses reporting altered work performance in the last 12 months and main area of practice

	Total sample	Altered work performance	
	N	%	n
Critical care	153	11	17
Community Care	351	7	26
Acute care	386	8	29
Mental Health	118	18	21
Missing	79		
Total	1087		101

**Altered work performance and number of hours worked per week.** A Kruskal Wallis test showed that there was a statistically significant difference between altered work performance and the number of hours nurses worked [ $\chi^2=6.095 (2), p = .047$ ]. See Table 4.29 for a summary of the data.

*Table 4.29* The proportion of nurses' reporting altered work performance in the last 12 months and number of hours worked per week

	Total sample	Altered work performance	
	N	%	n
<20 hours	149	5	8
20 to 40 hours	745	9	69
>40 hours	180	13	24
Missing	13		
Total	1087		101

**Altered work performance and alcohol consumption.** Nurses who reported altered work performance in the last 12 months were more likely to

consume alcohol more frequently [ $\chi^2= 35.685 (4), p = .001$ ], use alcohol in larger volumes [ $\chi^2= 67.231 (4), p = .001$ ], and report frequent episodes of heavy drinking [ $\chi^2= 162.460 (4), p = .001$ ].

Four percent (n=9) of the 227 nurses who used alcohol monthly or less, 9% (n=24) of the 261 nurses who used alcohol 2 to 4 times a month, 14% (n=43) of the 299 nurses who used alcohol 2 to 3 times per week, and 16% (n=26) of the 164 nurses who used alcohol four or more times per week reported altered work performance See Table 4.30 for a summary of the data. (

*Table 4.30* The proportion of nurses' reporting altered work performance in the last 12 months and the self-reported frequency of alcohol consumption

	Total sample	Altered work performance	
	N	%	n
Monthly or less	227	4	9
2 to 4 times a month	261	9	24
2 to 3 times a week	299	14	43
4 or more times a week	164	16	26
Missing	10		
Total	1087		101

Seven percent (n=49) of the 701 nurses who consumed 1 or 2 standard drinks, 25% (n=36) of the 144 nurses who consumed 3 or 4 standard drinks, and 37% (n=13) of the 35 nurses who consumed 5 or 6 standard drinks reported altered work performance See Table 4.31 for a summary of the data.

*Table 4.31* The proportion of nurses' reporting altered work performance in the last 12 months and the self-reported volume of alcohol consumption

	Total sample	Altered work performance	
	N	%	n
1 or 2 standard drinks	701	7	49
3 or 4 standard drinks	144	25	36
5 or 6 standard drinks	35	37	13
7 or more standard drinks	14	21	3
Missing	18		
Total	912		101

Altered work performance was reported by 9% (n=27) of the 286 nurses who engaged in episodes of heavy drinking less than monthly, 23% (n=26) of the 115 who engaged in episodes of heavy drinking monthly, and 53% (n=35) of the 66 who engaged in episodes of heavy drinking weekly or more. See Table 4.32 for a summary of the data.

*Table 4.32* The proportion of nurses' reporting altered work performance in the last 12 months and self-reported episodes of heavy drinking on one drinking occasion

	Total sample	Altered work performance	
	N	%	n
Less than monthly	286	9	27
Monthly	115	23	26
Weekly or more	66	53	35
Missing	37		
Total	912		101

**Altered work performance and other drug use.** Four percent (n=38) of the total sample of nurses reported using cannabis and of this group 39% (n=15) reported altered work performance. Thirteen percent (n=12) of the 96 nurses who reported opiate use, 50% (n=7) of the 14 who reported stimulant use, and 18% (n=14) of the 76 who reported benzodiazepine use also reported altered work performance. See Table 4.33 for a summary of the data.

*Table 4.33* The proportion of nurses' reporting altered work performance in the last 12 months and self-reported drug use other than alcohol

	Total sample	Altered work performance	
	N	%	n
Cannabis Use	38	39	15
Opiate Use	96	13	12
Stimulant Use	14	50	7
Benzodiazepine Use	76	18	14

**Altered work performance and AOD use at work or before work.** Forty-four percent (n=20) of the 45 nurses who had consumed alcohol before work or were concerned that alcohol was on their breath at work, and 16% (n=14) of the 87 nurses who reported that they had consumed alcohol at work, reported altered work performance. AOD use within eight hours of going to work was reported by 198 nurses, 29% (n=58) of this group reported altered work performance. Nineteen percent (n=8) of the 43 nurses who reported they used AODs at work and 68% (n=15) of the 22 nurses who reported that they had felt drunk, sedated or high at work because of their AOD use, reported altered work performance. See Table 4.34 for a summary of the data.

*Table 4.34* The proportion of nurses' reporting altered work performance in the last 12 months and self-reported AOD use at work or before work

	Total sample		Altered work performance	
	N	%	n	%
Consumed alcohol or concerned that alcohol was on their breath before work	45	44	20	
Consumed alcohol during working hours	87	16	14	
AOD used within 8 hours of going to work	198	29	58	
Used AODs at work	43	19	8	
Felt drunk/sedated/high at work	22	68	15	

*Table 4.35* The proportion of nurses' reporting altered work performance in the last 12 months and self-reported problems from AOD use

	Total sample		Altered work performance	
	N		%	n
Used AODs more than they meant to	167		35	59
Wanted or needed to cut down on AOD use	125		38	47
Late for work or left work early because of side effects of AOD use	31		65	20

**Altered work performance and problems from AOD use.** Altered work performance was reported by 35% (n=59) of the 167 nurses who had used AODs more than they meant to and 38% (n=47) of the 125 nurses who reported they wanted or needed to cut down their use of AODs. The nurses were asked to report workplace absence in relation to their AOD use. Sixty-five percent (n=20) of the 31 nurses who reported they were late for work or had left early because of side effects caused by their AOD use, reported altered work performance. See Table 4.35 for a summary of the data. Four percent (n=45) of the nurses reported they did not go to work at all because of a hangover resulting from their AOD use.

**Altered work performance and stress, anxiety and depression.** Altered work performance was reported by 27% (n=55) of the 202 nurses that reported stress, 31% (n=20), the 65 nurses that reported anxiety and 28% (n=14) of the 50 nurses that reported depression contributed to their AOD use. See Table 4.36 for a summary of the data.

*Table 4.36* The proportion of nurses' reporting altered work performance in the last 12 months and self-reported stress, anxiety and depression that contributed to their AOD use

	Total sample	Altered work performance	
	N	%	n
Stress	202	27	55
Anxiety	65	31	20
Depression	50	28	14

## **4.5 Management issues**

The nurses were asked how AOD use issues had been dealt with in their workplace. One percent (n=14) reported that they had been spoken to by a colleague about the impact their AOD use had on their work and <1% (n=3) reported they had been brought to the attention of their manager or their employer for their AOD use.

Sixteen percent (n=175) of the nurses reported that they had knowledge of a colleague who was reported to management or their employer for their AOD use. When asked how managers responded to their colleagues, 52% (n=91) reported their colleagues were supportively managed, 13% (n=22) reported that issues seemed to be ignored by managers and 25% (n=44) reported that colleagues were dismissed. Four percent (n=43) of the nurses reported they knew of a colleague who had changed their employment for fear their AOD use would be discovered. Three nurses reported a change in employment for the same reason.

### **4.5.1 Education**

The nurses were asked to report their attendance at formal education sessions on AOD use in nursing, 78% (n=850) had received no education, 13% (n=138) had attended in-service education sessions, 6% (n=69) attended undergraduate and 3% (n=33) attended postgraduate education sessions, and 2% (n=20) reported attending a special interest group.

### **4.5.2 The open-ended question**

The questionnaire included an opportunity to comment on any part of the questionnaire. A total of 175 comments were made. Twenty-three comments focused on responses made to specific questions, the structure of the questionnaire, provided

feedback on questions and commented on the value of the study to nursing knowledge and practice.

Other comments related to how a busy clinical workload, team dynamics and workplace bullying added to stress in the workplace (n=21); access and diversion of medicines from the workplace (19); the nurses' experience of working alongside a colleague whose practice was altered as a result of their AOD use (n=18); an awareness of their colleagues' recreational drug use (n=12); observing their colleagues use of alcohol before work or during their working day or working with a hangover (n=10); and concern for a colleague whose AOD use was causing problems at work (n=8).

A small number of nurses self-reported recreational drug use and their use of medication without a prescription (n=9); working with a hangover (n=5); and being in recovery for their alcohol dependence or having a drunk in charge of a vehicle (DIC) charge (n=6). Six nurses reported how they managed their AOD use, strategies included counselling and periods of abstinence.

Eight nurses commented on the management strategies they observed when nurses were affected by their AOD use. These comments included support for the affected nurse; ignoring problems until patient safety was compromised; and loss of employment for the affected nurse. Seven nurses commented on their awareness of medicines management policy in their workplace. Two nurses reported they knew of colleagues who had changed their employment for fear their AOD use would be noticed.

Recommendations for policy, practice and education (n=18) were made, with the majority of comments relating to the need for in-service education for nurses on this topic. See Table 4.37 for a summary of the data.).

*Table 4.37* Nurses' response to the open-ended question

	n
Feedback on questions, the structure of the questionnaire and the value of the study to nursing knowledge and practice	23
Stress contributing to AOD use	21
Access and diversion	19
Experienced working alongside a colleague whose practice was altered due to AOD use	18
Recommendations for policy/practice/education	18
Awareness of colleagues' recreational drug use (including party pills)	12
Observing a colleagues' alcohol use at or before work or working with a hangover	10
Self-reported recreational drug use/use of medication without a prescription	9
Concern for a colleague whose AOD use was causing problems at work	8
Management strategies observed by nurses	8
Medicines management policy	7
Self-reported recovery/abuse/conviction	6
Self-management of AOD use	6
Self-reported working with a hangover	5
Experience of a colleagues' re-entry to work	3
Change of employment	2

## 4.6 Conclusion

This study of a representative sample of active RNs in NZ found a significant association between the self-reported frequency of alcohol consumption and age, ethnicity and main area of practice. The self-reported volume of alcohol consumed on a typical day when drinking was significantly associated with the nurses' age, gender, marital status, ethnicity and main area of practice. While findings for ethnicity were significant for the self-reported frequency and volume of alcohol consumed, they must be interpreted with some caution as there was only a small number of Pacific nurses in the data. The nurses' age was significantly associated with self-reported heavier drinking episodes on a typical day when drinking.

Overall, the nurses reported minimal cannabis use and only a small number of nurses reported prescription-type drug misuse of opiates, stimulants and benzodiazepines. The nurses reported access to medications was difficult and they were more likely to observe colleagues diverting medication from the work imprest stock than patient supplies or colleagues. Self-reported stress was identified as a major contributing factor to the nurses' AOD use.

Just over 9% of nurses reported their work performance was altered due to their AOD use or because of a hangover from their AOD use in the last 12 months. Altered work performance included: Decision-making abilities; irritability with patients, families and/or colleagues; difficulty in managing their workload; medication errors; and fatigue. The nurses' age, marital status, main area of practice and hours of work were significantly associated with altered work performance. Nurses who reported altered work performance were also significantly more likely to self-report that they consumed alcohol more frequently, in larger volumes and that they engaged in frequent episodes of heavy drinking.

The nurses reported observing their managers supporting colleagues whose practice was affected by their AOD use. However, they also reported that occasionally problems brought to the attention of a manager were ignored or the affected nurse lost their job and were dismissed from their employment.

To add a greater depth of understanding to the findings from the survey, focus group and individual interviews were undertaken with RNs, managers of nurses and Directors of Nursing. The following chapter will present the findings from the focus group and individual interviews.

## CHAPTER 5

### INDIVIDUAL INTERVIEW AND FOCUS GROUP FINDINGS

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This chapter presents the findings from the focus group interviews with the nurses and nurse managers, and from the individual interviews with the Directors of Nursing and nurses across metropolitan, regional and rural settings in primary, secondary and tertiary New Zealand health care settings. To add a depth of understanding to findings from the survey data, the participants were asked to discuss their observations and experiences of working alongside colleagues whose AOD use had resulted in altered work performance and their ability to deliver safe patient care. In some instances, the participants chose to self-disclose information to further inform the discussion.

Following the inductive analysis of the focus group and individual interview data (Thomas, 2006) three themes emerged: Altered work performance; enabling behaviours; and management issues. These themes will be used to guide the discussion under the subheadings: Individuals; colleagues; nurse managers; and Directors of Nursing.

#### **5.1 Altered work performance**

This section discusses the altered work performance of nurses who work with a hangover or while otherwise affected by their AODs use.

##### **5.1.1 Individuals**

Although not specifically asked about personal AOD use, a small number of the nurses spoke of their own experiences when coming to work with a hangover from alcohol use. For some, there was a sense that this was what you did when you

were younger, however as they got older and gained experience and maturity, they learned not to work in this way:

It is different as you get older, when you are younger you couldn't give a damn anyway ... when you are older you have more responsibility, your thoughts change especially with having a family ... you are not as resilient as when you were younger (Nurse 7).

For others working with a hangover was accepted as 'normal' behaviour. They recognised a difference in their critical thinking and clinical decision-making abilities, but they showed little insight into how working with a hangover may impact on their ability to deliver safe patient care:

You come to work hungover and need lots of coffee breaks ... you are good at coffee all day and wine all night. ... You have to double check the administration of medicines two or three times, you have to question yourself about decisions – clinical assessments and patients' medication management, and this is always so time- consuming ... (FG 2).

Working with a hangover slows you down ... If it was really unsafe and there were issues around patient safety and clinical decision making you would go home (FG 4).

Sometimes I came to work really hungover, unwell in hindsight. Although I don't know how ... there were no patient safety issues or incident forms (FG 2).

### **5.1.2 Colleagues**

When asked about their experiences of working alongside colleagues whose practice was affected by their AOD use, one nurse, who identified as a recovering alcoholic, gave a unique insight into the effect of working alongside nurses with hangovers or presented to work 'tiddly' or 'high'. She suggested that often the tasks were completed but the nurses were unable to attend to patients' and families' emotional well-being: "There's the essential stuff and everything else that is nursing ..." (Nurse 7).

This nurse commented on the implications for clinical decision making and the unpredictability and stress of nursing work when nurses work while impaired by their AOD use:

Nurses are thinking about whether they should drive or not, yet they undertake the nursing work of medicines management [including] drug equations and interpretation of observations ... family relationships and bonding ... rapport building and trust ... they don't respond to non-verbal cues. Nursing becomes task orientated work ... (Nurse 7).

When asked if she had any experience of colleagues seeking support or advice from more senior nurses when they were concerned about a colleague's altered nursing practice due to their AOD use, she stated that often the symptom not the cause of the problem was addressed. She described one nurse:

... whose clinical performance and judgment significantly affected a child's care. Observations were not taken as frequently as they should have been and [she] missed an epidural leak which left the child in pain. It took 12 hours to gain control [of the pain] again (Nurse 7).

Nurses were asked if they observed a difference in their colleagues' behaviour while affected by AOD use. The nurses reported noticing colleagues were often fatigued which resulted in compromised clinical decision making. In addition, they reported the affected nurses were emotionally labile, had reduced work capacity, and were often irritable with their team members, patients and families. They also reported inappropriate behaviours and additional work for other team members:

... Essential patient cares are undertaken, however care was often delayed, for example dressings, or forgotten. Nursing work is done in the moment, anticipation and planning of care is not undertaken and there is a considerable amount of down time [as they are] 'feeling sick' ... (Nurse 7).

There was pressure on other staff to carry a heavier work load ... it affected colleagues more than patients ... [nurses were] more 'snappy', less motivated to help each other out, waiting times [for patients] might increase, they were sluggish, moaning, jobs didn't get done ... they were shaky when managing IVs (FG 3).

These findings were similar to those reported in the survey. Some nurses however, reported noticing minimal if any difference in their affected colleagues' practice.

One reported: ... "Most [nurses] are able to pull it together to do their job" (FG 2).

The nurses also reported an awareness of colleagues who were absent from the work place, had extended breaks, or called in sick, and others who went to the extent of planning their duties to ensure they were less demanding when they anticipated working with a hangover:

... You roster yourself on a day that will be slower so you that you can deal with work when you have your hangover ... (Nurse 7).

For a small number of nurses, it was preferable to have colleagues working with a hangover rather than being short of staff:

We are very reliant on one another, it's a small unit and we can't call in other staff ... we need to respond to each other (FG 5).

In contrast, other nurses preferred that their colleagues call in sick and hoped that they would be replaced.

The nurses' awareness of illicit drug use varied. Some reported being aware of their colleagues' use in their personal lives of recreational drugs, particularly cannabis, ecstasy and 'P'. A small number of nurses reported difficulties in identifying colleagues who had used illicit drugs at work or prior to work. Those who reported recognizing their colleagues experiencing the 'comedown period' after using illicit drugs commented that the affected nurses' behavior was often erratic. Only a small number of nurses were able to recognize the effects of cannabis on a nurse's practice:

... I have seen nurses come to work under the influence of cannabis, not to the point of not functioning. They had a small joint the previous night before coming to work in the morning and considered themselves calm (Nurse 7).

One interviewee reported that nurses often cited their knowledge of drugs and their effects to justify their recreational drug use. She commented that her colleagues said they knew the quantities of recreational drugs they could use to remain 'safe' while working:

Ecstasy is not considered harmful, nurses think they know this because of their pharmacology background ... On night duty there was lots of marijuana use at social events ... they believe that they know the of amounts of drug they can use before it affects their work performance (Nurse 7).

The participants suggested that the diversion of medicines from the workplace was more easily recognized as there were often discrepancies in the drug count. For some nurses, the diversion of benzodiazepines was accepted practice, especially for those working night shifts, as they were often used to combat sleep deprivation. In contrast the diversion of opiates, which required altering the controlled drug register and was therefore considered more serious:

Benzos were being taken from the workplace ... when raised [with staff] the response was "oh, there are worse things that could be taken" (FG 3).

### **5.1.3 Nurse managers**

The nurse managers were asked about their experiences of managing nurses brought to their attention when AOD use was affecting their work performance and/or the workplace. Some nurse managers reported they often found it difficult to identify the impact AOD use had on the workplace as they felt similar behaviours could also be attributed to the effects of shift work and sleep deprivation. Others commented that nurses who were feeling 'under the weather' while working with a hangover were often distracted and fatigued, they often withdrew emotional care and were less aware of patients and their families:

The nurses who were ‘seedy’ from a hangover were slower, less receptive to patients ... they do things that aren’t patient orientated (FG 6).

In addition, their critical thinking and clinical care was often compromised and they struggled to work as part of the team. One manager reported:

They would cover up some things in their work that they should be doing. There were signs of lethargy, they had very little energy, they are apathetic, and there is no leadership... (FG 6).

#### **5.1.4 Directors of Nursing**

There was a notable contrast in response between the Directors of Nursing and the nurse managers when asked about the impact AOD use had on the workplace. The Directors of Nursing showed a greater level of insight into the implications for the affected nurses and the issues for patient safety. They reported an emerging pattern of behaviour that differed from the nurses’ ‘normal’ behaviour and interfered with team functioning. The Directors of Nursing cited behaviours which included the nurses’ altered presentation and appearance, absenteeism, being late for work, absence from work while on duty, mood changes, irritability and dysfunctional relationships. They reported changes in the nurses’ clinical performance that were often enabled by colleagues. There was an unspoken expectation within the team that the affected nurse’s workload was completed by other team members. One Director of Nursing commented it was:

... Very subtle ... situations were never well defined ... the managers don’t come [and] cite unsafe practice with examples ... things go missing ... the nurses are noted coming on duty late ... they are often distracted when working ... no one indicates patients have suffered or the nurses are not completing their workloads (Nurse 5).

Another suggested:

Difficulty arises as nurses on the work floor appear not to comment until they cannot cope with the workload – it becomes quite visible ... AOD use maybe hazardous use or social use or dependence and interfering with a nurse’s

performance. Some individuals have a high tolerance and manage to keep working, they continue to manage to function, maybe not very well but still adequately (Nurse 3).

They reported that often the affected nurses showed limited or no insight into the effects their behaviour had on their colleagues, their relationships with their patients and families, and the safe delivery of patient care. One Director of Nursing gave examples:

Nurses say, 'I'm a good nurse, I wouldn't do anything I knew would harm my patient and I always felt in control ...' and 'I'm a good nurse and I would never put my patient in jeopardy'. They believe they still have the ability to rationalize patient care management (Nurse 5).

The Directors of Nursing reported that the occasional diversion of medicines had prompted a tightening in their organizations' medicines management. One suggested that within her organisation:

There had been a number of instances where wards were not complying with the Medicines Management Act (the counting of dangerous drugs) and a number of opiates went missing. There is now a very strict process in place that is regularly audited (Nurse 2).

The findings from this section suggest that while some nurses were aware that working while hungover compromised their ability to practise, or their colleagues' ability to practise, they seemed unaware that working with a hangover could compromise the safety of the patients they were caring for. The diversion of medicines from the workplace was reported to be accepted practice and some nurses believed their pharmacological knowledge enabled them to use illicit drugs safely.

Nurse managers responsible for the staffing of clinical wards and units also reported that while they recognised that the affected nurses' practice was often compromised, they were less concerned about the nurses' ability to provide safe

patient care and focused more on the nurses remaining at work to ensure a full complement of staff.

The Directors of Nursing were more aware of the complexity that surrounded affected nurses brought to their attention, and the lack of insight by the affected nurses and often their managers. While the Directors of Nursing were concerned about the affected nurses' wellbeing, their primary responsibility was to ensure patient safety.

## **5.2 Enabling behaviours**

This section discusses the enabling behaviours of nurses in support of their colleagues who presented to work intoxicated, with a hangover from AODs, or otherwise affected by their AOD use.

### **5.2.1 Individuals**

A small number of nurses commented on how they were enabled to work with a hangover by their colleagues and managers:

In the ward environment, you tell your mate you're not feeling well, you are getting supported, not doing some nursing cares ... [for example] medicines administration (FG 8).

Another reflected on her own work life:

Socially we joke about it, we make it very acceptable, we have all done it, and we all do shifts knowing we've been hungover at different times (FG 1).

### **5.2.2 Colleagues**

The reporting of enabling behaviours and attitudes towards nurses who come to work while affected by AODs varied. All the nurse participants reported that they were aware of colleagues who had worked with hangovers. The majority commented that working with a hangover was accepted as part of nurses' working life. They

reported that to protect and accommodate colleagues who occasionally presented to work with a hangover, or had consumed alcohol before coming to work, a lighter clinical load or lighter duties were allocated. The nurses did not link working with a hangover and the potential to compromise patient safety. One nurse commented:

I don't see it as a problem if my colleague turns up to work saying 'oh my god, I had a few too many wines last night, my head's pumping, I'm going to get some panadol' and then get straight into it ... (FG 2).

While another gave a more extreme example of how nurses had enabled colleagues:

I've certainly worked with people who've struggled through the day because they've had a big night the night before ... I have had experience of a nurse sleeping through the morning duty ... she didn't do anything dangerous, she didn't do anything ... colleagues let her do it ... covered up ... (Nurse 6).

Some nurses reported that they were more likely to support a colleague who occasionally came to work with a hangover if they were friends and a popular team member. For others, it was as simple as enabling colleagues by using humor, in order to protect themselves should the need arise:

... as nurses, you look after your own ... it goes back to student and ward days ... you don't want to be a narc ... you don't want one of your own to look bad ... if she's hungover what happens the day I come hungover, am I going to be the next one? ... (FG 4).

When asked why working with a hangover, or presenting to the workplace having consumed AODs was tolerated, the majority of nurses reported that substance use, particularly alcohol use, was socially acceptable and their need to socialise and unwind from a stressful work life should not be compromised because of unsociable hours of work. Some nurses commented that regular occurrences were tolerated less, as nurses became less trusting of their colleagues and were not prepared to continually carry an extra workload. In addition, only a small number of the nurses reported that patient care could not be repeatedly compromised. When discussing their thresholds for tolerating such behaviours, one nurse suggested:

If someone was doing it all the time, I'd be a lot less tolerant and feel I needed to do something about it ... Especially if they weren't managing their work load on a regular basis... and we had to carry them ... or thought that they were incompetent in one way or another ... or you thought they might make a mistake ... (FG 5).

Another reported that enabling behaviours had been an accepted part of the nursing culture for some time:

... Is it a culture carried through nursing? I'm not sure whether this is particular to nursing culture, but most of my colleagues over the years have drunk heavily on social occasions and they get up for work the next day (FG 7).

### 5.2.3 Nurse managers

All of the nurse managers normalised the use of alcohol as a form of socialising, team building, and a way for nurses to unwind from a stressful work life. They were able to recall occasions where they had supported nurses who came to work with a hangover or had consumed alcohol before coming to work and suggested that often humour was used to accommodate such behaviours. One nurse manager gave an example of a new graduate nurse:

... one nurse came to work after partying all night, she looked dreadful, she smelt of alcohol and we sent her home ... we laughed about it (FG 6).

Some nurse managers suggested that allowing nurses to work with a hangover was accepted practice, often dependent on staffing levels, the nurse's performance and patient safety issues. The majority however, preferred that nurses admit to working with a hangover as they were able to then monitor the affected nurses' practice. One nurse manager gave an example from her team:

I find that if I have a staff member who comes to work hungover, they'll say to me in the morning even before we've left the office ... 'I'm not feeling very well, and I feel a bit hungover' – they'll admit it to the whole team before they actually walk out the door. The person has continued to function and I've said to them, 'look you're on duty, drink lots of water, if there's any concerns, speak to your colleagues and come and see me'. But I haven't

actually seen anything that's a concern, in that I haven't seen any shakes or anything like that (Nurse 3).

Other nurse managers were concerned about risk management and patient safety and preferred that if nurses were unable to practise safely, they should use their sick leave. One manager commented:

Now we are more into risk management and protecting patients, more aware of the nurse who has a hangover ... (FG 1).

A small number of nurse managers reported they were aware of nurses working while under the influence of other drugs. The majority felt that while this may have been more of an issue a number of years ago, a heightened level of awareness of personal and professional responsibility has required a change in nurses' behaviours:

The culture of nursing has changed, we have an older workforce, nursing work has changed compared to 20 years ago, there are more responsibility and legislative requirements – nurses are more professional and focused and this is reflected in competency based practising certificates required by the Nursing Council of New Zealand (FG 1).

#### **5.2.4 Directors of Nursing**

When asked about their awareness of nurses working under the influence of AODs or with a hangover from their AOD use the Directors of Nursing commented that nurses' use of AODs was similar to use in the general population and social change had fostered an environment where heavy drinking and recreational drug use were seen as normal. They reported that working with a hangover was seen by nurses as socially and professionally acceptable. One Director of Nursing gave some insight into her own level of acceptance of nurses working with a hangover:

If that person can function as part of the team, if their cognitive ability is not compromised and they are able to make appropriate decisions, to reasonably respond in an emergency – yet they felt slightly hungover with a slight headache. This may be my level of acceptance coming through ... it's about the level of impairment that you've got because of the hangover. If you're

having to sit down with your head in your hands, or you're over the toilet vomiting, that's a significant level of impairment compared to someone who is tired and a bit more lethargic, and maybe [the nurse] needs a hand with their work (Nurse 1).

The Directors of Nursing reported that an established level of tolerance in the wards and units for nurses working with a hangover resulted in affected nurses being brought to their attention only when situations became extreme. This included when affected nurses' behaviours were repeated and habitual, and often a breakdown in relationships and team dynamics had occurred. One Director of Nursing gave an example:

Nurses say they 'can't do this anymore'...we are carrying that nurse, we check the roster to check who else is on with her, so we can support her so we can support each other, because we know she won't be any good after a certain time ... (FG 5).

Another Director of Nursing explained:

Nurses are brought to my attention fairly well down the continuum [AOD use continuum]. Even if it's been known about for some time, usually, it's starting to interfere in team functioning ... (Nurse 3).

Although it is unacceptable professional behaviour, nurses presenting to work intoxicated from alcohol were tolerated more than nurses presenting to work having used illicit drugs. There was also a zero tolerance policy for the diversion of medications. As one Director of Nursing explained:

Alcohol use is more accepted than illicit drug use and diversion because [the latter] is illegal practice. It is a conduct and law issue here ... (Nurse 3).

The findings in this section suggest there is an established culture across all tiers of nursing that supports nurses working while affected by their AOD use. The nurses enabled and protected each other when working with a hangover, in part to protect themselves. Their tolerance for colleagues working with a hangover or while

otherwise affected by their AOD use became less acceptable when behaviors were repeated, they interfered with team functioning, additional workloads became prohibitive, and there was a risk that errors may occur. By accepting that working with a hangover was usual practice, the nurses did not acknowledge that they placed patients at risk. While nurse managers ‘normalized’ nurses’ alcohol use as a way of managing stress, their tolerance for nurses working with a hangover was influenced by staffing levels and their perception of the nurses’ competence to deliver safe patient care. The Directors of Nursing were aware of an established culture of tolerance in nursing that enabled nurses to work with a hangover or otherwise affected by their AOD use. They reported that they were aware that the tolerance for accepting affected nurses’ behaviors was high, and nurses were brought to their attention only when they were unable to function safely, team dynamics were disrupted, and patient safety was compromised.

### **5.3 Management issues**

This section explores issues relating to the management of nurses whose AOD use had an impact on patient care and had caused concerns in the workplace. These include: Self-management strategies employed by individual nurses when working with a hangover; the management strategies employed by nurses who worked alongside colleagues whose practice was affected by their AOD use; the issues for the nurse managers who were responsible for the safe staffing of clinical environments; and the management issues for the Directors of Nursing, who are ultimately responsible for the safety of patients, are discussed.

### 5.3.1 Individuals

The nurses commented that working with a hangover was often perceived to be preferable to letting colleagues down by taking sick leave. They reported self-rostering enabled them to plan working quieter shifts when anticipating working with a hangover. They used medications from ward supplies to provide them with relief of symptoms when working while hungover. One nurse explained:

...it is acceptable to binge drink a couple of nights per week because you don't have to get up and go to work the next morning. [Or you] have your big night out the night before then you roster yourself on a day that will be slower so that you can deal with work when you have your hangover (Nurse 7).

Another suggested:

...nurses who come to work hungover take Panadol and Maxalon<sup>6</sup> [from ward supplies] and feel a bit better ... they get better during the day ... (FG 3).

### 5.3.2 Colleagues

When nurses presented to work under the influence of AODs or hungover from their AOD use, colleagues reported a number of strategies they used to manage the affected nurses and the potential risk to patient care. They reported monitoring their colleagues' practice, 'carrying' the affected nurses throughout their work day and carefully allocating patient workloads. One nurse commented:

[I have] seen nurses ... after a work social, come into work and be supported by their colleagues, they are carried through (FG 1).

Another suggested:

You pick up the difficult patients, she'll [the affected nurse] get the easier, less complex ones (FG 3).

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<sup>6</sup> Maxalon is an anti-nausea medication

It was only when colleagues became frustrated with the affected nurses' repeated behavior, the workload for others became unmanageable, and disruption within the team became intolerable, that they were prepared to report them to their manager:

If someone was doing it all the time [working with a hangover], I'd be a lot less tolerant and feel I needed to do something about it, especially if they weren't managing their work load on a regular basis... if the team had to carry them because they weren't getting through their work, or if you thought they were incompetent in one way or another ... or you thought they might make a mistake ... (FG 5).

Some reported concern for the affected nurses and felt comfortable speaking with them while others suggested that friendship, self-interest and a sense of team were reasons to speak with a colleague before reporting their concerns to more senior staff members. One colleague gave this example:

I have said, "You look as if you are needing help, you look as if you are using alcohol to help ... what's happening for you ...?" (Nurse 7).

Another commented:

In this smaller environment we would all want to be supported when the boot is on our foot, therefore we help others and we expect to have the same treatment when it comes to us (FG 4).

Only a few reported that they ignored or displayed some punitive action towards affected nurses. The nurses reported they chose to use their emotional energy with patients rather than addressing issues in the workplace. One nurse suggested:

We don't have the energy to deal with other people's issues ... nurses' emotional work is exhausting ... (FG 5).

When nurses were asked how AOD use issues were managed in their workplace their responses varied. For some nurses, their experience was that managers had sound knowledge of their organisation's related policies and were able to sensitively and supportively manage affected nurses. One commented:

Management today would be more supportive with employee assistance programs (EAP), counselling is available and confidentiality is respected (FG 5).

Others reported that they had observed more negative responses from managers and they expressed frustration and anger when concerns for AOD affected nurses were punitively managed or ignored. Several examples were given of situations that were not managed or poorly managed, one ending with a fatality for the nurse.

### **5.3.3 Nurse managers**

Nurse managers are responsible for staffing levels and the appropriate skill mix of nurses to provide safe patient care. They reported how they managed nurses who presented to work with a hangover or under the influence of AODs and outlined how they managed an investigation following the reporting of a critical incident that often involved the diversion of medications.

The nurse managers reported that they were aware of nurses who worked with a hangover and occasionally nurses who presented to work while otherwise affected by their AOD use. As discussed above, one nurse manager commented that she preferred to be aware of nurses who were working with a hangover and she expected that they would complete their working day. In some instances, nurse managers reported that a 'local customs' management approach was taken when dealing with nurses whose AOD use had an impact on their work and no further action was required. One nurse manager explained:

We see it as something we can deal with ... we make sure they are safe ... we put them in a taxi and send them home. If they come in drunk ... we make sure they get the right help the following day ... nurses are valuable, we need to look after them (FG 1).

In other situations however, an incident may have highlighted behaviours that had previously been ignored and a more formal investigation process followed. The nurse managers reported that they often felt uncomfortable with this process and they emphasised the need for factual information and evidence before communicating with the nurse concerned. One reported:

The fluffiness of it all [the investigation process] ... there are so many inconsistencies. Unless there is hard evidence, it is very difficult ... Then there is the fear too, that you might be wrong ... you need to be 100% sure. It bodes on managers to accurately record the issues (FG 6).

Although the investigation process was guided by institutional policies, some nurse managers expressed concern that the performance issues of an affected nurse were often addressed in isolation rather than identifying any underlying issues that could have led to the nurse's occasional or habitual AOD use:

It is difficult if performance issues are associated with a dependence [on AODs]. There is not enough information to clarify whether one [alcohol] causes the other [performance issue]. You are very cautious in making a judgment and it can be very difficult. The performance issue may be managed, however the underlying issue often remains and there is no resolution (FG 1).

When critical incidents occurred, one group of nurse managers reported that it would be unusual to ask about nurses' AOD use or link the effects of their AOD use to their performance during the investigation process. One manager commented:

How many incident forms are completed due to the effects of AODs or nurses being hungover? No-one discusses AOD use or a hangover. Our follow-up is not of a sufficient depth to show the impact of AOD use on practice ... Wouldn't it be interesting to ask a nurse when she last consumed AODs, or did she have a hangover, when a critical incident occurred (FG 1).

The nurse managers reported that the management of the diversion of medications varied. They reported being aware of nurses who occasionally diverted medication from their workplace. In some instances, diversion was ignored or

medicine management policy was reviewed and for others the management of diversion was guided by institutional policy and the law:

There were a couple of examples of Temazepam<sup>7</sup> going missing. Philosophically you don't discuss who may have taken them, you may have had a suspicion though. Practice was smartened up around medicines management and the nurse involved was transferred to another ward ... we learned months later of the problem reoccurring in the new ward and alerted the Clinical Nurse Leader of what had happened ... (FG 1).

Another stated:

There is policy for drug diversion, it becomes a legal issue, there is police involvement – it is considered serious misconduct ... there is a robust process in place (FG 6).

An area of concern for all of the nurse managers was the disparity between the ways the professions of nursing and medicine managed problems related to their affected members' AOD use. Examples were given of situations where the mismanagement of nurses resulted in tragic outcomes. They identified the need for early recognition, and safe intervention and supportive management of nurses who misuse AODs. One nurse manager commented:

Medicine has always acknowledged that members of their profession will have problems with AOD use. They have an unwritten code of how to deal with their colleagues ... Nurses haven't acknowledged that some nurses may have problems with AOD use. Nursing hasn't got a plan of action ... The heightened awareness now allows us to send the nurse home to ensure that they are safe ... A few years ago we didn't know what to do, so issues were hidden under the carpet. ... there was a lot of disciplinary action and performance management. It is only now that we are starting to be savvier in the management of nurses ... (FG 1).

#### **5.3.4 Directors of Nursing**

The Directors of Nursing's primary responsibility is patient safety. As the leaders of nursing in their organizations, it is their responsibility to ensure that nurses

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<sup>7</sup> Temazepam is a medication used to promote sleep

are 'fit to practice' and provide safe patient care. The Directors of Nursing reported the following management issues: Patient safety; managing the affected nurse; managing line managers; the safety of the reporting nurse; and complying with the HPCA Act (2003).

When asked how many nurses were brought to their attention due to their use of AODs, the Directors of Nursing commented that they were sure issues remained under-reported. They reported an awareness of late sick calls and absences from work and they suspected nurses came to work with a hangover, however, they did not discuss how this was managed. One explained:

I guess it's [practice issues and absences related to AOD use] very under-reported... as a Director of Nursing I do not necessarily see it, but think, that it may happen with nurses coming on a night duty having been out prior or on a morning duty when they have been out and come to work ... I couldn't comment on how often it happens but am sure it does (Nurse 1).

All of the Directors of Nursing reported that they were more likely to see nurses whose use was nearing the dependence end of the AOD use continuum. One Director of Nursing commented:

I have seen impairment when the nurse no longer has the capacity to deal with her AOD use, the nurse has come to work incredibly drunk or has used drugs at work – prior to this there hasn't been any noted impaired judgment/functioning (Nurse 2).

When assessing nurses' 'fitness to practice', the Directors of Nursing were concerned about the nurses' ability to provide safe patient care. They suggested that the affected nurses often lacked insight into patient safety issues and, as highlighted earlier, were unable to recognize their inability to 'rationalize patient care management'. They commented that changes in the affected nurses' practice was often understated, as they may have occurred over a period of time. Although the nurses' level of clinical performance had deteriorated, the impact on patient safety

was not always obvious until a critical incident occurred and it was often at this point they became involved. One Director of Nursing explained:

There is a subtle change ... it is never well defined. There is a change in behaviour, a change in how the nurse communicates with colleagues, the nurse is often distracted and erratic, and there is secrecy ... behaviour is often subversive and covert. The nurse has mood swings ... there is an increase in workplace incidents. We hear from colleagues that the nurse was not like this two years ago ... they say there has been a dramatic swing in attitude, and an increased level of sick leave. It is often some major event that alerts you to what is happening ... connecting incidents and events takes time (Nurse 5).

While all the Directors of Nursing reported being responsive and supportive towards affected nurses, they were aware that their concern often conflicted with their responsibilities related to workplace policies and processes which included reporting to the NCNZ:

There is a tension between the health and welfare of the nurse and the need for performance management and disciplinary processes (Nurse 3).

This Director of Nursing reported that the management of affected nurses was often reactive rather than proactive and she advocated a need for employers to focus on employees' welfare and to promote health promotion strategies in the workplace:

Organizations and units can get overly concerned and go into reaction mode when there are AOD use issues ... very quickly HR becomes involved and legal advice is sought. Sometimes this is warranted, however, often an assessment of the situation is omitted, particularly if there has been a significant incident. Assessment for an AOD problem may indicate the need for treatment as well as performance management (Nurse 3).

They reported that AOD use problems often coexisted with other mental health issues for the affected nurse. One Director of Nursing explained:

Concern arises when there is some bizarre behaviour and performance issues ... we have made assumptions that there has been a drug or alcohol use issue and what has been revealed has been that the nurse has a severe and undisclosed mental health problem which has been nothing to do with drugs or alcohol ... This requires a different outcome ... there is a lack of

understanding and discernment when the issue is brought to the attention of the Clinical Nurse Leader ... Assumptions are often made that it must be a drug or alcohol problem without looking at the total pattern of behaviours ... (Nurse 5).

The Directors of Nursing were asked about how they managed their nurses' re-entry to work following an AOD offence. They suggested that inherent in the planning for nurses' successful return to work was supervision, a safe and supportive clinical environment, a negotiated contract of behaviour, and practice expectations that were driven by the level of the offence and NCNZ directives. One Director of Nursing outlined the process used in her workplace:

If a nurse comes to work in the service and has a NCNZ restriction, they work in an area with close supervision, they meet with the Director of Nursing and have a written agreement. Monitoring as requested by the NCNZ is put in place and their treatment is supported. In the first instance this is set up with the Director of Nursing, then it becomes the first line manager's responsibility. What is discussed with staff is negotiated with the nurse – particularly when related to opiate dependence and their access to medicines. Nurses who have a long term alcohol dependence are managed in a similar way (Nurse 3).

The processes and outcomes for nurses following them being reported to the NCNZ under the HPCA Act (2003) for their AOD use, or for incidents involving the diversion of medicines and illicit drug use were discussed. The Directors of Nursing reported that the NCNZ process was safe and supportive for the nurses and it was only in exceptional circumstances that nurses were dismissed from their places of work. Incidents involving the diversion of medicines were brought to the attention of the police as the profession and the organizations have a responsibility for the lawful management of the diversion of medicines and/or illicit drug use under the Medicines Act (1981), the Misuse of Drugs Act (1975), and the HPCA Act (2003). One Director of Nursing explained:

If the nurse is identified through the investigation process, or observed diverting medications, then they are written to and have time to prepare for the disciplinary process ... there are significant consequences for the nurse (Nurse 5).

Another gave an example from her experience:

We don't involve the police unless there are significant volumes [of drugs diverted] ... One case included syringes out of PCA pumps. Patient syringes were found in the nurse's home, morphine elixir was diverted and replaced with water ... large volumes were involved ... The nurse was dismissed and lost her nursing registration (Nurse 1).

Sometimes nurse managers approached the Directors of Nursing seeking advice when they suspected a nurse's performance was affected by AOD use. They reported that nurse managers were often unsure of how to recognise and manage nurses when problems arose from the nurses' AOD use and that they were tentative when discussing issues they had identified. They explained the nurse managers were concerned for the nurse and unsure about the possible implications for the nurse's registration and employment:

Often a senior nurse will come to me expressing concern for a nurse and not knowing what to do ... Often they are not wanting to directly state what the issues are, they are scooting around the edges ... There is always concern for the nurse when the senior nurse is seeking advice, it models concerns for patients – there is a tension (Nurse 5).

In response the Directors of Nursing would coach the nurse manager through a performance management process for the nurse. As previously discussed, the Directors of Nursing also supported nurse managers when transitioning nurses returning to work.

The Directors of Nursing were aware of issues that may arise for the nurse who is responsible for reporting his or her concerns about a colleague's performance or professional behaviour due to AOD use. They reported that the nurse may

experience horizontal violence as a result of speaking with a manager about a colleague and they were aware of their personal and professional safety:

The [reporting] nurses often experience hostility from colleagues, they need to be very strong and it is a very considered decision to report a colleague. They feel they are held accountable for what happens to the nurse from that point. Potentially, we need to support and protect the reporting nurse from the affected nurse and colleagues (Nurse 2).

The findings from this section show individual nurses self-managed working with a hangover by forward planning and manipulating their work environment. To minimize mistakes being made, colleagues often adjusted their workloads and responsibilities to accommodate affected nurses with an expectation that this would be reciprocated should the need arise. When behaviors were repeated and interfered with team functioning, colleagues became less tolerant and nurses were spoken to or managers became involved. The nurses were aware of management policies that supported nurses, however, several examples were given with devastating outcomes when situations were managed punitively or ignored. To ensure safe staffing levels and an appropriate skill mix of nurses, nurse managers accepted that nurses may work with a hangover. A 'local style' of management to support affected nurses was used when managing some situations and in others nurse managers followed a more formal investigation process. The nurse managers were concerned about the historical differences in the ways the nursing and medical professions managed, and the treatment options they provided for nurses and doctors with AOD use problems.

To protect patients and ensure patient safety, the Directors of Nursing are responsible for nurses' fitness to practice. The complex management of an affected nurse often included coaching their line manager and providing care for the reporting nurse. The nurses were brought to their attention, often as the result of a critical

incident, and were managed through a process guided by their organizations' policies and the HPCA Act (2003).

While there was some tolerance for the diversion of medicines by nurses and nurse managers, the diversion of medications is illegal and the Directors of Nursing's management of affected nurses was therefore guided by their organizational policies and the law.

## **5.4 Conclusion**

Altered work performance due to a hangover or nurses being otherwise affected by their AOD use was reported by 9% of nurses in the survey. When interviewed, all nurses reported an awareness of nurses who worked with a hangover and a small number were aware of nurses who worked while otherwise affected by their AOD use. The nurses and nurse managers described how they supported, protected and enabled their affected colleagues to continue working. They described an established pattern of enablement. Emphasis was placed on staffing levels and the nurses' well-being rather than the safety of patients. In contrast, the Directors of Nursing reported an awareness of nurses working with hangovers or otherwise affected by their AOD use, and they emphasised their primary responsibility was to ensure the delivery of safe patient care within their organisations.

Findings from the survey show that although nurses' access to medicines was difficult, they reported diversion of medicines from their workplace. When interviewed, the majority of nurses and nurse managers reported that the diversion of some medicines was accepted practice in nursing. When dealing with nurses who were consistently diverting medicines, the Directors of Nursing were bound by legal requirements as diversion is an illegal practice under the Medicines Act 1984.

The management of nurses whose AOD use affected their nursing practice varied between organisations. Findings from the survey show nearly half of the nurses who had observed colleagues whose AOD use had affected their performance were supportively managed, and one quarter reported such situations were ignored. Similarly, when interviewed, the majority of nurses and nurse managers reported affected nurses were usually supportively managed. There was a small number of occasions, however, where the nurses reported that situations were ignored or poorly managed, with severe consequences for the affected nurses. The Directors of Nursing reported they supportively managed nurses guided by their organisational policies and their responsibilities under the HPCA Act (2003).

The following chapter will compare the findings from Chapters Four and Five with findings for international nursing studies and the NZ general population.

## CHAPTER 6

### DISCUSSION

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This chapter discusses the significant and other findings related to the research questions: (1) What is the prevalence of alcohol and other drug use of active registered nurses in New Zealand? (2) Does registered nurses' alcohol and other drug use have implications for altered work performance and the delivery of safe patient care?

A mixed methods design was used for this research. A survey undertaken in 2005 was followed by focus group and individual interviews. The findings from this study are compared to international studies of nurses from the mid-1990s and findings for the New Zealand general population from 2002 to 2015. The findings from the interview data provide a deeper understanding of the survey results.

The following publications provide the most appropriate New Zealand population comparisons for this study: *The Health Behaviour Survey*, *The Way We Drink* (de Bonnaire et al., 2004), *The New Zealand Health Survey* (Ministry of Health, 2004) and *The New Zealand Alcohol and Drug Use Survey* (Ministry of Health, 2009). Comparisons with more recent general population studies will also be provided to show how the findings are still relevant. It is important to note that the questions, age bands and trends of AOD use utilised in the general population surveys have changed over time. Although there are similarities between findings for this study and those reported for the general population, age, gender and ethnicity differences between the RN sample and the general population sample limit more specific comparisons.

This chapter is organised under the following subheadings: Questionnaire development; alcohol use; other drug use; a desire to reduce AOD use; factors that contribute to nurses' AOD use; the effects of AOD use on work and workplace absence; altered work performance; management issues; Culture of Permissibility; strengths and limitations; implications for policy, education and practice; conclusion and recommendations for policy, practice, education and future research. The subheadings will be further explored as follows: Alcohol use – frequency, volume, and heavy drinking episodes; other drug use - cannabis use, prescription-type drug misuse; and altered work performance - contributing factors.

The main findings from this study include: Nurses' use of alcohol is similar to use in the general population; age, marital status, gender, ethnicity and main area of practice are all significantly associated with nurses' self-reported alcohol consumption; nurses' self-reported use of cannabis is less than reported in the general population; and nurses' self-reported use of non-prescribed opiates and benzodiazepines is greater than reported for the general population. The implications of nurses' self-reported AOD use for the workplace are significantly associated with age, marital status, main area of practice, hours of work per week, and alcohol use.

This is the first study specifically undertaken to explore the prevalence of self-reported AOD use of active NZ RNs and it is the first study in Australasia reporting AOD use across the continuum of use in an active RN workforce. The 73% response rate and the representative sample enhance the generalisability of the findings to the NZ nursing workforce at the time this research was undertaken.

The study involved the development of a questionnaire that is specific to the nursing workforce and nurses' AOD use and will be available for use in further studies in NZ and internationally. In addition, using both the survey and the

interviews, the study explored AOD affected nurses' altered work performance and the implications for the delivery of safe patient care. It is one of only a few studies internationally that have explored nurses' AOD use across the continuum of use.

A prevailing pattern of enablement across all tiers of nursing supported nurses working with a hangover or while otherwise affected by their AOD use. The nurses and nurse managers were more concerned about staffing levels on the wards and units and the affected nurses' wellbeing, rather than the safety of the patients. The Directors of Nursing, while recognising that their primary responsibility was safe patient care within their organisations, also ensured supportive management of AOD affected nurses.

## **6.1 Questionnaire development**

The development of the questionnaire was guided by a critical review of the literature so comparisons could be made with findings from international studies of nurses' AOD use and from the general population. The survey was designed to develop a broader understanding of nurses' self-reported use of AODs across the continuum of use from abstinence to dependence. It also provided insights into how nurses' use of AODs had an impact on their work performance and their ability to deliver safe patient care. While the survey was completed in 2005 there have been no similar nursing studies undertaken in New Zealand since that time.

## **6.2 Alcohol use**

Age, gender, marital status, ethnicity and main area of practice were all significantly associated with nurses' consumption of alcohol. Eighty-eight percent of the nurses self-reported using alcohol in the last 12 months. This is similar to the 86% reported for nurses in the US (Blazer & Mansfield, 1995), the 85% reported for

nurses in southeast England (Callaghan, 1995), and greater than the 54% reported for Taiwanese nurses in Kohsiung City (Yang et al., 2001). While Blazer and Mansfield (1995) did not report the prevalence of nurses' alcohol use *per se*, they found that nurses' alcohol use was high, given their predominantly female sample, when compared with dentists, pharmacists and physicians in the US. As in this study, Hughes et al. (2002), in their comparative study of nurses and non-nurses in the US, found nurses were no more likely than the general population to misuse alcohol.

Nurses' self-reported use of alcohol was similar to the 81% to 88% reported for the general population in New Zealand at the time of this research (de Bonnaire et al., 2004; Habgood et al., 2001; Ministry of Health, 2004, 2007a, 2009; Palmer et al., 2007a; Wilkins & Sweetsur, 2008). Although there have been some fluctuations in the prevalence of alcohol use for the general population, more recent studies show a steady decrease in the percentage of NZ adults who reported using alcohol in the last year (Fryer et al., 2011; Guiney et al., 2014; Ministry of Health, 2009, 2010, 2015a; Palmer et al., 2007b, 2009; Palmer & Kalafatellis, 2009). It is important to note that the age bands in this study differed from studies for the general population. The age range in this study was 20 to 60 plus years. This is compared with an age range 12 to 65 years of age for the general population studies.

### **6.2.1 Frequency of consumption**

Twenty-eight percent of nurses self-reported consuming alcohol two to three times per week. This compares with the 26% reported for the general population (de Bonnaire et al., 2004) and is similar to NZ adults who reported consuming alcohol once every three days (Fryer et al., 2011; Palmer et al., 2007a, 2007b, 2009; Palmer & Kalafatellis, 2009). Fifteen percent of nurses reported consuming alcohol four or more times per week. This is similar to the 16% who reported daily use of alcohol

(de Bonnaire et al., 2004) and the 16% who reported using alcohol four to six times a week (Ministry of Health, 2007a). Twenty-one percent of nurses reported consuming alcohol monthly or less and this is greater than the 16% reported for the general population (Ministry of Health, 2009). Consuming alcohol weekly or more was reported by 43% of nurses and this is less than the 61% (Ministry of Health, 2009), 54% (Ministry of Health, 2007a), 64% (de Bonnaire et al., 2004), and 59% (Ministry of Health, 2015a) reported for the general population.

There was a significant association between the self-reported frequency of nurses' alcohol consumption and age, ethnicity and main area of practice. As the age of the nurses increased, the frequency of alcohol consumption increased. This finding is similar to reports for the general population (Ministry of Health, 2004, 2007a, 2015a). Nurses who identified as NZ European, NZ Māori and other European consumed alcohol significantly more frequently and Asian nurses consumed alcohol significantly less frequently than other ethnic groups of nurses. This finding is similar to reports for the general population (Ministry of Health, 2007a, 2015a). Findings for Pacific nurses were unable to be compared with reports for the general population as there was only a small number of Pacific nurse respondents in the study. In contrast to reports for the general population (Ministry of Health, 2007a, 2009, 2015a), there was no significant difference in the frequency of male and female nurses' alcohol consumption. Nurses working in community care consumed alcohol significantly more frequently than those working in acute care.

### **6.2.2 Volume of consumption**

The self-reported volume of alcohol nurses consumed on a typical day was significantly associated with age, gender, marital status, ethnicity and main area of clinical practice. Seventy-eight percent of nurses consumed one or two standard

drinks on a typical day when drinking. As age increased, the number of standard drinks nurses consumed on a typical day when drinking, decreased. Nurses between 20 and 24 years of age consumed significantly larger volumes of alcohol than other age groups of nurses. These findings are similar to those reported by the Ministry of Health (2004; 2007a; 2009; 2015a) for the general population. Nurses who were single or had never married were significantly more likely to consume larger volumes of alcohol than those who were divorced or separated on a typical day when drinking.

NZ European nurses consumed significantly less volumes of alcohol per drinking occasion when compared with NZ Māori and Asian nurses. NZ Māori nurses consumed significantly larger volumes of alcohol when compared with Other European nurses. Other European nurses consumed significantly less volumes of alcohol when compared with Asian nurses. This differs from reports for the general population where non-Māori adults consumed more alcohol than Māori adults (Ministry of Health, 2007a). The small number of Pacific nurse respondents did not allow a comparison.

Nurses working in mental health consumed significantly larger volumes of alcohol compared to those working in critical care and community care. This differs from findings for nurses in the US, where larger volumes of alcohol were consumed by nurses working in oncology (Trinkoff & Storr, 1998a).

### **6.2.3 Episodes of heavy drinking**

Fifty-three percent of nurses self-reported drinking heavily at least once in the last 12 months. This is more than the 17% (Trinkoff & Storr, 1998b; Trinkoff et al., 2000) and 16% (Trinkoff & Storr, 1998a) of nurses in the US who reported drinking five or more drinks on at least one occasion in the past year. This finding is

similar to reports for the general population where 52% of adults 16 to 64 years reported consuming larger amounts of alcohol in 2007 (Ministry of Health, 2009).

There was a significant association between the nurses' age and episodes of heavy drinking. As nurses' age increased the number of episodes of heavy drinking significantly decreased. These findings were similar to those reported for the general population for past year drinkers (Ministry of Health, 2004, 2009, 2015a). In contrast to findings for the general population (Ministry of Health, 2007a, 2009) there was no significant difference in nurses' ethnicity and heavy drinking episodes.

While some of the nurses interviewed reported those working in mental health, accident and emergency and hospice environments were more likely to drink heavily, there was no significant association between main area of practice (critical care, community care, acute care and mental health) and episodes of heavy drinking.

#### **6.2.4 Other drug use**

**Cannabis use.** When interviewed, some nurses reported an awareness of their colleagues' recreational use of cannabis, and nurses presenting to work affected by their cannabis use. Four percent of nurses in the survey reported using cannabis in the last 12 months. This is the same as Blazer's (1995) finding in the US where 4% of nurses reported using marijuana in the last year. It does however contrast with reports for the general population where 18% (Wilkins & Sweetsur, 2008), 14% (Ministry of Health, 2007b), 15% (Ministry of Health, 2010) and more recently 11% (Ministry of Health, 2015c) reported past year cannabis use.

**Prescription-type drug misuse.** Prescription-type opiate misuse was reported by 2% of the nurses in this study and only one nurse reported using another opiate type substance. Findings from this study were greater than past year narcotic drug use (<1%) reported by Yang et al., (2001) for Taiwanese nurses, and opiate and

hallucinogen use (1%) reported for nurses in the US (Blazer & Mansfield, 1995).

Nurses' use of opiates was similar to the 1% reported for the general population (Field & Casswell, 1999; Ministry of Health, 2010).

Two percent of nurses reported prescription-type stimulant misuse. This is marginally less than the 3% reported for nurses in the US (Blazer & Mansfield, 1995) and the 4% reported for the general population in NZ (Ministry of Health, 2010).

Prescription-type benzodiazepine misuse was reported by 2% of nurses. This is less than the 19% reported for nurses in Taiwan (Yang et al., 2001) but similar to the 1% reported for the NZ general population (Field & Casswell, 1999; Ministry of Health, 2010).

When interviewed, nurses reported an awareness of colleagues misusing prescription-type drugs. For some nurses, the diversion of small amounts of medications from the workplace for personal use was regarded as accepted practice.

### **6.2.5 A desire to reduce AOD use**

Twelve per cent of nurses reported they felt the need to cut down their use of AODs. This contrasts with the 21% of US nurses who reported they were concerned that they may have been drinking too much alcohol or drinking alcohol too often (Kenna & Wood, 2004b). This finding contrasts with the 34% reported for the general population (Research New Zealand, 2014).

### **6.2.6 Factors that contribute to nurses' AOD use**

In this study, the nurses' self-reported stress (20%), anxiety (7%) and depression (5%) may have contributed to their use of AODs. Yang et al. (2001) found a positive association between nurses' regular AOD use and poor mental health status and Trinkoff (2000) reported that depressive symptoms were negatively

related to nurses' AOD use in the US. The interviewees in this study explained that they used alcohol to relax with colleagues, to unwind from the stress of nursing work, and to alleviate the stress of juggling their work and home life.

### **6.3 The effects of AOD use on work and workplace absence**

The use of AODs while at work was reported by 4% of nurses and 2% reported feeling drunk, sedated and/or high at work because of their AOD use. These findings are less than reports for the general population. Fifteen percent of adults in the general population experienced the effects of alcohol while at work, studying or doing household duties (Ministry of Health, 2007a). In addition, 11% (2007/08) and 7% (2012/13) of past year drinkers reported the 'harmful effects' associated with their alcohol use which included working while feeling under the influence of alcohol (Ministry of Health, 2009; 2015a). Seventeen percent of past year cannabis users reported working while feeling under the influence of cannabis (Ministry of Health, 2010). Seven percent reported harmful effects on their work or work opportunities (Ministry of Health, 2004) and 6% reported their cannabis use had harmful effects on their work, study or employment opportunities (Ministry of Health, 2010).

Twenty percent of the nurses reported using AODs within eight hours of going to work and 5% reported drinking alcohol before working or were concerned about going to work with alcohol on their breath. Those interviewed described a continuum of tolerance that enabled them to support colleagues who came to work affected by their AOD use and nurses who were absent from the workplace because of their AOD use.

Four percent of nurses reported being absent from work as a result of their AOD use. This is greater than the 1% of the general population who reported

absence from work due to alcohol use (Ministry of Health, 2007a) and the 3% of cannabis users aged 16 to 64 years who reported having one or more days off work or school in the past year due to their cannabis use (Ministry of Health, 2010). More recently 4% of males and 2% of females reported absence from work as a result of their drinking (Ministry of Health, 2015a).

Being late for work or leaving early because of side effects from their AOD use was reported by 3% of the nurses. This compares with 4% of nurses in the US who reported they called in sick or were late to work as a result of their alcohol use (Kenna & Wood, 2004b). The interviewees reported an awareness of colleagues who worked with a hangover. They reported that often nurses who worked with a hangover barely survived their workday and absented themselves from the workplace at the earliest possible time.

#### **6.4 Altered work performance**

Nine percent of nurses reported they had worked below their normal level of performance due to their AOD use or a hangover from their AOD use in the last 12 months. This is greater than the 6% of the general population who reported their performance in a paid job was reduced by drinking or its after-effects (Ministry of Health, 2007a), the 4% of drinkers 16 to 64 years and the 5% of drinkers 15 years and older who reported they had experienced harmful effects on their work, study or employment due to their alcohol use in the past year (Ministry of Health, 2009, 2015a). Harmful effects on work, study or work opportunities were reported by 6% of adults in the general population who had used cannabis in the last 12 months (Ministry of Health, 2007a; 2010).

The nurses who gave a positive response were asked to indicate from the examples provided, how their performance was affected. Thirty-six percent of this

group reported that they were irritable with patients, patients' families and colleagues, 25% had difficulty in managing their workloads, 17% reported altered decision-making ability and 21% of the nurses reported feeling fatigued.

Those interviewed reported that nurses presenting to work with varying degrees of hangover, or while otherwise affected by their AOD use, were accepted in most work environments. They stated that the care they provided for patients and their families and working within their teams was compromised. They suggested that often the 'tasks' of nursing were completed, but care that was more complex and required a higher level of thinking, for example critical thinking, and the emotional care of patients and families, was not provided.

Age, marital status, main area of practice and the number of hours worked per week were significantly associated with nurses working below their normal level of performance due to their AOD use or a hangover from their AOD use. Younger nurses, those who were single or had not married, nurses whose main area of practice was mental health, and those who worked more than 40 hours per week were more likely to report altered work performance.

There was a significant association between altered work performance and the self-reported frequency and volume of alcohol consumed, and heavier drinking episodes. Nurses who reported frequent alcohol use, those who reported drinking larger amounts, and those who engaged in heavier drinking episodes were more likely to report altered work performance.

Altered work performance was reported by nurses who used cannabis (40%) and misused opiates (13%), stimulants (50%) and benzodiazepines (19%). Interviewees reported that while they had an awareness of colleagues who used cannabis recreationally, it was more difficult to recognise the effects of their drug

misuse at work. This was in contrast to nurses reporting they recognised the effects of alcohol misuse in the workplace.

Sixty percent of nurses who used AODs within eight hours of going to work, 20% who were concerned that their breath smelt of alcohol at work, 40% who consumed alcohol before work or during their working day and 15% of nurses who felt drunk, sedated and/or 'high' at work also reported altered work performance. Interviewees reported being aware when their colleagues presented for work within a few hours of consuming alcohol and/or cannabis. This often occurred when nurses were rostered to work a night duty. The nurses' justification for their 'normal' use of alcohol and 'safe' cannabis use was, they claimed, often guided by their pharmacological knowledge. Colleagues who used AODs immediately before work believed they were able to deliver safe patient care.

Twenty percent of the nurses who reported being late for work or leaving early because of side effects of their AOD use, and 24% who reported being absent from work because of a hangover caused by their AOD use, also reported altered work performance.

**Contributing factors.** Nurses who self-reported that stress (60%) anxiety (21%) and depression (14%) contributed to their AOD use also reported altered work performance.

## **6.5 Management issues**

Very few nurses (1%) reported being spoken to by a colleague about the impact their AOD use had on their practice. Sixteen percent of the nurses knew of a colleague who was reported to management or their employer for their AOD use. Half of this latter group of nurses was supportively managed, for 13% their situations were ignored, and 10% of these nurses lost their jobs. Four percent of

nurses reported they knew of a colleague who had changed their employment fearing their AOD use may be discovered.

Those interviewed stated that nurses used self-management strategies including forward planning by rostering quieter duties and manipulating their work environment by taking a 'lighter' workload, to manage while working with a hangover or anticipating working with a hangover. They commented that there was an element of self interest in minimising workloads and protecting their affected colleagues as they could then expect the same support if they required it. For some nurses however, there came a point, usually when behaviours were repeated and increasing workloads became intolerable, that their colleagues were either spoken to by peers or their managers became involved. Speaking with a colleague about their AOD use for some nurses was less difficult as their colleagues were often their friends as well. For others, however, this was difficult and uncomfortable and more appropriately dealt with by the managers.

In contrast, nurses in the US reported that their personal ethics; their perception of the right thing to do; issues related to patient safety; a breach of patients' rights; compliance with organisational policy and procedures (King III & Hermodson, 2000); the seriousness and intentionality of an incident (King III, 2001); a permissive attitude toward AOD use and an optimistic view towards treatment (Beckstead, 2002) influenced their decision to report a colleague's incompetence as a result of AOD use.

The interviewed nurses reported being aware of potential consequences for their colleagues' future employment and their nursing registration if management processes became formalised. In most instances practice issues were managed by nurse managers, however, when a nurse's misuse of AODs became repeated,

problematic or unlawful, the Director of Nursing became involved. They employed 'local customs', organizational policies and/or the NCNZ process to supportively guide their management decisions. The interviewees reported that the majority of their colleagues were managed through a supportive process that promoted their wellness and continued employment. On the rare occasions that a colleague presented to work intoxicated, the affected nurse was discreetly removed from the workplace, sent home and managed the following day.

As mentioned above, while the nurses and nurse managers reported an awareness of their colleagues' recreational cannabis use, they commented that the effects of opiate, stimulant and benzodiazepine use were more difficult to recognise in the workplace and as such, were often missed or ignored. The diversion of medicines from the workplace for personal use was often accepted practice, although this practice had become more difficult as the management of medicines was increasingly monitored. In contrast, the Directors of Nursing reported they had zero tolerance for nurses working while affected by their illicit drug use. Lewis (1997) defines zero tolerance as having no tolerance for the effects of AOD use in the workplace.

Similarly, nurses in the US reported an awareness of, and tolerance for, their colleagues' recreational drug use (Beckstead, 2005a). They became less tolerant however, when drug use affected their colleagues' work and when drugs were used at work. They considered nurses working under the influence of any type of substance a serious offence. How colleagues used AODs influenced the nurses' decisions to report incompetent practice. Nurses were more likely to tolerate incompetence resulting from alcohol and cannabis use whereas the recreational use of opiates was more likely to be reported. Nurses were more likely to be reported by

their colleagues, when repeated patterns of incompetence compromised patient care (Beckstead, 2005a).

## **6.6 Culture of Permissibility**

Scanlon's (2008) concept of permissibility provides a way of understanding why colleagues and nurse managers accepted nurses working with a hangover or when otherwise affected by their AOD use. Scanlon explained that the notion of permissibility only arose when there was a choice of actions for agents (nurses). He argued that whether an action was permissible or not, was guided by the agent's intention when acting and the meaning of their action for others or their 'moral intent'.

Nurses and their managers make a choice when they enable their colleagues to work with a hangover from their AOD use or when they are otherwise affected by their AOD use. Scanlon's concept of permissibility and its underlying moral intent will guide my discussion of the enabling environment that has developed in the nurses' clinical workplace.

Findings from this study show that the affected nurses made a choice about coming to work with a hangover. They believed it was better to be at work than to leave their workplace short of staff. They showed little insight into how working with the effects of their AOD use or a hangover compromised their ability to provide safe patient care.

The affected nurses' colleagues reported they made a choice to support nurses who came to work with a hangover. Their reasons for supporting their colleagues were that they would rather a nurse work while affected by AOD use or a hangover than risk being short of staff as this could compromise the team's ability to deliver safe patient care; they were prepared to monitor an affected nurse's clinical

work and undertake extra clinical work themselves to ensure that patients and their families came to no harm; and they would expect that their colleagues would support them given a similar situation. The moral intent (Scanlon, 2008) for their decisions was based on protecting patient safety by maintaining staffing levels, supporting their affected colleagues by protecting their employment and/or professional registration, and ensuring they would be supported should they come to work affected by AOD use.

Similarly, an awareness of nurses' illicit drug use that affected their work performance, and the diversion of medicines from the workplace were tolerated. In contrast to working under the influence of alcohol, these nurses were further protected by a 'conspiracy of silence'. The moral intent for these decisions was the same as for the alcohol affected nurses. The protection of AOD affected nurses by their colleagues and nurse managers, enabling them to continue working, has fostered the development of a culture of permissibility among nurses.

This is further illustrated by the interviewed nurse managers arguing that in these situations they were able to protect patients by monitoring nurses working with a hangover. They believed that by doing this, they were supporting the nurses. The moral intent of their actions was twofold: Promoting safe patient care by ensuring a full complement of staff and protection of the nurses by supervising their practice. For the nurse managers, their decisions were influenced by their responsibility to provide the required nurse-patient ratios when staffing their clinical environments. They believed that they could prevent individual nurses from causing harm to patients by direct or indirect monitoring of the affected nurses' work.

The Directors of Nursing reported that they 'suspected' that some nurses worked with hangovers. However, it was only when a nurse's use of AODs was

severely impacting the care they provided to patients and their families that the Directors of Nursing became involved in their management. The nurses brought to their attention were often at the dependence end of the AOD use continuum and the nurses were no longer able to hide the effect their AOD use was having on their work. For some, a critical incident occurred and for others, colleagues were no longer prepared to support their behaviour. They had moved beyond what was acceptable within the established culture of permissibility.

Decisions about how the reported nurses were managed were made by the Directors of Nursing and guided by organisational policy, the NCNZ's regulations under the HPCA Act (2003) and the law. The Directors of Nursing reported that their response to each situation was driven in the first instance by concern for the safety of patients and secondly concern for the nurse's wellbeing. In response to a nurse being brought to their attention, the Directors of Nursing employed a number of strategies to manage the affected nurse. These included 'in house' management where the nurse was provided an individual supervisor to work alongside him/her and monitor his/her practice, or the nurse was transferred to a different clinical environment. On occasions, the Directors of Nursing discussed the nurse's care with the NCNZ to seek advice about their obligations under the HPCA Act (2003). When nurses were officially referred to the NCNZ the Directors of Nursing reported that they continued to support them through the NCNZ's processes.

Similar to the nurse managers, the Directors of Nursing made a choice about whether to act on their suspicions that nurses worked while affected by their AOD use. The moral intent of the Directors of Nursing when making decisions that enabled the nurses to continue practising was twofold: To ensure safe patient care by providing close clinical supervision, and to protect the well-being of the affected

nurses. The moral intent when formally reporting affected nurses to the NCNZ was primarily protection of the public. The Directors of Nursing advised they also provide support for the nurses as they go through the NCNZ process.

The Directors of Nursing have a mandate under the HPCA Act (2003) Section 34, to report AOD affected nurses to the NCNZ if they have “reason to believe that a health practitioner is unable to perform the functions required for the practice of his or her profession because of some mental or physical condition” (p. 38). This influences the decisions they make when individual nurses are brought to their attention. However, when they reported they ‘suspected’ that some nurses worked with a hangover, but they did not follow it up, the Directors of Nursing enabled the culture of permissibility to continue.

The findings from this study demonstrate that there is an established culture of permissibility in health service organisations across the country. This provides an environment that potentially compromises the safety of patients and affected nurses’ employment and professional registration. It places health service organisations at risk in an increasing litigious environment and has the potential to bring the discipline of nursing into disrepute.

In the interests of patient safety, if health service organisations adopted and enacted a policy of zero tolerance for clinicians working while affected by their AOD use, nursing’s culture of permissibility would cease. Alongside a policy of zero tolerance, the development and enactment of clear and supportive policy focused on the recognition, recovery and re-entry to work for AOD affected nurses needs to be developed.

## **6.7 Strengths and limitations**

This is the first national study to focus on the prevalence of self-reported AOD use across the continuum of use for NZ nurses. To gain the highest possible response rate, five contacts, including two reminder cards, were sent to every potential participant and an online response option was offered (Dillman, 2000; Szirony, Price, Telljohann, & Wolfe, 2002; VanGeest & Johnson, 2011). An important strength of this study is that a 73% response rate was achieved and the sample was representative of the nursing workforce at the time of the research.

The development of the questionnaire specifically designed to gather a comprehensive range of data on the prevalence of AOD use across the continuum of use, and altered work performance and associated harms, add strength to this research. The questionnaire is available for use internationally. It was designed to elicit data that could be compared to findings from international studies of nurses and NZ general population studies at the time the study was undertaken.

A postal survey was used to gather large quantities of self-reported data from a nationally representative sample of active RN's (Dillman, 2000; Trinkoff & Storr, 1997). This strategy ensured the anonymity of the nurses and confidentiality of their information (Gibbs, 1997; Kitzinger, 1995; Krueger & Casey, 2000; Polit & Beck, 2004; Singer et al., 1995; Trinkoff & Storr, 1997). An online response option provided a choice of response mode and may have encouraged some nurses who would not have otherwise responded (Guise, Chambers, Välimäki, & Makkonen, 2010; Tourangeau & Yan, 2007).

Using the NCNZ's national data base and having the Council randomly sampling active RNs enabled a more representative sample than could have been obtained in any other way. The distribution of the questionnaires by the Council

provided distance between the researcher and the nurses (Dillman, 2000; Tourangeau & Yan, 2007). To ensure construct validity, the questionnaire was peer reviewed by clinical and academic experts in the field in the US, Australia and New Zealand.

Under-reporting of self-reported alcohol and drug use can be a limitation when researching in this area. To promote accurate recall, the respondents were asked to recall their past year's use of AODs rather than life time use (Johnson & Fendrich, 2005; Stockwell et al., 2004). The use of standard drink measures in the questionnaire enabled comparisons to be made with other studies of nurses and the NZ general population studies.

Nurses, in disclosing sensitive information, may have had concerns about confidentiality and perceived a potential threat to their employment and nursing registration (Johnson & Fendrich, 2005; Trinkoff & Storr, 1997). An additional strength of this study was the strategy used to inform the participants how the anonymity and confidentiality of their responses would be managed. A letter outlining the process of the questionnaire delivery and assurance that every effort had been taken to ensure the anonymity and confidentiality of the information gathered was included with the survey and online response option (Dillman, 2000; Szirony et al., 2002; VanGeest & Johnson, 2011).

This was the first mixed methods study using a survey and interviews to gather a broad range of information from active RNs, nurse managers and Directors of Nursing on nurses' use of AODs across the continuum of use. An additional strength is that the study is one of few studies internationally that has explored altered work performance across the continuum of AOD use and the consequent implications for safe patient care and nurses' responsibility and accountability under the HPCA Act (2003). Focus groups and individual interviews were used to provide

a deeper understanding of the survey findings, and more specifically, findings related to altered work performance, enabling behaviours and management issues.

The depth of data gathered from interviewing the different levels of nurses from metropolitan, provincial and rural areas enhances the strength of this research. It provides insights not accessible through the survey alone and provides a depth of understanding of related management issues. Additionally, when gathering focus group data, a fictitious scenario was used to initiate discussion and reduce social pressures within the group that may have discouraged nurses from reporting honestly and accurately (Hollander, 2004; Kitzinger, 1995; Polit & Beck, 2004).

While the length of time since the study was undertaken could be regarded as a limitation, the findings have been compared with the most recent research findings from international studies of nurses and the NZ general population and there have been no marked changes. There have been no similar studies undertaken in NZ since the time of this research.

## **6.8 Implications for policy, education and practice**

In the interests of providing safe patient care, employers of nurses need to implement policies that reflect responsible use of AODs. These should include a zero-tolerance policy for nurses using AODs at work and working with a hangover or otherwise affected by their AOD use. A zero-tolerance policy would mean that there would be no tolerance for the effects of AOD use in the workplace. Similar policies and education initiatives have been implemented effectively in the aviation industry (Cook, 1997).

To ensure the safety of patients, and change the existing culture of permissibility, it is imperative that ward managers and nurses are made aware of their accountability under the HPCA Act (2003) and the NCNZ's professional Code

of Conduct for nurses (2012). These documents require nurses to notify The Council if they have “reason to believe that a health practitioner is unable to perform the functions required for the practice of his or her profession because of some mental or physical condition” (p. 38).

A peer assistance program needs to be developed. While this program should be independent of employers of nurses, the NCNZ and nurses’ industrial organisations, the program would work collaboratively with these organisations to ensure a nurse’s fitness to practise and provide safe patient care. As an alternative to a formal disciplinary process, a peer assistance program would enable nurses to confidentially self-refer for assistance, gain access to treatment options, and expect ongoing support. Education programs for undergraduate students and RNs should highlight the responsible use of AODs and associated issues for nurses, an understanding of zero tolerance for safe patient care and highlight their responsibilities under the NCNZ Code of Conduct (2012) and HPCA Act (2003).

## **6.9 Conclusion**

NZ nurses use alcohol to celebrate, commiserate and build a sense of camaraderie, as do other members of the population. They also use it to relax, unwind and socialise. As for other New Zealanders, some nurses work within eight hours of AOD use and/or while still affected by their AOD use. As nursing is a high-risk occupation, there is a real concern for the safety of the patients nurses care for. This has been enabled by an embedded culture of permissibility.

The embedded culture of permissibility has developed across all tiers of nursing despite nurses being required by the HPCA Act (2003) and the NCNZ’s professional Code of Conduct for nurses (2012) to maintain professional standards of competence and provide safe care to patients and their families. As well as putting

patients at risk, the embedded culture has the potential to compromise the affected nurses' employment and nursing registration.

To actively discourage the continuation of the culture of permissibility, health service organisations need to develop policies that include a zero-tolerance for nurses working with a hangover or while otherwise affected by their AOD use.

## CHAPTER 7

### CONCLUSION

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This study is the first NZ research aimed to investigate New Zealand RN's use of alcohol and other drugs across the continuum of use and the implications for altered work performance and safe patient care. It is also one of few studies internationally to estimate the prevalence of AOD use across the continuum of use for a nationally representative sample of active RN's and examine issues related to altered work performance and safe patient care.

The study found that nurses' self-reported use of alcohol was similar to reports for the NZ general population at that time. Nurses' self-reported use of cannabis was less than reports for the general population, this may have been in part due to their reluctance to report their personal use of an illegal substance as it has implications for their license to practice. Nurses' self-reported use of opiates and benzodiazepines was slightly more than reported for the general population, and this may reflect work place access to these medications.

Nurses who reported working below their level of performance due to a hangover or while affected by their AOD use, also reported that their critical thinking and decision-making abilities were altered and they neglected to provide emotional care to patients and their families. Nurse colleagues and nurse managers described an established pattern of enablement that unintentionally placed patients at risk. In contrast, the Directors of Nursing emphasized their primary responsibility under the HPCA Act (2003) was to ensure the delivery of safe patient care within their organisations. Although illegal, the diversion of some medicines from the workplace was accepted practice by the majority of RNs and managers of nurses.

The Directors of Nursing, however, were bound by legal requirements under the Misuse of Drugs Act 1975 to report an offence against the Act.

The management of nurses whose AOD use affected their nursing practice varied within organisations. RNs and nurse managers concern was to ensure they had sufficient staff on the wards to meet their organisations' requirements. This took precedence over the AOD effected nurses' risk to their patients. Working with AOD effected nurses became and accepted practice in some situations. In contrast the Directors of Nursing were guided by their organisational policies and their responsibilities under the HPCA Act (2003) when AOD effected nurses were brought to their attention, especially those whose AOD use compromised patient safety and/or those who diverted medicines from the workplace.

An embedded culture of permissibility has developed across all tiers of nursing despite nurses being required by the HPCA Act (2003) and the NCNZ's professional Code of Conduct (2012) for nurses to maintain professional standards of competence and provide safe care to patients and their families. As well as putting patients at risk, the prevailing culture has the potential to compromise the affected nurses' employment and nursing registration.

To actively discourage the continuation of the culture of permissibility, health service organisations need to develop policies that include a zero-tolerance for nurses working with a hangover or while otherwise affected by their AOD use. They also need to establish AOD workforce education for nurses and nursing students to ensure they understand their legal and moral responsibilities. These measures would reduce preventable error for patients and litigious risk for the health service providers.

There have been some changes in the nursing workforce in the last decade including an increase in the numbers of internationally qualified RNs, younger nurses and nurses over the age of 65 years who are currently employed in nursing positions (Nursing Council of New Zealand, 2015). These workforce changes may impact on findings for future studies in this area.

Although this study was undertaken in 2005 the findings are still relevant as they show that nurses' AOD use was comparable to the findings from the NZ general population studies at that time. More recently, the general population studies have reported a decrease in the prevalence of alcohol use and amphetamine use. It could be expected therefore, that findings from a repeated study adjusted for contemporary recreational drug use, would remain comparable to the general population as nurses are a sub-group of the population.

The author's current research project is focused on the implications of the HPCA Act (2003) for policy development and the management of nurses, who as a result of their problematic AOD use have been reported to the Nursing Council of New Zealand.

## **7.1 Recommendations for policy, practice, education and future research**

In light of the findings from this research the following recommendations are made:

- A zero-tolerance policy be introduced for nurses working with a hangover or while otherwise affected by their AOD use. This health promotion policy should include random breath testing and random drug testing of nurses.

- Ward managers and nurses be made aware of their accountability under the HPCA Act (2003) and the NCNZ's professional Code of Conduct for nurses (2012) to ensure the safety of patients, change the existing culture of permissibility and reduce the litigious risk for the health service organisations.
- To ensure the consistent, fair and supportive management of nurses, the NCNZ needs to establish a memorandum of understanding with employers of nurses to guide the management of those whose alcohol and other drug use is brought to their attention.
- A nationally based peer assistance program for nurses be developed. This health promotion program would assist nurses to gain access to early interventions, treatment options, education, regional contacts, peer support, re-entry to work support and a national helpline. The program should work in collaboration with, and independent of, employers of nurses, the NCNZ and nurses' industrial organisations.
- Undergraduate, postgraduate, professional and continuing education programs for nurses should include information on the range of issues related to the responsible use of alcohol and other drugs by nurses.
- Further research should include:
  - A repeat study, using the same questionnaire to explore current trends in NZ nurses' patterns of AOD use. Additional questions exploring the use of contemporary recreational drugs should be added.
  - The exploration of work/employment/environmental influences that may contribute to nurses' use of AODs. This should include

investigating factors that predispose nurses to misusing AODs, nurses' access to medications, and differences between nursing specialties and AOD use.

- An exploration of the effectiveness of current policy and management strategies and re-entry to work programs for nurses whose AOD misuse has had an impact on their ability to provide safe patient care.
- A study exploring nurses' awareness of their responsibilities related to AOD use under the HPCA Act (2003) and the NCNZ's professional Code of Conduct for nurses (2012).

## Appendix A

### ALCOHOL AND OTHER DRUG USE BY REGISTERED NURSES IN NEW ZEALAND

Please indicate your response by placing a tick in the appropriate box(es). Please answer each question.

#### ALCOHOL

The following questions are about your use of alcohol beverages in the **last 12 months**. In these questions, a standard 'drink' is equal to: **300 mls** (can or stubby of beer), **100 mls** (small glass of wine) or **30 mls** (single spirits). (Note: **one RTD** [Ready to Drink] is approximately 1.5 standard drinks)

1. How often do you have a drink(s) containing alcohol?  
 Never - **go to Q6**  
 Monthly or less  
 2 to 3 times a week  
 2 to 4 times a month  
 4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you drink alcohol?  
 1 or 2  
 3 or 4  
 5 or 6  
 7 to 9  
 10 or more
3. How often do you have **4** (female), **6** (male) or more drinks on one occasion?  
 Never  
 Less than monthly  
 Monthly  
 Weekly  
 Daily or almost daily

In the **last 12 months**

4. Have you consumed alcohol, or been concerned that alcohol was on your breath, before going to work?  
 Always  
 Frequently  
 Occasionally  
 Rarely  
 Never
5. Have you consumed alcohol during your working day?  
 Always  
 Frequently  
 Occasionally  
 Rarely  
 Never

#### OTHER DRUG USE

The following questions are related to your drug use in the **last 12 months**.

**Cannabis products** (e.g. marijuana, hashish, oil)

6. Have you used cannabis products in the last 12 months?  
 No - **go to Q8**  
 Yes
7. How often do you use cannabis products?  
 Monthly or less  
 2 to 3 times a week  
 2 to 4 times a month  
 4 or more times a week

#### Opiate use

8. Have you used prescription opiates (e.g. morphine, MSTs, codeine, methadone) in the last 12 months?  
 No - **go to Q13**  
 Yes
9. Were the opiates prescribed in your name?  
 No - **go to Q11**  
 Yes
10. If the opiates were prescribed in your name, did you self-administer more than was prescribed?  
 Yes  
 No
11. Was the opiate use appropriate for your medical or psychological diagnosis at that time?  
 Yes  
 No

12. How often do you use opiates?  
 Monthly or less                       2 to 4 times a month  
 2 to 3 times a week                       4 or more times a week
13. Have you used any other opiate type substance e.g. heroin, homebake, poppies?  
 Yes  No

**Stimulant use** (The group of drugs commonly known as 'speed' e.g. methamphetamine, 'P', Ritalin, "diet pills", ecstasy, cocaine)

14. Have you used any stimulants in the last 12 months?  
 No – **go to Q19**                       Yes
15. If the stimulant use was pharmaceutical medication, was this prescribed in your name?  
 No - **go to Q17**                       Yes
16. If the stimulant was prescribed in your name, did you self-administer more than was prescribed?  
 Yes                       No
17. Was the stimulant use appropriate for your medical or psychological diagnosis at that time?  
 Yes                       No
18. How often do you use stimulant type drugs?  
 Monthly or less                       2 to 4 times a month  
 2 to 3 times a week                       4 or more times a week

**Benzodiazepine use** (Sedatives/hypnotics e.g. Diazepam, Triazolam, Oxazepam, Temazepam)

19. Have you used benzodiazepines in the past 12 months?  
 No – **go to Q24**                       Yes
20. Were the benzodiazepines prescribed in your name?  
 No – **go to Q22**                       Yes
21. If the benzodiazepine was prescribed in your name, did you self-administer more than was prescribed?  
 Yes                       No
22. Was the benzodiazepine use appropriate to your medical or psychological diagnosis at that time?  
 Yes                       No
23. How often do you use benzodiazepines?  
 Monthly or less                       2 to 4 times a month  
 2 to 3 times a week                       4 or more times a week

In relation to alcohol and the other drugs mentioned above - In the last **12 months**, have you ...

24. Used alcohol or other drugs within 8 hours of going to work?  
 Always                       Frequently                       Occasionally                       Rarely                       Never
25. Used alcohol or other drugs at work?  
 Always                       Frequently                       Occasionally                       Rarely                       Never

The following questions also relate to alcohol and drug use (as mentioned above) and the potential for altered work performance in the **last 12 months**.

26. I worked below my normal level of performance due to alcohol/drug use or a hangover from alcohol/drug use  
 Never- **go to Q28**                       Always                       Frequently                       Occasionally                       Rarely

## Appendix A

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27. Examples of this include (you may choose more than one)
- altered decision-making ability
  - irritability with patients, families, colleagues
  - difficulty in managing workload
  - medication errors
  - technical difficulties e.g. reconstituting and administering of IV medicines
  - other – please specify \_\_\_\_\_
28. I was late for work or left early because of side effects caused by alcohol/drug use
- Always
  - Frequently
  - Occasionally
  - Rarely
  - Never
29. I did not come to work at all because of a 'hangover' caused by alcohol/drug use
- Always
  - Frequently
  - Occasionally
  - Rarely
  - Never
30. I have felt drunk, sedated or 'high' at work because of alcohol/drug use
- Always
  - Frequently
  - Occasionally
  - Rarely
  - Never

### **General questions**

The following questions are related to the medications mentioned above (opiates, benzodiazepines, stimulants) and your experience **over the last 12 months**.

31. Do you know of a nurse who may ingest or acquire medications from
- the work place
  - colleagues
  - patient supplies
  - Other (please specify) \_\_\_\_\_
32. Do you ever ingest or acquire medications from
- your work place
  - colleagues
  - patient supplies
  - Other (please specify) \_\_\_\_\_
  - No - go to Q34
33. How easy is it for you to obtain medications from your workplace?
- very easy
  - moderately easy
  - difficult
  - N/A

Again, the following questions are related to your experience **over the last 12 months**.

34. Have you been spoken to by a colleague about the impact your alcohol and/or drug use has had on your work?
- No
  - Yes
35. Have you known of a colleague who has been reported to management/their employer for alcohol and/or other drug use?
- No – go to Q37
  - Yes
36. Please indicate the manager's/employer's response to the reported nurse
- Supportive towards rehabilitation/recovery
  - The problem was ignored
  - Loss of job
  - Other (please specify) \_\_\_\_\_
37. Have you been reported to management/your employer for alcohol or other drug use?
- No - go to Q39
  - Yes
38. Please indicate your manager's/employer's response
- Supportive towards rehabilitation/recovery
  - The problem was ignored
  - Loss of job
  - Other (please specify) \_\_\_\_\_
39. Have you known a colleague who has changed employment through fear that their alcohol and/or drug use would be discovered?
- Yes
  - No
40. Have you changed employment through fear that your alcohol and/or drug use would be discovered?
- Yes
  - No

41. Have you attended any formal education sessions on alcohol and other drug use within nursing? (You may choose more than one)
- No                       Inservice  
 Undergraduate         Special interest group  
 Postgraduate            Other – specify \_\_\_\_\_
42. In the last 12 months, have you ever used alcohol or drugs more than you meant to?  
 Yes                       No
43. Do you think that stress; anxiety and/or depression may have contributed to your alcohol and/or drug use? (You may choose more than one)  
 stress                   anxiety                   depression               No
44. Have you felt you wanted or needed to cut down on your drinking or drug use in the last 12 months?  
 Yes                       No

**Demographic data**

45. Age  
 20 – 24                   25 – 29                   30 – 34                   35 – 39                   40 - 44  
 45 – 49                   50 – 54                   55 – 59                   60 plus
46. Gender  
 Female                   Male
47. Marital status  
 never married/single     married /defacto                   divorced/separated                   widowed
48. Primary region of practice  
 Northland                   Taranaki                   Wellington                   Waikato  
 Auckland                   Nelson                       West Coast                   Bay of Plenty  
 Marlborough               Canterbury                   Hawkes Bay                   Otago  
 Southland                   Manawatu-Wanganui     Tasman                       Gisborne
49. Ethnicity  
 NZ European                   Pacific Peoples                   Asian  
 NZ Maori                       Other European                   Other
50. Your **main** area of practice  
 Emergency and Trauma                   Medical (including educating patients)  
 Assessment and rehabilitation                   Mental health (including substance abuse)  
 Child health including neonatology                   Obstetrics/Maternity  
 Continuing care (elderly)                   Occupational health  
 District nursing                       Palliative care  
 Family planning/sexual health                   Perioperative care (Theatre)  
 Intellectual disability                       Primary health care (including practice nursing)  
 Intensive care/Coronary care                   Public health  
 Bureau/Casual pool                       Surgical  
 Other (please specify) \_\_\_\_\_
51. How many hours do you work in a 'typical' working week?  
 Under 20 hours                   20 – 40 hours                   Over 40 hours
52. These hours are comprised of (you may choose more than one)  
 Rotating shift work                   Morning duties                   Afternoon duties  
 Night duties                       Day shifts

## Appendix A

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Your comments on any part of the questionnaire would be appreciated.

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### Support contact phone numbers

If you feel you would like further information or opportunity to discuss issues raised as a result of completing this survey, the following numbers may be useful.

Community Alcohol and Drug Services – see the phone directory for your Regional service

Alcohol Drug Helpline (10am – 10pm Daily) – 0800 787 797

ALAC Website – [www.alcohol.org.nz](http://www.alcohol.org.nz)

Employee Assistance Programme (EAP) at your place of employment

## Appendix B

### SCHOOL OF NURSING

#### Letter of Introduction

Project title: Alcohol and other drug use  
by nurses in New Zealand

Date: 23 May 2005



**THE UNIVERSITY OF AUCKLAND**  
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The University of Auckland  
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85 Park Road, Grafton  
[www.health.auckland.ac.nz](http://www.health.auckland.ac.nz)

Telephone: 64 9 373 7599

Dear Colleague

Your name has been randomly selected by the Nursing Council of New Zealand from their database of active registered nurses, as a potential participant for this research. Within the next week, the Nursing Council will forward you by mail a request to complete a brief questionnaire either in paper format or online, for my PhD research project that is being undertaken in the School of Nursing, at the University of Auckland. Your participation in this research is voluntary.

The research project includes data collection from a national survey of a random sample of registered nurses, and focus group and individual interviews. The survey questionnaire you will receive looks at the occurrence and potential workplace relevance of alcohol and other drug use by registered nurses.

The Nursing Council has forwarded this letter to you on my behalf, as often people appreciate prior notice of receiving a questionnaire. This research is important as it will give some indication of the occurrence of alcohol and other drug use in the registered nursing workforce and results may highlight the need to provide support for individual nurses in the workplace to ensure the safe delivery of patient care.

Your contribution to this research is valuable. Thank you for your time and reflection.

If you have any questions about this research please contact me or my supervisor Associate Professor Mary Finlayson using the details below.

Sincerely,

Marea Topp, RN

Researcher	Supervisor
Marea Topp Ph: 0800 867791 (pin number 0550) Email: <a href="mailto:mtopp@paradise.net.nz">mtopp@paradise.net.nz</a>	Dr Mary Finlayson Ph: 09 3737599 ext 88508

## Appendix C

### SCHOOL OF NURSING

#### Participant information sheet Survey

Project title: Alcohol and Other Drug  
use by Registered Nurses in New Zealand

Researcher name: Marea Topp

Dear Colleague

I am a registered nurse and PhD candidate in the School of Nursing, University of Auckland. Your name has been randomly selected as a participant for this project utilizing the Nursing Council of New Zealand database of active registered nurses in New Zealand. Your participation is voluntary, you have no obligation to participate.

The research project Alcohol and other drug use of registered nurses in New Zealand, includes data collection from a national survey of registered nurses randomly selected from the NCNZ data base, focus groups and individual interviews. The survey aims to look at the occurrence of alcohol and other drug use of registered nurses and potential implications for patient care and nursing welfare. It is important as the results may highlight the need to provide support for individual nurses in the workplace to ensure the safe delivery of patient care. Application for funding of this research is being sought from a NERF scholarship, the Ray and Val Allen Trust, University of Auckland graduate funding and New Horizons for Women Trust (Inc). and the New Zealand Federation of University Women. The final report from this research will be submitted to the University of Auckland as a PhD thesis.

You are invited to participate in this research by completing and returning the enclosed anonymous questionnaire, it should take you approximately 15 minutes. Alternatively you are able to access, complete and submit this questionnaire online at <http://203.79.116.110/survey/> . You will note a ***user name and password on the top right had corner*** of your questionnaire form. These will allow you online access to the questionnaire. Two reminder notices will be sent out to all selected participants after you receive this questionnaire. The first will be sent one week after receiving this questionnaire and another in two weeks time. If you have already returned your questionnaire either in the post or online, please ignore these reminders.

There are no identifiers on your questionnaire and your consent to participate in this research is indicated by your postal return or online submission of the completed questionnaire.



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The raw data from this questionnaire will be stored for 5 years in a locked cabinet at the researchers home and then destroyed by the researcher.

To ensure your anonymity as a participant in this research there is no coding on the questionnaires. I have provided the NCNZ with sealed envelopes containing this information sheet, a questionnaire and self addressed envelope for distribution. An independent provider has made passwords for and access to the online questionnaire available. Data recorded online will remain anonymous with the raw data only, forwarded to the researcher.

If you would like further information or an opportunity to discuss issues raised as a result of participating in this survey, the following phone numbers may be useful.

Community Alcohol and Drug Services – see the phone directory for your Regional service

Alcohol Drug Helpline (10am – 10pm Daily) – 0800 787 797

ALAC Website – [www.alcohol.org.nz](http://www.alcohol.org.nz)

Employee Assistance Program (EAP) at your place of employment.

If you have any questions about the research or the questionnaire, I am able to be contacted at 0800 867791 (pin number 0550) or email me at [mtopp@paradise.net.nz](mailto:mtopp@paradise.net.nz). My supervisor, Associate Professor Mary Finlayson and Head of School, Associate Professor Judy Kilpatrick can be contacted using the details below.

For ethical concerns contact: The Chair, The University of Auckland Human Participants Ethics Committee, Office of the Vice Chancellor, Research Office, Level 2, 76 Symonds Street, Auckland. Telephone: 373 7599 extn 87830.

Your contribution to this research is valuable. Thank you for taking time to complete this questionnaire.

Marea Topp RN

Researcher	Supervisor	HOD
Marea Topp Ph: 0800 867791 (pin number 0550) Email: <a href="mailto:mtopp@paradise.net.nz">mtopp@paradise.net.nz</a>	Dr Mary Finlayson Ph: 09 3737599 ext 88508	Judi Kilpatrick Ph: 09 3737599 ext 82897

This research has been approved by the University of Auckland Human Participants Ethics Committee on 1 December 2004 to 1 December 2007 for three years. Reference number 2004/383

## Appendix D

Invitation to attend a focus group or individual interview

If you are interested in discussing any of these issues further, focus groups and individual interviews are being held in the *Canterbury, West Coast, Auckland, Bay of Plenty and Wellington regions*. You are invited to make contact with the researcher on 0800 867791 (pin number 0550) or email [mtopp@paradise.net.nz](mailto:mtopp@paradise.net.nz)

## Appendix E

### SCHOOL OF NURSING

Reminder Card #1

Date: 13 June 2005



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Last week, a questionnaire was mailed to you as part of a national study that looks at the potential workplace occurrence of alcohol and other drug use of nurses. This is important research as the results may highlight the need to provide support for individual nurses in the workplace to ensure the safe delivery of patient care.

If you have already completed and returned your questionnaire either in the post or online, thank-you. Your contribution is valuable and I appreciate you taking time to do this.

If you did not receive the questionnaire, or if it has been misplaced, please do not hesitate to make contact at 0800 867791 (pin number 0550) today, and another one will be sent to you within the next few days. If you have received the questionnaire and still wish to respond, you may do so, or you can access and submit the questionnaire online using the password at the top right hand corner of your questionnaire form at <http://203.79.116.110/survey/>.

Marea Topp RN

## Appendix F

### SCHOOL OF NURSING

Reminder Card #2

Date: 20 June 2005



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Telephone: 64 9 373 7599

Two weeks ago, a questionnaire was mailed to you as part of a national study that looks at the potential workplace occurrence of alcohol and other drug use of registered nurses. This is important research as the results may highlight the need to provide support for individual nurses in the workplace to ensure the safe delivery of patient care.

If you have already completed and returned your questionnaire either in the post or online, thank-you. Your contribution is valuable and I appreciate you taking time to do this.

If you did not receive the questionnaire, or if it has been misplaced, please do not hesitate to make contact at 0800 867791 (pin number 0550) today, and another questionnaire will be sent to you within the next few days. If you have received the questionnaire, and still wish to respond, you may do so or you can access and submit the questionnaire online using the password at the top right had corner of your questionnaire form at <http://203.79.116.110/survey/>.

Marea Topp RN

## Appendix G

Advertisement for Focus Group and Individual Interview participants:

I am interested in nurses' use of alcohol and other drugs and how this might impact on their practice. If you live in the Canterbury, West Coast, Auckland, Bay of Plenty or Wellington regions and are interested in participating in a focus group with colleagues, or an individual interview to talk about this topic, please contact me using the details below. The research I am undertaking on this topic is for my PhD thesis.

Please contact Marea Topp on 0800 867791 (pin number 0550) or email [mtopp@paradise.net.nz](mailto:mtopp@paradise.net.nz)

On survey:

If you are interested in discussing any of these issues further, focus groups and individual interviews are being held in the *Canterbury, West Coast, Auckland, Bay of Plenty and Wellington regions*. You are invited to make contact with the researcher on 0800 867791 (pin number 0550) or email [mtopp@paradise.net.nz](mailto:mtopp@paradise.net.nz)

## Appendix H

### SCHOOL OF NURSING

#### Participant Information Sheet Focus Group Interviews

Project title: Alcohol and Other Drug  
use of Registered Nurses in New Zealand

Researcher name: Marea Topp

Dear Colleague

I am a registered nurse and PhD candidate in the School of Nursing, University of Auckland. You have responded to an advertisement and indicated interested in participating in a focus group interview regarding this research project. Your participation is voluntary, you have no obligation to participate.

The research project Alcohol and other drug use of registered nurses in New Zealand, includes data collection from a national survey of registered nurses randomly selected from the NCNZ data base, focus groups and individual interviews. The focus group interviews aim to gain insight into the potential workplace significance of alcohol and other drug use of registered nurses and workplace policies that guide management of impaired nursing practice. It is important as the results may highlight the need to provide support for individual nurses in the workplace to ensure the safe delivery of patient care. Application for funding of this research is being sought from a NERF scholarship, the Ray and Val Allen Trust, University of Auckland graduate funding and New Horizons for Women Trust (Inc) and the New Zealand Federation of University Women. The final report from this research will be submitted to the University of Auckland as a PhD thesis.

You are invited to participate in a focus group interview of approximately one hour's duration. The research will take place in a venue central to the group.

You are free to withdraw from the interview at any time, but I maybe unable to withdraw your data due to the nature of focus group interviews.

In consideration of the travel undertaken to attend this focus group, I would like to offer you a \$20 petrol voucher.

With the permission of all participants the focus group interviews will be audio-taped. The tape can be turned off at any time should you or any other participant requests it. The audio-tapes and transcribed data will be stored for 5 years in a locked cabinet at the researchers home and then destroyed. The participants consent forms, will be stored separately at the University of Auckland for five years and then destroyed.



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Every step will be taken to preserve anonymity of all participants in this research. No material that could personally identify you will be used in any report on this study.

Due to the nature of focus groups, confidentiality cannot be absolutely guaranteed. However, all participants will be asked at the beginning of the interview to respect each participant's confidentiality.

If, during the course of the focus group interview, illegal/unsafe practice is identified, I will seek advice from supervisors.

I will be employing a research assistant to transcribe the taped interviews. A standard confidentiality agreement has been negotiated and signed for this purpose.

If you would like further information or opportunity to discuss issues raised as a result of participating in this focus group, the following phone numbers may be useful.

Community Alcohol and Drug Services – see the phone directory for your Regional service

Alcohol Drug Helpline (10am – 10pm Daily) – 0800 787 797

ALAC Website – [www.alcohol.org.nz](http://www.alcohol.org.nz)

Employee Assistance Program (EAP) at your place of employment.

If you have any questions about the research or the survey questionnaire, I am able to be contacted at 0800 867791 or email me at [mtopp@paradise.net.nz](mailto:mtopp@paradise.net.nz). My supervisor, Associate Professor Mary Finlayson and Head of School, Associate Professor Judy Kilpatrick can be contacted using the details below.

For ethical concerns contact: The Chair, The University of Auckland Human Participants Ethics Committee, Office of the Vice Chancellor, Research Office, Level 2, 76 Symonds Street, Auckland. Telephone: 373 7599 extn 87830.

Your contribution to this research is valuable. Thank you for taking time to participate in the focus group.

Marea Topp, RN

Researcher	Supervisor	HOD
Marea Topp Ph: 0800 867791 (pin number 0550) Email: <a href="mailto:mtopp@paradise.net.nz">mtopp@paradise.net.nz</a>	Dr Mary Finlayson Ph: 09 3737599 ext 88508	Judi Kilpatrick Ph: 09 3737599 ext 82897

This research has been approved by the University of Auckland Human Participants Ethics Committee on 1 December 2004 to 1 December 2007 for three years. Reference number 2004/383

## Appendix I

### SCHOOL OF NURSING

#### Consent Form

This consent form will be held for a period of six years

Project title: Alcohol and Other Drug  
use of Registered Nurses in New Zealand

Researcher name: Marea Topp

To: Focus Group Participants

I have read and understand the Participant Information Sheet that explains the Focus Group interviews. I have had an opportunity to ask questions about the research and have had them answered to my satisfaction. I am prepared to participate in the Focus Group interviews. I am aware that at any point I can withdraw from the interview, and that I can request that the recording of the interview be stopped at any stage. I understand that due to the nature of focus groups I will not be able to withdraw data attributable to me. I also understand that I will have an opportunity to review all the transcribed raw data from the Focus Group I participated in prior to data analysis being undertaken.

- I understand that the Focus Group interviews will be audio taped.
- I understand that the transcribed data will be stored for a period of 5 years in a locked cabinet at the researchers home and then destroyed.

Name:

Signature:

Date:

This research has been approved by the University of Auckland Human Participants Ethics Committee on 1 December 2004 to 1 December 2007 for three years. Reference number 2004/383



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## **Appendix J**

### **Clinical scenario**

You arrive to work on an acute care ward for a morning duty. Your colleague is looking 'under the weather' again, this is the fourth time in as many weeks. In fact, in her 9 months on the ward, she has frequently arrived at work complaining of a 'hangover'. She struggles to maintain effective working relationships with her colleagues and at times, appears to be in conflict with senior staff.

Throughout the duty, you notice that she is having frequent extended breaks, returns late from lunch, has been asking for help to manage her workload for the day and on two occasions has missed changes in her patient's condition that require reassessment. She appears to struggle through the day and disappears straight after handover.

## Appendix K

### Question guide for Focus Groups and Individual Interviews with RNs

- Do you notice nurses who work with a hangover or while affected by their alcohol or drug use?
- When nurses work with a hangover or when affected by their alcohol or drug use, what do you notice about: Their ability to care for patients, their practice, how they function within the team?
- At what point would nurses become less tolerant with their colleague who comes to work with a hangover or when affected by their alcohol or other drug use?
- How often do you notice colleagues' accessing medications from imprest stock?
- Do you know of a colleague who has been brought to the attention of management because of their AOD use and how were they managed?
- Are you aware of your organisations policy for managing nurses whose AOD use may have affected their practice and their ability to provide safe patient care?

## **Appendix L**

### **Question guide for Individual Interviews with Directors of Nursing**

- At what point do you become involved when a nurse's AOD use is causing problems in the workplace?
- What processes guide how you work with nurses' whose AOD use is affecting how they practice/their ability to deliver safe patient care?
- Are there issues that may arise for the nurse who reports his/her concerns about a colleague's AOD use to management?
- What differences are there between the acceptance, tolerance and management of alcohol use compared to other drug use?
- What is your experience of nurses' diverting medication from the workplace?
- What organisational processes are in place that guide a nurse's re-entry to practice?

## Appendix M

### SCHOOL OF NURSING

#### Participant Information sheet

#### Individual interviews

Project title: Alcohol and Other Drug use of Registered Nurses in New Zealand

Researcher name: Marea Topp

Dear Colleague

I am a registered nurse and PhD candidate in the School of Nursing, University of Auckland. You have indicated that you are interested in participating in an individual interview related to this research project. Your participation is voluntary, you have no obligation to participate.

The research project Alcohol and other drug use of registered nurses in New Zealand, includes data collection from a national survey of registered nurses randomly selected from the NCNZ data base, focus groups and individual interviews. The individual interviews aim to gain insight into the potential workplace significance of alcohol and other drug use of registered nurses and workplace policies that guide management of impaired nursing practice. The research is important as the results may highlight the need to develop management guidelines and provide support for individual nurses in the workplace to ensure the safe delivery of patient care. Application for funding of this research is being sought from a NERF scholarship, the Ray and Val Allen Trust, University of Auckland graduate funding and New Horizons for Women Trust (Inc)., and the New Zealand Federation of University Women. The final report from this research will be submitted to the University of Auckland Academic Committee as a thesis toward a PhD.

You are invited to participate in an interview of approximately one hour's duration. The research will take place a venue that is convenient for you.

You are free to withdraw from the interview at any time, and you may withdraw your data up to 4 weeks from the initial interview.

In consideration of the travel undertaken to attend this interview, I would like to offer you a \$20 petrol voucher.

With your permission the interview will be audiotaped. You may request for the tape to be turned off at any time. The audiotapes and raw data will be stored for 5 years in a locked cabinet at the researchers home and then destroyed. The participants



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Telephone: 64 9 373 7599

consent forms, will be stored separately for 6 years, at the University of Auckland and then destroyed.

Every step will be taken to preserve anonymity of all participants in this research. No material that could personally identify you will be used in any report on this study.

I will be employing a research assistant to transcribe the taped interviews. A standard confidentiality agreement has been negotiated and signed for this purpose.

If you would like further information or opportunity to discuss issues raised as a result of participating in this interview, the following numbers may be useful.

Community Alcohol and Drug Services – see the phone directory for your Regional service

Alcohol Drug Helpline (10am – 10pm Daily) – 0800 787 797

ALAC Website – [www.alcohol.org.nz](http://www.alcohol.org.nz)

Employee Assistance Program (EAP) at your place of employment, alternatively, if you feel that individual counseling support is necessary, I will meet the cost of 2 counseling sessions with a counselor of your choice.

If you have any questions about the research or the survey questionnaire, I am able to be contacted at 0800 867791 (pin number 0550) or email me at [mtopp@paradise.net.nz](mailto:mtopp@paradise.net.nz). My supervisor, Associate Professor Mary Finlayson and Head of School, Associate Professor Judy Kilpatrick can be contacted using the details below.

For ethical concerns contact: The Chair, The University of Auckland Human Participants Ethics committee, Office of the Vice Chancellor, Research Office, Level 2, 76 Symonds Street, Auckland. Telephone: 373 7599 extn 87830.

Your contribution to this research is valuable. Thank you for taking time to participate in this interview.

Marea Topp, RN

Researcher	Supervisor	HOD
Marea Topp Ph: 0800 ... .. Email: <a href="mailto:mtopp@paradise.net.nz">mtopp@paradise.net.nz</a>	Dr Mary Finlayson Ph: 09 3737599 ext 88508	Judi Kilpatrick Ph: 09 3737599 ext

This research has been approved by the University of Auckland Human Participants Ethics Committee on 1 December 2004 to 1 December 2007 for three years. Reference number 2004/383

## Appendix N

### SCHOOL OF NURSING

#### Consent Form

This consent form will be held for a period of six years

Project title: Alcohol and Other Drug use of Registered Nurses in New Zealand

Researcher name: Marea Topp

To: Individual Interview Participants

I have read and understand the Participant Information Sheet that explains the individual interviews. I have had an opportunity to ask questions about the research and have had them answered to my satisfaction. I am prepared to participate in the individual interview. I am aware that at any point I can withdraw from the interview, and that I can request that the recording of the interview be stopped at any stage. I am aware that I can request that information I have contributed to the interview be removed up to 4 weeks from the interview. I also understand that I will have an opportunity to review the transcribed raw data prior to data analysis being undertaken.

- I understand that the individual interview will be audio taped.
- I understand that the transcribed data will be stored for a period of 5 years in a locked cabinet at the researchers home and then destroyed.

Name:

Signature:

Date

This research has been approved by the University of Auckland Human Participants Ethics Committee on 1 December 2004 to 1 December 2007 for three years. Reference number 2004/383



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## Appendix O



THE UNIVERSITY OF AUCKLAND  
NEW ZEALAND

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The University of Auckland  
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Auckland 1, New Zealand

Level 2, 76 Symonds Street  
Auckland, New Zealand  
Telephone: 64 9 - 373 7599 ext 87956  
Facsimile: 64 9 - 373 7432

### UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE

21 October, 2004

#### MEMORANDUM TO:

Marea Topp

School of Nursing

*Reminded 23.11.04*

#### Re: Application for Ethics Approval

The Committee met on 20 October, 2004 and considered the application for ethics approval for your research titled "Alcohol and other drug use of registered nurses in New Zealand" (Our Ref. 2004 / 383).

Ethics approval was given for a period of three years conditional on: -

- ✓ The Committee would like to remind you that focus group and individual interviews might lead to disclosure of unsafe/illegal behaviours of participants. It is stated in A2 of the application that should the researcher identify such a situation, advice will be sought from supervisors. This issue needs to be indicated in the Participant Information Sheet to warn the participants of the focus group.
- ✓ In the Consent Form for Focus Group, the last sentence indicates that the participants can review the transcribed data. Please clarify whether this means all participants will have access to all data, ie, that of all participants, or only their own data.
- ✓ Please rewrite first sentence in paragraph 3 in the Letter of Introduction to make it clear that the Nursing Council is sending notice to the participants on the behalf of the researcher.
4. Please provide the revisions as soon as possible to be included in next agenda. (25/10).

If the project changes significantly you are required to resubmit your application to the Committee for further consideration.

**In order that an up-to-date record can be maintained, it would be appreciated if you could notify the Committee once your project is completed.**

Please contact the Chairperson if you have any specific queries relating to your application. He and the members of the Committee would be most happy to discuss general matters relating to ethics provisions if you wish to do so.

THE UNIVERSITY SECRETARIAT  
Office of the Vice-Chancellor  
Research Ethics and Biological Safety Administration



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UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS  
ETHICS COMMITTEE

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

9 February, 2006

MEMORANDUM TO:

Marea Topp  
School of Nursing

**Re: Change to application**

I wish to advise you that the Committee met on 8 February, 2006 and reviewed the request for change to your application titled "Alcohol and other drug use of registered nurses in New Zealand" (Our Ref. 2004 / 383).

The Committee approved the change.

If the project changes significantly you are required to resubmit your application to the Committee for further consideration.

**In order that an up-to-date record can be maintained, it would be appreciated if you could notify the Committee once your project is completed.**

Please contact the Chairperson if you have any specific queries relating to your application. He and the members of the Committee would be most happy to discuss general matters relating to ethics provisions if you wish to do so.

Mp  
Margaret Rotondo  
Executive Secretary  
University of Auckland Human Participants Ethics Committee

c.c. Head of Department, School of Nursing

Marea Topp  
154 Hoeka Rd  
RO4  
Hamilton

## Appendix P

Posthoc Mann Whitney U test of significance for the self-reported frequency and volume of alcohol use, episodes of heavy drinking and age

	<b>Frequency of alcohol use<sup>8</sup></b>	<b>Volume of alcohol use<sup>9</sup></b>	<b>Episodes of heavy drinking<sup>10</sup></b>
<b>AGE</b>			
<b>20-24 – 25-29</b>	$Z = -.982, p = 0.326$	$Z = -1.880, p = 0.060$	$Z = -1.107, p = 0.268$
<b>30-34</b>	$Z = -1.420, p = 0.156$	$Z = -1.691, p = 0.105$	$Z = -1.110, p = 0.912$
<b>35-39</b>	$Z = -2.225, p = 0.026$	$Z = -3.667, p = 0.001^*$	$Z = -1.299, p = 0.194$
<b>40-44</b>	$Z = -4.083, p = 0.001^*$	$Z = -4.969, p = 0.001^*$	$Z = -2.653, p = 0.008^*$
<b>45-49</b>	$Z = -3.784, p = 0.001^*$	$Z = -4.833, p = 0.001^*$	$Z = -3.006, p = 0.003^*$
<b>50-54</b>	$Z = -2.420, p = 0.016$	$Z = -3.194, p = 0.001^*$	$Z = -2.433, p = 0.015$
<b>55-59</b>	$Z = -3.385, p = 0.001^*$	$Z = -5.059, p = 0.001^*$	$Z = -3.505, p = 0.001^*$
<b>60+</b>	$Z = -2.247, p = 0.025$	$Z = -3.792, p = 0.001^*$	$Z = -2.993, p = 0.003^*$
<b>25-29 – 30-34</b>	$Z = -.581, p = 0.561$	$Z = -.255, p = 0.799$	$Z = -1.453, p = 0.146$
<b>35-39</b>	$Z = -1.483, p = 0.138$	$Z = -1.873, p = 0.061$	$Z = -1.109, p = 0.913$
<b>40-44</b>	$Z = -3.525, p = 0.001^*$	$Z = -3.196, p = 0.001^*$	$Z = -1.825, p = 0.068$
<b>45-49</b>	$Z = -3.214, p = 0.001^*$	$Z = -3.105, p = 0.002^*$	$Z = -2.420, p = 0.016$
<b>50-54</b>	$Z = -1.764, p = 0.078$	$Z = -1.451, p = 0.147$	$Z = -1.836, p = 0.066$
<b>55-59</b>	$Z = -2.942, p = 0.003^*$	$Z = -3.414, p = 0.001^*$	$Z = -3.060, p = 0.002^*$

<sup>8</sup> Self-reported frequency of alcohol use in the last 12 months -abstinence, monthly or less, 2 to 4 times a month, 2 to 3 times a week, 4 or more times a week

<sup>9</sup> Self-reported volume of alcohol consumed in the last 12 months - 1 or 2, 3 or 4, 5 or 6, 7 to 9 and 10 or more

<sup>10</sup> Self-reported episodes of heavy drinking in the last 12 months – never, less than monthly, monthly, daily, almost daily

\*Significance was set at  $p=0.05$  for the Kruskal Wallis and  $0.01$  for the Mann Whitney U post hoc tests.

Appendix P

<b>60+</b>	$Z = -1.694, p = 0.090$	$Z = -2.366, p = 0.018$	$Z = -2.600, p = 0.009^*$
<b>30-34 – 35-39</b>	$Z = -1.058, p = 0.290$	$Z = -2.460, p = 0.014$	$Z = -2.026, p = 0.043$
<b>40-44</b>	$Z = -3.204, p = 0.001^*$	$Z = -4.105, p = 0.001^*$	$Z = -4.254, p = 0.001^*$
<b>45-49</b>	$Z = -2.888, p = 0.004$	$Z = -3.962, p = 0.001^*$	$Z = -4.846, p = 0.001^*$
<b>50-54</b>	$Z = -1.403, p = 0.161$	$Z = -2.042, p = 0.041$	$Z = -3.967, p = 0.001^*$
<b>55-59</b>	$Z = -2.896, p = 0.004^*$	$Z = -4.265, p = 0.001^*$	$Z = -5.531, p = 0.001^*$
<b>60+</b>	$Z = -1.443, p = 0.149$	$Z = -2.875, p = 0.004^*$	$Z = -4.436, p = 0.001^*$
<b>35-39 – 40-44</b>	$Z = -2.357, p = 0.018^*$	$Z = -1.583, p = 0.113$	$Z = -2.414, p = 0.016$
<b>45-49</b>	$Z = -2.025, p = 0.043^*$	$Z = -1.515, p = 0.130$	$Z = -3.232, p = 0.001^*$
<b>50-54</b>	$Z = -0.411, p = 0.681$	$Z = -0.430, p = 0.667$	$Z = -2.391, p = 0.017^*$
<b>55-59</b>	$Z = -2.002, p = 0.045^*$	$Z = -1.953, p = 0.051$	$Z = -4.040, p = 0.001^*$
<b>60+</b>	$Z = -0.552, p = 0.581$	$Z = -0.964, p = 0.335$	$Z = -3.189, p = 0.001^*$
<b>40-44 – 45-49</b>	$Z = -0.276, p = 0.783$	$Z = -0.024, p = 0.981$	$Z = -1.084, p = 0.278$
<b>50-54</b>	$Z = -1.813, p = 0.070$	$Z = -2.053, p = 0.040^*$	$Z = -0.296, p = 0.767$
<b>55-59</b>	$Z = -0.050, p = 0.960$	$Z = -0.504, p = 0.614$	$Z = -1.947, p = 0.052$
<b>60+</b>	$Z = -1.175, p = 0.240$	$Z = -0.272, p = 0.786$	$Z = -1.533, p = 0.125$
<b>45-49 – 50-54</b>	$Z = -1.511, p = 0.131$	$Z = -1.965, p = 0.049^*$	$Z = -0.727, p = 0.467$
<b>55-59</b>	$Z = -0.189, p = 0.850$	$Z = -0.513, p = 0.608$	$Z = -0.770, p = 0.441$
<b>60+</b>	$Z = -0.957, p = 0.339$	$Z = -0.246, p = 0.806$	$Z = -0.630, p = 0.529$
<b>50-54 – 55-59</b>	$Z = -1.574, p = 0.115$	$Z = -2.373, p = 0.018^*$	$Z = -1.432, p = 0.152$
<b>60+</b>	$Z = -0.232, p = 0.817$	$Z = -1.274, p = 0.203$	$Z = -1.164, p = 0.244$
<b>55-59 – 60+</b>	$Z = -1.091, p = 0.275$	$Z = -0.652, p = 0.514$	$Z = -0.058, p = 0.953$

## Appendix Q

Posthoc Mann Whitney U test of significance for the self-reported frequency and volume of alcohol use and age

<b>Ethnicity</b>	<b>Frequency of alcohol use<sup>11</sup></b>	<b>Volume of alcohol use<sup>12</sup></b>
<b>NZ European - NZ Māori</b>	$Z = -2.737, p = 0.006^*$	$Z = -3.484, p = 0.001^*$
<b>Pacific</b>	$Z = -3.514, p = 0.001^*$	$Z = -4.314, p = 0.001^*$
<b>Other - European</b>	$Z = -.011, p = 0.991$	$Z = -.068, p = 0.946$
<b>Asian</b>	$Z = -7.354, p = 0.001^*$	$Z = -5.671, p = 0.001^*$
<b>Other</b>	$Z = -4.563, p = 0.001^*$	$Z = -5.499, p = 0.001^*$
<b>NZ Māori - Pacific</b>	$Z = -2.436, p = 0.015$	$Z = -2.401, p = 0.016$
<b>Other - European</b>	$Z = -2.247, p = 0.025$	$Z = -2.549, p = 0.011$
<b>Asian</b>	$Z = -4.764, p = 0.001^*$	$Z = -2.556, p = 0.011$
<b>Other</b>	$Z = -1.835, p = 0.067$	$Z = -1.647, p = 0.099$
<b>Pacific - Other European</b>	$Z = -3.320, p = 0.001^*$	$Z = -3.809, p = 0.001^*$
<b>Asian</b>	$Z = -.448, p = 0.654$	$Z = -.340, p = 0.734$
<b>Other</b>	$Z = -1.205, p = 0.228$	$Z = -1.257, p = 0.209$
<b>Other European - Asian</b>	$Z = -6.238, p = 0.001^*$	$Z = -4.385, p = 0.001^*$
<b>Other</b>	$Z = -3.590, p = 0.001^*$	$Z = -3.933, p = 0.001^*$
<b>Asian - Other</b>	$Z = -2.600, p = 0.009^*$	$Z = -1.151, p = 0.250$

<sup>11</sup> Self-reported frequency of alcohol use in the last 12 months -abstinence, monthly or less, 2 to 4 times a month, 2 to 3 times a week, 4 or more times a week

<sup>12</sup> Self-reported volume of alcohol consumed in the last 12 months - 1 or 2, 3 or 4, 5 or 6, 7 to 9 and 10 or more

\*Significance was set at  $p=0.05$  for the Kruskal Wallis and  $0.01$  for the Mann Whitney U post hoc tests.

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