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Understanding Body Image Dissatisfaction and Disordered Eating in Midlife Adults

Sarah McGuinness, Joanne E. Taylor, Massey University, Palmerston North

Research on body image and eating behaviours is well established in young adults. However, less is known about body image and eating behaviours in women and men in midlife (30-60 years), and it is an age when certain biological, psychological, and social changes occur that can challenge body image. This study aimed to explore the gender similarities and differences in body dissatisfaction and disordered eating in midlife with a convenience sample of 187 women and 48 men using an online survey. Midlife women had greater body dissatisfaction and disordered eating than midlife men, and obese women reported the greatest body image dissatisfaction and disordered eating. There was insufficient power to detect weight group differences for men, although a reasonable proportion of the men (8-17%) scored above the norms for body image dissatisfaction (compared to 28-41% of the women). Body image and eating concerns are important health issues for midlife adults that warrant further research, especially with regard to men.

Keywords: body image; midlife; disordered eating; adults

Researchers have documented a marked increase in body image dissatisfaction over recent times for Western women and men of all ages, which is a concerning public health issue given links between body image problems and psychological problems including low self-esteem, anxiety, and depression (Hay, Mond, Buttner, & Darby, 2008; Jackson et al., 2014; Keel, Baxter, Heatherton, & Joiner, 2007; Midlarsky & Nitzburg, 2008; Tiggemann, 2004). Body image dissatisfaction is defined as the negative perceptions and feelings a person has about their body and is influenced by factors such as body shape and appearance, attitudes towards weight gain, and cultural norms in relation to an ideal body (Peat, Peyerl, & Muehlenkamp, 2008; Phillips & de Man, 2010; Slade, 1994; Slevec & Tiggemann, 2011a).

Body image dissatisfaction is also strongly associated with, and is often considered a predicting and maintaining factor of, disordered eating (Fairburn, Cooper, & Shafran, 2003; Midlarsky & Nitzburg, 2008; Stice, Marti, & Durant, 2011; Tiggemann, 2004). Disordered eating has been defined as encompassing a wide range of eating behaviours, including dieting, which is normally considered low-risk, through

to severe food restriction, binge eating and purging, which can be considered clinical or sub-clinical depending on other related behaviours (American Psychiatric Association, 2013; Slevec & Tiggemann, 2011b; Williamson, 1999). In the present study, disordered eating refers to low-risk behaviours, such as dieting, which can lead to the insufficient intake of nutrients required by the body and/or marked weight loss or gain (Pereira & Alvarenga, 2007; Slevec & Tiggemann, 2011b). It also includes negative attitudes towards food, such as the use of 'good' and 'bad' labels for food, inflexible eating patterns and disproportionate daily thoughts about eating, food preparation, and food digestion (Pereira & Alvarenga, 2007).

The co-existence of body image dissatisfaction and disordered eating concerns has been well documented, particularly for young women aged between mid-adolescence and mid-to-late twenties living in Western cultures (Ferraro et al., 2008; Peat et al., 2008; Pereira & Alvarenga, 2007; Slevec & Tiggemann, 2011b; Tiggemann, 2004). In fact, such is the pervasiveness of body image dissatisfaction in young Western women that it has even been termed a "normative" phenomenon (Rodin, Silberstein, & Striegel-Moore, 1984). For this reason, the majority of

research on body image dissatisfaction and disordered eating has focused on young women (Brandsma, 2007; Ferraro et al., 2008; Peat et al., 2008; Pruis & Janowsky, 2010; Slevec & Tiggemann, 2011b; Tiggemann, 2004; Tiggemann & Lynch, 2001). Similarly, the vast majority of the more limited amount of research on men also only applies to young adult men (McCabe & Ricciardelli, 2004).

However, concerns with body shape and weight apply to a broader age range than the research focus might suggest (Tiggemann, 2004). For example, 71% of a sample of 1,053 women in Switzerland aged 30 to 74 years reported wanting to be thinner even though 73% were of a normal weight (Allaz, Bernstein, Rouget, Archinard, & Morabia, 1998). A better understanding of these issues in midlife (30-60 years of age) is needed in order to identify whether there are research and treatment needs that go beyond the current focus on young women and men with body image and eating problems.

Midlife women

A review of the existing literature on body image dissatisfaction and disordered eating in midlife women reveals several key points. First, like young women, many midlife women report experiencing continual pressure to meet Western society's female beauty standards of youthfulness and thinness, and achievement of these attributes is associated with attractiveness and social advantage (Esnaola, Rodríguez, & Goñi, 2010; Tiggemann, 2004). Midlife women also face a series of marked biological changes such as ageing, pregnancy and menopause that can challenge their ability to meet these standards (Fuller-Tyszkiewicz, Skouteris, Watson, & Hill, 2013; Tiggemann, 2004). Midlife biological changes, for example, are normally associated with weight gain, body shape change, and an increase in body fat

(Tiggemann, 2004). Ageing in particular is not only associated with weight gain, but also with changes in skin elasticity, the development of wrinkles, and the loss of hair, all of which contradict Western expectations (D. C. Lewis, Medvedev, & Seponski, 2011).

Body weight may also play a role in body image dissatisfaction and disordered eating in midlife women as evidence shows that, compared to normal weight midlife women, overweight and obese midlife women tend to report a higher drive for thinness, greater body shame, increased dieting behaviours, and greater preoccupation with food (Forrester-Knauss & Zemp Stutz, 2012; Gagne et al., 2012; Marcus, Bromberger, Wei, Brown, & Kravitz, 2007; Sarwer, Thompson, & Cash, 2005; Tiggemann, 2004). It has been hypothesized that overweight and obese midlife women may be more aware that their body size and shape contravenes Western ideals (Sarwer et al., 2005). However, as most midlife women appear to be dissatisfied with their bodies, this hypothesis does not adequately explain the differences found, and some researchers have found that there is little relationship between the degree of obesity and intensity of body image dissatisfaction, suggesting the relationship is not clear-cut (Sarwer et al., 2005; Slevic & Tiggemann, 2011b).

For some women, body image becomes less important as they age (Tiggemann & Lynch, 2001). It has been argued this may be explained by a greater acceptance of the ageing process, and/or maturity, life experience, the development of cognitive strategies, and a decrease in exposure to the cultural ideals of beauty, all of which may reduce vulnerability to body image dissatisfaction and disordered eating (Esnaola et al., 2010; McLean, Paxton, & Wertheim, 2010; Peat et al., 2008; Runfola et al., 2013; Tiggemann, 2004). The achievement of certain life roles such as marriage, motherhood, and occupational identity may also act as protective factors as they may replace weight and shape in terms of the factors that influence how women evaluate themselves over time (Keel et al., 2007; Tiggemann, 2004).

Midlife men

Few studies exist on body image dissatisfaction and disordered eating in midlife men, including any comparisons with midlife women (McCabe & Ricciardelli, 2004; Peat et al., 2008). Like midlife women, midlife men also go through a number of life stages and events such as marriage, parenting, career growth, and retirement, and it is not known to what extent that might affect body image satisfaction and/or contribute to the development of disordered eating in midlife men (McCabe & Ricciardelli, 2004; Robinson & Wright, 2013).

Body shape changes and increases in body fat can lead to greater concerns about appearance, body dissatisfaction, body shame, and disordered eating in midlife men (Baker & Gringart, 2009; Boisvert & Harrell, 2012; Keel et al., 2007). One American longitudinal study on men aged approximately 40 years ($SD = 2$) at follow-up found that 71% of men wanted to lose weight compared to only 37% of the men 20 years earlier (Keel et al., 2007). In addition, these men were more dissatisfied with their weight and had increased their dieting behaviours (Keel et al., 2007). Attempts to gain muscle tone have been associated with greater body image dissatisfaction in midlife men, and men also appear to rely more on food supplements to increase the size of their muscles and compensate for body image dissatisfaction than women of the same age (Anderson & Bulik, 2004; McCabe & Ricciardelli, 2004; Tiggemann, 2004).

The ageing process may be just as challenging for men as it is for women as, like women, ageing takes men further away from Western male standards of beauty (Keel et al., 2007). The standards for men are best described by the ideal male body which is lean and muscular and linked to attributes such as strength, power, and control (Esnaola et al., 2010; Lodge & Umberson, 2013; McCabe & Ricciardelli, 2004; McFarland & Petrie, 2012; Parent, 2013). However, others have found no relationship between ageing and body image dissatisfaction for men in midlife, concluding that this could be because not all men experience ageing as a negative event and some may become more accepting of their

bodies as they age (Forrester-Knauss & Zemp Stutz, 2012).

Evidence on the relationship between body weight, body dissatisfaction, and disordered eating for midlife men is mixed and often contradictory. In some cases, overweight and obese midlife men were more dissatisfied with their physical appearance and more likely to report disordered eating behaviours than midlife men of a normal weight (Forrester-Knauss & Zemp Stutz, 2012; McCabe & McGreevy, 2011; Muth & Cash, 1997). However, in other studies, underweight and normal weight midlife men were just as concerned about their appearance as overweight and obese men, although underweight and normal weight midlife men wished to be larger and more muscular, while overweight and obese men wished to have less body fat (Forrester-Knauss & Zemp Stutz, 2012; McCabe & McGreevy, 2011; McPherson & Turnbull, 2005; Muth & Cash, 1997; Phillips & de Man, 2010).

Body image and disordered eating seem to be more difficult to conceptualize in men than in women (Darcy & Lin, 2012; Jones & Morgan, 2010; Tiggemann, 2004). Men often take their physical abilities into account as well as their self-assessment against the Western male beauty standards when perceiving their body image (Esnaola et al., 2010; Tiggemann, 2004). This means body image in men typically not only encompasses what they look like, but also how their body performs in relation to athletic, physical, and/or sexual activities (Clarke, 2001; Clarke & Griffin, 2008; Lodge & Umberson, 2013; McCabe & Ricciardelli, 2004). Researchers and clinicians are yet to capture these complexities because the vast majority of measures of body image dissatisfaction that are used with men were designed for research with women, and are built almost entirely on the psychological, physical, and emotional symptomology of women with eating disorders (Jones & Morgan, 2010; McCabe & Ricciardelli, 2004). While this can make research on midlife men more difficult, researchers have found that some of the eating disorder measures available, such as the Eating Attitudes Test (EAT-26), can be used to measure body image dissatisfaction and disordered eating in

men as they contain more gender-neutral terminology than other measures, which allows for comparison with women (Boerner, Spillane, Anderson, & Smith, 2004; Darcy & Lin, 2012; Stanford & Lemberg, 2012).

In summary, the limited research to date offers a mixed picture of body image and eating concerns in midlife adults, particularly for men. There is evidence that these issues exist for both genders during the middle years of life, however, further exploration of these concerns will provide a better understanding of how midlife adults perceive their bodies and the extent to which these issues pertain to each gender. The present study sought to understand if there were gender similarities and differences in body dissatisfaction and disordered eating for a convenience sample of midlife adults. It was predicted that women would report more dissatisfaction with their bodies and more disordered eating than men. It was also predicted that women who were overweight or obese according to Body Mass Index (BMI) would be more dissatisfied with their bodies and have more disordered eating than normal-weight women. Given the limited evidence for men, the research sought to understand if midlife men who were underweight, overweight, or obese differed to men of a normal weight on body dissatisfaction and disordered eating.

Method

Participants

The participants in this study were a sample of convenience, predominantly recruited through personal and professional networks. Advertisements were placed with a number of community organisations in New Zealand and Australia, such as Rotary and Men's Health Australia, and on social media channels. It was advertised in the Christchurch Mail newspaper twice and through word of mouth. A press release was also issued by Massey University and was published in several local community newspapers and online blogs. Participation was voluntary and no payment was offered. To be included in the study, participants needed to be between 30 and 60 years of age and be

residents of New Zealand or Australia.

There were 287 people who responded to the online survey. However, 52 participants were excluded for being outside the age range, living outside New Zealand or Australia, giving invalid height responses, omitting gender, not responding to any of the items on the body image dissatisfaction and disordered eating measures, and/or missing more than 15% of the body image dissatisfaction measure subscale's items as recommended by Cash (personal communication, October 23, 2013). The final sample comprised 187 (80%) women and 48 men who were aged between 30 to 60 years and were residents of New Zealand (79%) or Australia (21%). The mean age for men was 44.60 years ($SD = 10.21$) and for women was 42.62 years ($SD = 9.08$). Nearly 80% of the sample identified as New Zealand or Australian European and a small number identified as Māori (4%), Pacific Islander (2%), Asian (1%) or other (15%). Most men (91%) and women (88%) in the sample had completed some level of tertiary education and most were married, in a civil union or defacto relationship (83% of men, 71% of women). Men's average BMI scores were 25.84 ($SD = 3.47$) and women's scores were 26.74 ($SD = 6.21$). More than half of the men (56%) and women (53%) in the study had an overweight or obese BMI. Given the convenience nature of the sample, the findings need to be treated with caution, as the sample is not representative of the population (e.g., those 30-60 years old were 52% female and 48% male in the 2011 New Zealand census; Statistics New Zealand, 2016).

Measures

Participants completed an anonymous online survey that comprised the following measures.

Body image dissatisfaction. Body image dissatisfaction was measured using the 34-item self-report Multidimensional Body-Self Relations Questionnaire – Appearance Scales (MBSRQ-AS). The MBSRQ-AS has five subscales, the Appearance Evaluation (AE), Appearance Orientation (AO), Overweight Preoccupation (OWP), Self-Classified Weight (SCW) and Body Areas Satisfaction Scale (BASS)

(Brown, Cash, & Mikulka, 1990; Cash, 2000), which are scored on a five-point Likert scale. A high AE score indicates satisfaction with appearance. A high AO score indicates placing a high importance on appearance and grooming. A high OWP score indicates weight anxiety and food restriction. A high BASS score indicates overall satisfaction with body parts and the Self-Classified Weight (SCW) subscale assesses weight perception. The MBSRQ-AS was selected because these scales have been found to be suitable for use with both genders (Rusticus & Hubley, 2006).

The psychometric properties of the MBSRQ-AS have been well documented (Brown et al., 1990; Cash, 2000). It has been found to have internal consistency (Cronbach's alpha) and good stability as demonstrated by one month test-retest coefficients (Cash, 2000). Internal consistency in the present study was similar to that reported by Cash (2000), and most coefficients were above the .70 rule of thumb (Pallant, 2013). The exception was OWP for men in the current study, which was just below .70. The coefficients in the present study for the total sample were AE = .88, AO = .90, OWP = .65, SCW = .74 and BASS = .81.

Disordered eating. Disordered eating was measured using the 26-item self-report Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). The scale measures abnormal eating on a 6-point Likert scale. A total score at or above 20 indicates potentially problematic eating disturbances. The psychometric properties of this measure have also been well documented (Garner et al., 1982). In this study, Cronbach's alpha was .78 for men, .91 for women, and .90 for the whole sample, which is comparable to Garner et al. (1982).

Body mass. Body mass classification was determined using the Body Mass Index (BMI), which was calculated by dividing participants' self-reported weight in kilograms by the square of their height in metres (kg/m^2) (World Health Organisation, 2012). BMI is classified as underweight (<18.50), normal weight (18.50–24.99), overweight (25.00–29.99) or obese ($30.00<$) (World Health Organisation, 2012).

Procedure

Participants were invited to complete an online survey hosted on the Massey University School of Psychology website that asked about demographic information and included the measures described. The ethics of the research were evaluated by peer review and judged to be low risk, so the study was not reviewed by the university Human Ethics Committee and the researchers were responsible for the ethical conduct of the research.

Data analysis

Several analyses were planned to answer the research questions using SPSS (version 20). A multivariate analysis of variance (MANOVA) examined if midlife men and women differed in their body image dissatisfaction and a one-way ANOVA compared the disordered eating scores between men and women. The hypotheses comparing overweight, obese, and normal weight women and men on body dissatisfaction and disordered eating followed the same analytical pattern.

Data were screened for accuracy and checked for the univariate and multivariate assumptions. There were 19 participants with missing data on the MBSRQ-AS subscales and this was managed using the recommended approach of Cash (personal communication, October 23, 2013) in that, for participants missing less than 15% of the data, individual mean scores were calculated for each subscale and were used to replace the missing items. Missing data for 11 participants on the EAT-26 scale was managed using the recommended approach of Garner et al. (1982) in that, for participants missing no more than one item, the median of responses was used to calculate the missing value. While the MBSRQ-AS subscales were normally distributed, the BMI and EAT-26 scores were positively skewed for both men and women. As the EAT-26 scores were quite skewed, a log transformation was conducted to bring the data closer to a normal distribution (Tabachnick & Fidell, 2013). The gender group sizes were also sharply unequal, so a more stringent alpha level of $\alpha = .01$ was used to reduce the likelihood of Type 1 error (Stevens, 2009). Finally, one participant had a Mahalanobis

distance of 38.89, which was well above the critical level of 20.51 ($p < .001$) (Tabachnick & Fidell, 2013), so data from this participant was removed.

Results

Using the norms on the MBSRQ for the subscales most commonly used to indicate body dissatisfaction (Brown et al., 1990; Cash, 2000), 31.5% of women and 15% of men scored more than one standard deviation above the norm for AE, and the figures for the BASS were 28% and 17%, respectively, indicating some degree of body image concern in the present sample, although greater for women than men. Various cutoff scores have been used (Fiske, Fallon, Blissmer, & Redding, 2014).

dissatisfaction variables between midlife men and women, $F(5, 224) = 7.52, p < .001$, Pillai's Trace = .14, partial $\eta^2 = .14$. Univariate tests revealed a significant gender difference for all dependent variables, as can be seen in Table 1. These results indicate that, as predicted, midlife women had a greater level of dissatisfaction with their appearance (AE), placed higher importance on how they looked, engaged in greater excessive grooming (AO), dieted more, showed greater eating restraint and greater worry about becoming fat (OWP), and reported a greater perception of being overweight and perceiving that others thought they were overweight (SCW), than men. Midlife men, on the other hand, had a greater level of satisfaction with their

Table 1

Mean (and SD) Scores and Comparative Results for Men and Women on the MBSRQ-AS Subscales and EAT-26

	Mean (SD)		F	df	p	Effect size
	Men (n = 48)	Women (n = 187)				
AE	3.47 (.71)	3.00 (.97)	9.82	1, 228	< .01	.04
AO	2.92 (.72)	3.46 (.67)	23.45	1, 228	< .001	.09
OWP	2.25 (.73)	2.88 (1.00)	16.58	1, 228	< 0.001	.07
SCW	3.25 (.72)	3.65 (.70)	13.04	1, 228	< .001	.05
BASS	3.49 (.60)	3.00 (.79)	15.94	1, 228	< .001	.06
EAT-26	1.32 (.93)	1.74 (1.14)	6.97	1, 87.90	.01	.02

Note. AE = Appearance Evaluation, AO = Appearance Orientation, SCW = Self-Classified Weight, BASS = Body Areas Satisfaction Scale. The possible range of scores was 1 - 5 for all subscales. High AO, OWP and SCW and low AE and BASS indicate body image dissatisfaction. The EAT-26 score has been transformed using a log transformation. A high EAT-26 score indicates greater disordered eating. Effect size for AE, AO, OWP and BASS is partial η^2 . EAT effect size is eta squared.

Using the most conservative score, 41% of women and 17% of men scored above a cutoff of 2.74 on AE (Peplau et al., 2009), and the respective proportions for BASS were 37% and 8%, respectively. A small number of participants (16% of women and 6% of men) were found to have an EAT-26 score that was at or above 20, indicating potentially problematic eating disturbances as noted by the manual (Garner et al., 1982).

There was a statistically significant difference in the combined body image

size and/or appearance compared to midlife women.

The one-way ANOVA comparing EAT-26 scores for midlife men and women is also shown in Table 1. Levene's test for homogeneity of variance was significant ($p = .02$) so the Welch test was used (Pallant, 2013). As predicted, midlife women reported higher levels of disordered eating than midlife men (i.e., more frequent limiting of food intake, restricting types of food such as high carbohydrate foods, eating

diet foods, and/or counting calories).

A three-group MANOVA compared body image dissatisfaction among groups of midlife women with a normal ($n = 87$, BMI $M = 22.16$, $SD = 1.82$), overweight ($n = 54$, BMI $M = 26.93$, $SD = 1.36$) and obese ($n = 40$, BMI $M = 36.19$, $SD = 5.07$) BMI. There was only one woman with an underweight BMI, so no comparison was made with that category. There was a statistically significant difference in the combined body image dissatisfaction variables for normal weight, overweight, and obese women, $F(10, 350) = 15.42$, $p < .001$, Pillai's Trace = .61, partial $\eta^2 = .31$. Univariate tests showed no significant difference in AO or OWP, but a significant difference in AE, BASS, and SCW using a more stringent alpha level of $\alpha = .01$ (see Table 2). Using Tukey HSD post-hoc comparisons ($\alpha = .05$), there was a significant difference between all three BMI categories on the AE, BASS, and SCW scales. As predicted, obese women reported greater unhappiness with their appearance (AE), greater unhappiness with their size or appearance of body areas (BASS), and a greater perception of being overweight and perceiving that others thought they were overweight compared to overweight and normal weight women (SCW). Overweight women also reported greater concerns in these areas than normal weight women. There was also a significant difference between obese women and normal weight women on OWP, with obese women reporting greater dieting frequency, greater eating restraint and greater worry about becoming fat than normal weight women.

A one-way ANOVA compared midlife women with a normal ($n = 87$), overweight ($n = 55$) and obese ($n = 42$) BMI on the log transformed EAT-26 scores. There was a significant difference in disordered eating for the three groups, as shown in Table 2. Using Tukey HSD post-hoc comparisons ($\alpha = .05$), the mean score for obese women was significantly higher than for normal weight and overweight women, although there was no difference between overweight and normal weight women.

The groups of men by weight category were too small for MANOVA so five one-way ANOVAs were performed to compare body dissatisfaction in men

Table 2

Mean (and SD) Scores and Comparative Results for Women by BMI on the MBSRQ-AS Subscales and EAT-26

	Mean (SD)			F	df	p	Effect size
	Normal	Overweight	Obese				
AE	3.44 (.83)	2.98 (.81)	2.11 (.76)	36.92	2,178	<.001	.29
AO	3.44 (.72)	3.47 (.67)	3.43 (.56)	.05	2,178	.95	.29
OWP	2.67 (1.03)	2.99 (.93)	3.13 (.91)	3.68	2,178	.03	.04
SCW	3.17 (.47)	3.76 (.45)	4.54 (.46)	121.63	2,178	<.001	.58
BASS	3.39 (.71)	2.93 (.58)	2.27 (.60)	41.19	2,178	<.001	.32
EAT-26	1.59 (1.18)	1.52 (1.07)	2.27 (.98)	6.78	2,183	<.01	.07

Note. AE = Appearance Evaluation, AO = Appearance Orientation, SCW = Self-Classified Weight, BASS = Body Areas Satisfaction Scale. Normal weight $n = 87$, overweight $n = 54$ and obese $n = 40$. The possible range of scores was 1 - 5 for all subscales. High AO, OWP and SCW and low AE and BASS indicate body image dissatisfaction. The EAT-26 score has been transformed using a log transformation. A high EAT-26 score indicates greater disordered eating. Effect size for AE, AO, OWP and BASS is partial η^2 . EAT effect size is eta squared.

with a normal ($n = 21$, BMI $M = 22.83$, $SD = 1.28$) and overweight/obese ($n = 27$, BMI $M = 28.19$, $SD = 2.72$) BMI. (There were no men in the study with an underweight BMI.) As shown in Table 3, there were no significant differences between the groups on AE, AO, and OWP. However, there was a significant difference between the groups on SCW, in that overweight/obese men reported a greater perception of being overweight than normal weight men. No significant

difference was found between the two groups of men for disordered eating.

Discussion

As predicted, this convenience sample of midlife women reported greater body dissatisfaction and disordered eating than the midlife men, consistent with the majority of comparable studies on midlife women and men, and more broadly the studies on Western women and men of all ages (Anderson & Bulik,

Table 3

Mean (and SD) Scores and Comparative Results for Men by BMI on the MBSRQ-AS Subscales and EAT-26

	Mean (SD)		F	df	p	Effect size
	Normal	Overweight/ Obese				
AE	3.53 (.62)	3.43 (.77)	.22	1, 47	.64	<.01
AO	2.71 (.67)	3.07 (.72)	3.20	1, 47	.08	.07
OWP	2.08 (.73)	2.38 (.72)	1.91	1, 46	.17	.04
BASS	3.61 (.56)	3.37 (.61)	1.95	1, 47	.17	.04
SCW	2.86 (.42)	3.56 (.45)	30.33	1, 47	<.001	.40
EAT-26	1.32 (1.00)	1.32 (.89)	.00	1,47	.99	.00

Note. AE = Appearance Evaluation, AO = Appearance Orientation, SCW = Self-Classified Weight, BASS = Body Areas Satisfaction Scale. Normal $n = 21$, overweight $n = 18$ and obese $n = 8$. The possible range of scores was 1 - 5 for all subscales. High AO, OWP and SCW and low AE and BASS indicate body image dissatisfaction. The EAT-26 score has been transformed using a log transformation. A high EAT-26 score indicates greater disordered eating. Effect size for AE, AO, OWP and BASS is partial η^2 . EAT effect size is eta squared.

2004; Esnaola et al., 2010; Ferraro et al., 2008; Forrester-Knauss & Zemp Stutz, 2012; Gagne et al., 2012; Gupta & Schork, 1993; Muth & Cash, 1997; Tiggemann, 2004; Tiggemann & Lynch, 2001). Western society's continual pressure for women of all ages to be thin is almost completely at odds with the biological changes that most women experience during midlife (Tiggemann, 2004). Obese women endorsed the greatest body image dissatisfaction and disordered eating compared to normal weight and overweight midlife women. These results with a convenience sample are also consistent with the majority of comparable studies that have found that overweight and obese midlife women report greater body image dissatisfaction than normal weight women (Forrester-Knauss & Zemp Stutz, 2012; Gagne et al., 2012; D. M. Lewis & Cachelin, 2001; Marcus et al., 2007; Slevac & Tiggemann, 2011b). Midlife overweight and obese women are often subjected to greater societal prejudices than normal weight midlife women because they are perceived to be further from Western society's thin ideal female body (Heuer, McClure, & Puhl, 2011; Sarwer et al., 2005). While losing weight through food restriction, dieting, and counting calories may be sustainable in the short-term, chronic dieting is not and can result in increased weight gain that reinforces negative perceptions and feelings about body shape (Sarwer et al., 2005; Stewart, Williamson, & White, 2002).

In contrast, the results for this small, convenience sample of midlife men showed that, not only were they less concerned about their bodies than midlife women, but they also reported greater satisfaction with their body parts, such as lower torso, muscle tone, and weight, and with their overall appearance than their female counterparts. There was also no difference between men's BMI groups on most body image dissatisfaction variables or disordered eating. While these results suggest that this group of midlife men are satisfied with their bodies regardless of weight, all of the non-significant results had small to medium effect sizes, so it is likely that the sample of men was too small to detect these small to medium group differences (Pallant, 2013).

The finding that this group of midlife

men were more satisfied with their body image than midlife women is consistent with a few other studies, which have attributed men's body image satisfaction to the fact that midlife men may not experience the same societal pressures that midlife women do with regards to appearance, and there is some evidence that men may be more accepting of their bodies as they age compared to women (Esnaola et al., 2010; Feingold & Mazella, 1998; Forrester-Knauss & Zemp Stutz, 2012; Jones & Morgan, 2010). Midlife men may also feel preoccupied by other pressures in midlife. For example, in heterosexual relationships, midlife men often take primary responsibility for the family income while midlife women take maternity leave and/or become the lead child caregiver at home (Charles & James, 2005). The responsibility for income may cause considerable stress for some midlife men and may render body image less important during this period of their lives (Charles & James, 2005; Esnaola et al., 2010; McCabe & Ricciardelli, 2004), and psychological wellbeing is also more closely tied to work for men compared to women (Crowley, 1998; Lodge & Umberson, 2013).

However, the present sample is not representative and the small sample of men means that these results need to be treated with caution. This is particularly the case given that the findings for men contrast with emerging literature which suggests that midlife men may be vulnerable to body image concerns to some degree, although the trends have been far from clear (Boisvert & Harrell, 2012; Forrester-Knauss & Zemp Stutz, 2012; Keel et al., 2007). Nevertheless, the sample was characterised by a reasonable degree of body dissatisfaction and disordered eating, with 28-41% of the women and 8-17% of the men scoring above normative data on these measures.

As well as limitations due to the sample, it is important to acknowledge the issues with measurement in the study. Body image for men is an area of developing knowledge, and current measures such as the one used here may not capture the complexity of body image satisfaction for men, in terms of factors such as body function and physical ability. In addition, men might interpret some of the language

used in a different way to that intended by the measure. For example, the term 'weight' is used in reference to body fat in the MBSRQ, however, some men may interpret weight in relation to muscle mass (Ousley, Cordero, & White, 2008; Parent, 2013; Stanford & Lemberg, 2012). Furthermore, BMI is a fairly crude measure that does not distinguish between muscularity and fat distribution or take into account cultural differences (Rush et al., 2004). Although there is a higher prevalence of obesity in New Zealand's indigenous and Pacific populations (Sundborn et al., 2010), studies comparing BMI across cultural groups suggest these discrepancies are unlikely to be an issue when studying a New Zealand community sample as the variation in body composition, being muscle and fat, across the population is relatively small (Ministry of Health, 2008). These differences have little bearing on the present results given that a very small number of participants were Māori or Pacific Island peoples.

More research on this population group is needed to understand the complexities of midlife adults' perceptions and feelings about their bodies. If there is an increase in body image dissatisfaction over time, across age groups and genders in Western countries, this is likely to become an increasingly concerning public health issue in the future, not only because of the impacts on physical health, but also the relationship with psychological health (Hay et al., 2008; Jackson et al., 2014; Keel et al., 2007; Midlarsky & Nitzburg, 2008; Tiggemann, 2004). Particular attention is needed to further understand these issues as they are relevant for men in midlife. While the men in the present sample were fairly satisfied with their bodies, some have suggested that men see being overweight as a normal part of the ageing process and are unperturbed by this, even though it may pose a risk to their health (McPherson & Turnbull, 2005). Public health professionals may need to consider how to best address contentment with obesity in midlife men without invoking either body image dissatisfaction or disordered eating. Future research should also consider the potential impact of the biological milestones on body image dissatisfaction and disordered eating in midlife women

in particular.

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Measuring Recovery in adult community addiction services

Angela Jury, Mark Smith *Te Pou o Te Whakaaro Nui*

This paper assesses the acceptability, clinical utility and psychometric properties of the recovery section in the Alcohol and Drug Outcome Measure (ADOM). The ADOM is a three part outcome measure developed for routine use in alcohol and other drug (AOD) treatment services in New Zealand. Sections 1 and 2 of the measure have previously been tested. This study evaluated the two recovery items in section 3 with 14 consumer addiction leaders, 11 practitioners, and 1,260 clients in addiction treatment services, including 192 matched pairs between treatment admission and 6-week review. Analyses of the acceptability, clinical utility, convergent validity, and sensitivity to change indicate section 3 exhibits acceptable characteristics and meets minimum standards for consumer-based outcome measures. The recovery section 3 has been recommended for routine outcome measurement in adult community-based (outpatient) addiction services as part of the full ADOM measure.

Keywords: recovery, outcome measure, addiction services, alcohol and other drug, psychometric testing.

Commencing with the Blueprint for Mental Health Services in New Zealand (Mental Health Commission, 1998), there has been a strong commitment towards implementing a recovery approach within New Zealand's mental health and addiction services. The Ministry of Health's strategic document *Rising to the Challenge 2012-2017: Mental Health and Addiction Service Development Plan* (2012) continues to have a strong emphasis on a culture of recovery.

"Recovery" is a subjective term that means different things to different people. Personal recovery differs from clinical recovery, which is primarily focused on symptom abatement and improved functioning (Mental Health Commission, 2011). The recovery process involves people gaining control over their substance use to maximise their health and wellbeing and fully participate in society (see U.K. Drug Policy Commission, 2008). Recovery has been described as "creating a meaningful self-directed life regardless of challenges faced, that includes building resilience, having aspirations and the achievement of these" (Te Pou, 2014a, p. 5). While recovery is an individual process involving multiple pathways which

takes place over time, common elements include relationships and support from others, hope and optimism about the future, building a positive identity, finding meaning in life, personal responsibility and control (Davidson et al., 2008; Davidson & White, 2007; Leamy, Bird, Le Boutillier, Williams, & Slade, 2011). A key component of recovery-oriented service delivery involves supporting clients to strive towards personally valued goals, and reintegrate into society through genuine working relationships, and a commitment to recovery principles (Le Boutillier et al., 2011; Slade, 2012).

The ADOM has been developed for the purposes of routine outcome measurement in AOD treatment services, and includes two items assessing changes in personal recovery. From the outset, development of the ADOM has involved input from people using AOD services in New Zealand. It is important that outcome measures incorporate questions that matter to consumers and their acceptability is assessed (Fitzpatrick, Davey, Buxton & Jones, 1998). The ADOM is a three part measure containing 20 items that is administered collaboratively by practitioners and tangata whaiora (clients). The measure's

standardised administration procedure involves data collection at key clinical treatment stages of treatment admission, 6-week review, 3-month review, ongoing 3-month reviews, and treatment discharge (see Te Pou, 2014b). The ADOM is freely available at <http://www.matuaraki.org.nz>

Section 1 of the ADOM contains 11 relatively specific items assessing the type and frequency of substance use over the past four weeks. Section 2 includes seven items assessing the frequency of lifestyle and wellbeing issues, including physical and mental health, relationships, employment, housing and criminal activity. Both Sections 1 and 2 have previously been tested and recommended for routine use across AOD treatment services in New Zealand (Deering et al., 2009; Galea, Websdell, Galea-Singer, 2013; Pulford et al., 2010).

Section 3 of the ADOM includes two items focused on recovery. The recovery items were added to the ADOM following feedback from clients of addiction treatment services and consultation with sector representatives (Galea et al., 2013). The first recovery item in section 3 assesses how close people are to where they want to be in their recovery. Responses are rated on a 10-point scale ranging from 1 (no anchor) to 10 (best possible). Research by Galea and colleagues (2013) indicates this item is perceived as useful by clients in measuring their recovery. It was however found to have positive but low inter-rater reliability based on eight practitioner's ratings of two vignettes of clinical scenarios (Galea et al., 2013). Factors contributing to the low inter-rater reliability of this item may include the level of training of practitioners in administering the ADOM, the absence of a response anchor for response option one, and the ability of individuals to discriminate between different response options (see Fitzpatrick et al., 1998; Hasson & Arnetz, 2005). Although this type of measure is generally more sensitive to small changes that occur,

the use of alternative response options (for example, a 5-point Likert-type scale) may improve the psychometric properties of this item and be more acceptable to clients. Further testing is required to examine this, along with the validity and sensitivity to change of this recovery item.

Within section 3 of the ADOM, the second recovery item examines how satisfied people are with their progress towards achieving their recovery goals. Responses are rated on a 5-point scale ranging from not at all to extremely. This item is derived from the Brief Addiction Monitor (BAM) developed in the U.S. (Cacciola et al., 2013). Permission to use this item within the ADOM was sought from the author (D. Deering, personal communication, 2014). U.S. research with veterans in outpatient and inpatient addiction programmes indicates this recovery item is acceptable to clients, has excellent test-retest reliability, concurrent validity with quality of life measures, and is sensitive to change. It has been proposed that this recovery item be used as a mental health quality indicator for use internationally to compare system performance across countries (Pincus, Spaeth-Rublee, & Watkins, 2011). This item however requires testing for use in New Zealand AOD treatment services.

This paper describes the testing of the recovery questions in section 3 of the ADOM for routine use in adult community-based (outpatient) addiction services in New Zealand, including the perceived acceptability to clients, clinical utility, convergent validity and sensitivity to change.

Method

Study setting and design

The study involved two adult community addiction treatment services, which included one hospital based secondary mental health and addiction service, and one national non-government organisation. Both services have been using the 20 item version of the ADOM. These services reflect a variety of different adult community-based (outpatient) addiction services in New Zealand, in which the collection of the ADOM is most appropriate (for example, opioid substitution

treatment, joint AOD and mental health service, rural satellite services, and also include services with a large Māori population base). AOD practitioners in these services were invited to complete an online survey. Retrospective de-identified client data collected routinely by practitioners in clinical practice was also extracted. Permission to use this data was obtained in writing. An online survey of consumer leaders in the addiction sector was also undertaken. The Matua Raki Consumer Leadership group distributed the consumer leaders' survey and provided feedback on draft findings and recommendations.

As the project did not involve the collection of data directly from clients of addiction treatment services, the Northern Health and Disability Ethics Committee advised formal ethical approval was not required.

Data collection

Consumer leaders in the addiction sector were asked to rate six questions about the perceived acceptability of the recovery items, including their perceived usefulness for measuring recovery progress during treatment. Sample items included "I would be willing to answer this question" and "how useful is this question for facilitating dialogue and discussion between consumers and clinicians?". AOD practitioners were also asked to rate six questions about the clinical utility of the recovery items, including their perceived usefulness in clinical practice and how practical they were to administer. Sample items included "I feel comfortable asking clients to complete this question" and "how useful is this question for monitoring the recovery progress of consumers". Average scale scores were calculated. Both surveys were administered online using SurveyMonkey.

De-identified client data collected in two clinical settings was obtained. Client data included demographic characteristics and ADOM scores related to AOD use, lifestyle and wellbeing, and recovery.

Psychometric testing

Client data was used to assess item response rates, the convergent validity, and sensitivity to change of the ADOM's recovery items.

Convergent validity is a type of construct validity and involves examining the association of the measure with other related variables (see Fitzpatrick et al., 1998). The current study assessed the convergent validity by examining the correlation coefficients (r) between the recovery items and mental and social wellbeing items included in section 2 of the ADOM. The importance of mental and social wellbeing has been highlighted in conceptual models of recovery in addictions and mental health (Davidson et al., 2008, Davidson & White, 2007; Leamy et al., 2011). The recovery items were expected to have negative and moderate relationships with mental and social wellbeing indicators based on previous research (Dennis, Scott, Funk & Foss, 2005; McNaught, Caputi, Oades & Deane, 2007; Nelson, Young & Chapman, 2014; Salzer & Brusilovskiy, 2014). The convergent validity was also assessed by examining the relationship between the recovery items. Items assessing similar constructs are expected to have a stronger relationship with each other than items assessing other constructs (see Fitzpatrick et al., 1998). A strong and positive relationship between the recovery items was expected. Data from at least 85 clients was required to have sufficient statistical power to detect moderate relationships (see Cohen, 1992).

Sensitivity to change, or the ability to detect meaningful change over time due to treatment, was assessed using data from one organisation with this information available. Mean scores at treatment admission were compared with those at 6-week review (+/- 2 weeks). While a longer time period would allow for greater changes to be detected, the analyses were restricted by available data. Paired samples t-tests were conducted and the effect size was calculated using Cohen's d . Matched pair data collections from at least 64 clients at baseline and follow-up were required to detect moderate mean differences (see Cohen, 1992).

Data analysis

All data was screened prior to analysis. Client data with more than 25% of missing responses on the ADOM were deleted from analysis. In total, 21 cases were deleted, of which 12 were at

treatment admission and nine at 6-week review.

Ethnicity was prioritised so that New Zealand Europeans and other ethnicities that also identified as Māori or Pacific were coded as the latter. Preliminary analyses indicated that one of the addiction treatment services had a greater proportion of Māori and less Pacific peoples than the other. However, the results of both services were combined given preliminary analyses yielded similar results. Analyses were performed using SPSS version 22 using listwise deletion.

Results

A total of 14 consumer leaders in the addiction sector completed an online survey about the perceived acceptability of the recovery items, including at least two Māori and four New Zealand Europeans. Online surveys about the clinical utility of the recovery items were also completed by 11 AOD practitioners, including 10 New Zealand Europeans/ Other, one Pacific person; four males and seven females.

Data from 1,260 clients were available for analysis at treatment admission and 262 at 6-week review. There were a total of 192 matched pairs between treatment start and 6-week review. Baseline characteristics in Table 1 indicate two-thirds of clients were males and one-third Māori. Alcohol and cannabis use were most frequently reported as shown in Table 2. Table 3 also indicates problems with work, study or caregiving were common among clients.

Table 1. Client Demographic Characteristics at Baseline

Measure	Baseline (N=1,260) %	Baseline & 6-week review (n=192) %
Gender		
Male	70.3	68.6
Female	29.5	30.9
Transgender	<1.0	<1.0
Ethnicity		
Māori	32.8	24.2
Pacific	12.8	14.9
Asian	<1.0	<1.0
NZ European/Other	54.0	60.3

Table 2. Any AOD Use Over the Past Month at Baseline

Substance	Baseline (N=1,129) %	Baseline & 6-week review (n=192) %
Alcohol	74.8	71.1
Cannabis	31.6	27.1
Amphetamine	11.2	10.5
Opioids	3.3	3.1
Sedative/tranquiliser	4.5	5.2
Cigarettes/nicotine	68.3	66.1

Table 3. Lifestyle and Wellbeing Indicators Over the Past Month at Baseline, N=1,260

ADOM Section 2 Measure	Never	<weekly	1-2 x week	3-4 x week	Daily
%					
Physical health interference	56.2	13.9	10.4	4.9	14.6
Mental health interference	48.5	15.2	12.1	8.7	15.5
AOD use led to family/friend conflict	60.3	19.5	9.3	5.5	5.4
AOD use led to work/activity interference	65.2	14.0	9.0	4.2	7.6
Engaged in work/other activity	24.8	3.7	8.4	8.8	54.4
Housing difficulties	86.6	5.6	1.3	1.3	5.2
Illegal or criminal activity	80.5	12.4	3.3	1.5	2.3

Acceptability and clinical utility

Both of the ADOM’s recovery items were perceived on average to be at least moderately acceptable and useful to the consumer leaders surveyed (see Table 4). Open ended feedback suggested the recovery items were particularly useful for stimulating conversations with clients about their recovery, developing a better understanding of individual recovery and goals, and reflection by clients who can often be relatively self-critical.

The AOD practitioners surveyed moderately agreed on average that the recovery items were feasible to administer in clinical practice. The recovery items were rated as moderately useful on average for use in clinical settings based on questions about their potential to facilitate dialogue and discussion, monitor clients’ recovery progress, and indicate whether clients had benefitted from treatment or not. Open ended feedback from practitioners indicated the ADOM’s recovery items were particularly useful for facilitating discussion about the meaning of recovery with clients, looking at individual recovery goals, and for clients in reflecting on their recovery journey. The recovery items were also seen as useful for creating a sense of hope amongst clients. Practitioners noted how client improvement was often associated with changes over time in client expectations about recovery and their goals.

Psychometric testing

Item response rates are one indicator of the acceptability of items to respondents. The analysis of client data indicated that both the recovery items had less than 5% missing data. Item response rates ranged from 96-97%.

The relationship between items was examined to assess the convergent validity. Table 5 indicates that both of the recovery items (ADOM questions 19 and 20) had a negative and moderate relationship with indicators of mental and social wellbeing at baseline. Similar relationships were detected using 6-week review data. Table 4 also indicates the recovery items had a large and positive relationship with each other.

To assess the sensitivity to change of the recovery items, individual client ratings at baseline and follow-up were compared. In response to the question

“overall, how close are you to where you want to be in your recovery”, 18.2% of client ratings worsened, 22.4% stayed the same, and 59.4% improved between treatment admission and 6-week review. Over the same time period, 13.5% of people’s ratings of their level of satisfaction with their progress towards achieving their recovery goals worsened, 34.4% stayed the same, and 52.1% improved.

On average, significant mean differences between baseline and 6-week review were detected for both recovery items (see Table 6). Recovery ratings were on average moderately higher at 6-week review compared with treatment admission.

Table 4. *Acceptability and Clinical Utility of the Recovery Items*

Measure	Consumer leaders’ responses (N=14)	
	Q19. Overall, how close are you to where you want to be in your recovery? M (SD)	Q20. How satisfied are you with your progress towards achieving your recovery goals? M (SD)
Acceptability		
Acceptability*	3.1 (0.7)	3.3 (0.6)
Perceived usefulness#	3.2 (0.8)	3.3 (0.7)
	AOD practitioners’ responses (N= 11)	
Clinical utility		
Feasibility*	3.3 (0.4)	3.2 (0.8)
Perceived usefulness#	3.4 (0.9)	3.3 (0.9)

Note. *Rated on a 4-point scale ranging from 1=*disagree* to 4=*strongly agree*. #Rated on a 4-point scale ranging from 1=*not at all useful* to 4=*very useful*.

Table 5. *Correlation between the Recovery Items and Mental and Social Wellbeing at Baseline, N=1,160*

Measure	Q19	Q20
Q13. Mental health interference	-.45*	-.38*
Q14. AOD use led to family/friend conflict	-.44*	-.33*
Q15. AOD use led to work/activity interference	-.42*	-.34*
Q19. How close to where you want to be in your recovery	-	.67*
Q20. Satisfaction with progress towards achieving recovery goals	.67*	-

Note. **p*<.01

Table 6. Change in Recovery between Baseline and 6-Week Review, $n=192$

Measure	Baseline	6-weeks	p	Effect size d
	$M(SD)$	$M(SD)$		
Q19. How close to where you want to be in your recovery	5.5 (2.6)	6.7 (2.2)	<.001	0.53
Q20. Satisfaction with progress towards achieving recovery goals	3.2 (1.2)	3.8 (1.1)	<.001	0.53

Discussion

The main aims of this study were to assess the acceptability and clinical utility of the recovery items included in the ADOM, as well as their convergent validity and sensitivity to change.

Client-based outcome measures need to incorporate questions that matter to clients of addiction treatment services (see Fitzpatrick, et al., 1998). Earlier research provides some evidence to support the acceptability of the ADOM's recovery items amongst clients (see Cacciola, et al., 2013; Galea, et al., 2013). The low proportion of missing data found on the recovery items in the current study provides further evidence indicating they are acceptable to clients in addiction treatment services. Consumer leaders in the addiction sector also indicated that they understood the recovery items, that the questions were easy to answer, and that they would be willing to answer these.

Earlier work has identified the importance of gaining practitioner 'buy-in' in the implementation and routine use of outcome measures (see Wheeler, Websdell, Galea & Pulford, 2011). When practitioners were asked similar questions to consumer leaders, they indicated the recovery items were feasible to administer in clinical practice. There was a high level of agreement between consumer leaders' and practitioner's ratings of the acceptability and feasibility of the recovery items.

Both consumer leaders and AOD practitioners perceived the recovery items to be useful in clinical practice. The ability of the recovery items to facilitate dialogue and discussion was seen as their greatest benefit. Feedback also indicated that the process of measurement can

help facilitate recovery by generating hope and optimism, and is strengthened where there is support from others. The results indicate the recovery items have at least a moderate level of acceptability to consumer leaders and clinical utility amongst AOD practitioners surveyed.

Validity is a key psychometric property of any measure and can be assessed using a variety of strategies. Tests of convergent validity were undertaken and indicate the recovery items were related to indicators of mental and social wellbeing. These findings were expected based on models of personal recovery (see Leamy, et al., 2011) and previous research (McNaught, et al., 2007; Nelson, et al., 2014; Salzer & Brusilovskiy, 2014). The convergent validity was also demonstrated by the detection of a strong and positive relationship between the recovery items.

The ability of a measure to detect changes over time is an important characteristic of client-based outcome measures (Fitzpatrick, et al., 1998). While recovery ratings for some individuals may worsen in the initial stages of treatment, small improvements on average were expected within the first 6-weeks. Scores on both of the recovery items were found to increase on average between treatment admission and 6-week review. The amount of improvement in progress towards achieving recovery goals was similar to that reported by Nelson and colleagues (2014) over a period of four weeks amongst U.S. veterans in an inpatient addiction programme. Findings indicate the recovery items are sensitive to change.

Another important psychometric property is the reliability or consistency of results produced by a measure at different

times or by different raters (Coolican, 1994). U.S. research indicates the item assessing progress towards achieving recovery goals has excellent test-retest reliability (Cacciola, et al., 2013). The item assessing how close people are to where they want to be in their recovery was found to have positive but low inter-rater reliability when tested by Galea and colleagues (2013). This may be partly explained by the level of practitioner training in administering the ADOM. Nevertheless, when the findings of Galea et al. were recoded onto a 5-point scale based on the ADOM information systems guidelines (Te Pou, 2014b), a high level of agreement between raters was found in post-hoc analyses, with 7 out of the 8 practitioners having corresponding ratings. Evidence therefore indicates both the recovery items have an acceptable level of reliability.

Based on data collected from a range of sources and addiction settings, the study provides evidence indicating both the recovery items included within the ADOM meet minimum psychometric testing standards for consumer-reported outcome measures (see Fitzpatrick et al., 1998; Reeve et al., 2013). Nevertheless, several key limitations need to be taken into account.

Valuable insights for this project were gained from a small convenience sample of consumer leaders in the addiction sector. It would also be useful to talk to clients directly in clinical settings who are likely to currently be at different places in terms of their wellbeing and recovery journey, and may have different levels of literacy and understanding of the concept of recovery.

The current study gathered feedback from a small sample of AOD practitioners working in two organisations. As the professions of practitioners were not gathered, it is not possible to assess whether the views of different groups vary. In addition, the level of readiness to implement the ADOM and the perceived benefits amongst practitioners may differ in other clinical settings. Use of the recovery items may also be more challenging in some contexts and with some population groups. The utility of the recovery questions in residential settings also requires testing.

Recovery is an individual process that is aided by a range of factors over

time. Clients of addiction treatment services may appear to have made little recovery progress based on their ratings of the ADOM's recovery items if their recovery goals have changed. Such ratings may also inappropriately suggest that treatment has been ineffective. The tool can nevertheless help facilitate discussion with clients about their recovery aspirations and the process of recovery. There may however be differences in practitioner's and clients' understandings of the recovery concept. The inclusion of a recovery definition within the ADOM may help facilitate greater shared understandings and more standardised administration. There is also growing interest in exploring perspectives on the concept of recovery and wellbeing across the diversity of clients. This will assist in refining the ADOM and other client-based outcome measures.

Finally, this study's findings are based on pooled data provided by two organisations. While potential differences in the results were examined in preliminary analyses, the data from only one organisation was used in sensitivity to change analyses. This largely reflects the length of time the ADOM has been implemented within different organisations. Once data is available over a longer time period, it would be useful to undertake further analyses.

Conclusion

In summary, the two global recovery items included in the ADOM meet minimum standards for their introduction to routinely assess client recovery as part of the full measure in adult community-based (outpatient) addiction services. Findings indicate measurement of the recovery process is beneficial for clients of addiction services. The tool is reportedly enabling better engagement and discussion with clients about their recovery and progress. As a result, clients may be more involved in their treatment and engaged in their own care, leading to better treatment outcomes (see Donnelly et al., 2011; Goodman, McKay, & DePhilippis, 2013). For AOD practitioners, the routine collection of recovery data can help in assessing treatment progress, informing future planning, identifying the need to make

treatment changes, and in reflecting on their own practice (see Donnelly, et al., 2011; Hatfield & Ogles, 2004). At a service level, standardised recovery outcome data is useful for informing and demonstrating a commitment to recovery oriented service planning and delivery.

Based on the study's findings it is recommended that both the recovery items be considered for routine use as part of the ADOM in adult community-based (outpatient) addiction services in New Zealand. Further research examining the test-retest reliability, concurrent validity with more comprehensive measures, and the generalisability of the results to different populations and clinical settings (e.g., residential and primary care settings) is also recommended to build a stronger evidence base. Future research into the reliability should consider the utility of a 5-point response scale being used for both recovery items, and the impact of factors such as training in the administration of the ADOM. Nevertheless, testing indicates that the recovery items meet minimum psychometric testing standards for client-reported outcome measures. The recovery items in section 3 of the ADOM as part of the full measure should therefore be considered for the national collection of mental health data into PRIMHD (programme for the integration of mental health data). This would make New Zealand one of few countries currently in the world in which measurement of recovery forms part of its national mental health data collection.

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Secondary traumatic stress, vicarious posttraumatic growth, and coping among health professionals; A comparison study.

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The current study explores the relationship between coping strategies and psychological outcomes of vicarious traumatic exposure, as well as investigating inter-speciality differences between five distinct groups of health professionals. Results suggested that self-care and social support from friends and family negatively predicted secondary traumatic stress (STS), while humour, self-care and peer support positively predicted vicarious posttraumatic growth (VPTG). Social workers experienced the highest levels of STS and VPTG, while psychologists experienced the lowest levels of both variables. Regarding coping, generally psychologists and counsellors reported the highest utilisation of coping strategies, while doctors and nurses reported the lowest utilisation. However, the opposite pattern was found for peer social support; nurses reported significantly higher levels of peer support than psychologists. Implications of these results are discussed.

Keywords: Vicarious posttraumatic growth, secondary traumatic stress, coping, social support, self-care, humour, health professionals

Health professionals are vicariously exposed to a range of traumatic events including physical injury, rape and sexual abuse, motor vehicle accidents, and disasters (Crabbe, Bowley, Boffard, Alexander, & Klein, 2004). There is empirical evidence to suggest that such vicarious traumatic exposure, characterised as exposure to details of a traumatic event through contact with a direct trauma survivor (e.g., Brockhouse, Msetfi, Cohen, & Joseph, 2011), can have both negative and positive psychological consequences (e.g., Arnold, Calhoun, Tedeschi, & Cann, 2005). Negative psychological consequences have been characterised as secondary traumatic stress (STS), symptoms consistent with Posttraumatic Stress Disorder among direct trauma survivors - the only difference being that STS develops from vicarious rather than direct traumatic exposure (Canfield, 2005). Positive psychological consequences of vicarious traumatic exposure include vicarious posttraumatic growth (VPTG), positive changes to self-perception, interpersonal relationships, and one's philosophy of life (for a review of the VPTG

literature see Manning-Jones, de Terte, & Stephens, 2015). The utilisation of coping strategies may be one factor that could affect the development of STS and VPTG, and the relationship between these constructs has not been studied in a New Zealand context. The current study aims to explore three commonly used coping strategies, social support, self-care and humour, and investigate how these coping strategies are related to psychological outcomes of vicarious traumatic exposure.

In addition, very little research has systematically investigated whether certain health specialities have a greater vulnerability to STS, or are more likely to develop VPTG compared with other groups of health professionals. In other words, there is a lack of research that has investigated whether health specialists, defined as specific groups or types of health care professionals, differ from one another in their reactions to vicarious traumatic exposure, and their methods of coping. Differences in workplace culture, professional training, the stage at which professionals come

into contact with direct trauma survivors, the amount of time they spend with trauma survivors, and the nature of the treatment and care that specialists are able to offer may all contribute to differences between types of health professionals. The current study aims to investigate whether medical doctors, nurses, social workers, psychologists, and counsellors differ in the extent to which they experience STS and VPTG, and whether they differ in their utilisation of coping strategies. Results may indicate ways that vulnerable specialities can be better supported in the workplace and how VPTG can be fostered in specialities that generally do not experience it to a high degree.

Coping following vicarious traumatic exposure

Lazarus and Folkman (1984) defined coping as behavioural and cognitive strategies used to manage stressful situations. Health professionals have reported utilising a range of coping strategies in the work place including religion and spirituality, debriefing with colleagues, humour, accepting their professional limits, separating their professional and personal lives, and engaging in pleasurable events in their spare time (e.g., Clemons, 2004; Markwell & Wainer, 2009; Marriage & Marriage, 2005). It is possible that coping strategies work in a two-fold manner following vicarious traumatic exposure. First, they may protect against symptoms of STS; that is, it is possible that the more health professionals engage in coping strategies in the workplace and in their personal lives, the less likely they are to experience symptoms of STS. Second, coping strategies may facilitate VPTG. It may be that the more health professionals utilise coping strategies, the more likely they

are to experience positive psychological growth as a result of their challenging occupational experiences. It is important to understand the relationship between coping strategies and STS and VPTG among New Zealand health professionals as such information may be able to inform best practice guidelines regarding how health professionals can look after themselves following vicarious traumatic exposure, and what organisations can do to support their employees.

Social support

Social support, including supervision, peer support, and support from friends and family, has been indicated by health professionals to be one of their most vital and frequently used coping strategies (Iliffe & Steed, 2000; Pearlman & Mac Ian, 1995; Pistorius, Feinauer, Harper, Stahmann & Miller, 2008). Schaefer and Moos (1992) suggested that, following traumatic exposure, social support functions in three ways to aid coping; it enhances social resources through promoting interpersonal relationships, enhances personal resources such as character strengths, and aids the development of further coping skills. Empirical research has shown social support to reduce work-related stress, reduce the risk of burnout, and protect against STS (Killian, 2008; Townsend & Campbell, 2009). It has been claimed that social support helps to mitigate a sense of isolation (Pearlman, 1995); without it health professionals can become dehumanised and less caring, both in their personal and professional lives (Salston & Figley, 2003). In addition, social support has been linked to the development of VPTG (e.g., Linley & Joseph, 2005, 2007). Joseph (2011) claimed that talking through a traumatic experience with supportive others enhances one's ability to process a traumatic event, adopt new perspectives, gain new insights, and ultimately achieve posttraumatic growth. It appears that social support not only reduces the negative effects of vicarious traumatic exposure, but also enhances the benefits of such an experience.

Peer support has been indicated as a particularly beneficial form of social support among health professionals (e.g., Naturale, 2007). Previous research has reported both counsellors (Iliffe & Steed, 2000) and social workers (Hodgkinson &

Steww, as cited in Dunkley & Whelan, 2006) to identify peer support as their most frequently used coping strategy. Among mental health professionals, 95% of participants reported engaging in peer support, which surpassed the percentage who reported experiencing support from supervisors (58%), partners (65%), family/relatives (14.2%), and friends (42.7%; Folette, Polusny & Milbeck, 1994). Furthermore, peer support was reported to be a significant negative predictor of STS among nurses (Townsend & Campbell, 2009), as well as being associated with greater VPTG (Tehrani, 2010). According to Catherall (1995), peers have the power to normalise and reduce the impact of STS, help correct distorted perceptions, offer objective viewpoints on clinical issues, offer a place to express reactions that may be inappropriate to share with clients, provide helpful resources, and help to maintain a therapeutic connection with clients. Thus, peers may be a particularly powerful form of social support.

Self-care

Self-care refers to a wide range of activities that are engaged in to maintain wellbeing. Harrison and Westwood (2009) categorised the self-care strategies reported by their sample of mental health therapists into six domains: physical (e.g., healthy eating, exercise), mental (e.g., continued education, mindful awareness), emotional (e.g., personal therapy, trusting relationships), spiritual (e.g., meditation, meaning and purpose in life), aesthetic (e.g., noting beauty in life), and work-life balance (e.g., maintain a healthy equilibrium). Such strategies have also been noted among counsellors (Iliffe & Steed, 2000), social workers (Naturale, 2007) and therapists working with traumatised children (Lonergan, O'Halloran & Crane, 2004). Self-care strategies have been reported to protect against STS, burnout, and mental illness (Lambert & Lawson, 2013), as well as enhance the likelihood of VPTG (e.g., Arnold et al., 2005). These studies illustrate the use of self-care to effectively combat work-related stress among health professionals, and enhance their ability to identify benefits of their work.

Humour

While less researched than social support and self-care, humour has also

been listed among the most common coping strategies utilised by health professionals (Follette, Polusny, Milbeck, 1994; Schauben & Frazier, 1995). The use of humour in the workplace has been associated with lower levels of stress (Moran & Hughes, 2006) and fewer STS symptoms (Schauben & Frazier, 1995). Wear, Aultman, Zarconi and Varley (2009) reported that their sample of doctors used humour in the workplace to release frustration, stress, anger and tension; distance themselves from their work; and increase communication with peers. Research has yet to investigate the relationship between humour and VPTG; however, research among direct trauma survivors suggests that humour is associated with greater psychological growth following trauma (e.g., Schroevers & Teo, 2008). Theories of humour suggest that it acts to release tension and foster a new perspective on initially distressing situations (Moran & Shakespeare-Finch, 2003). The relationship between humour and VPTG represents a current gap in the literature, and an area where further research is needed.

Inter-specialty differences

Secondary traumatic stress

STS can have devastating effects on the lives of health professionals (e.g., Naturale, 2007); therefore, it is important to be aware of specialties that are particularly vulnerable to developing STS. Researchers have often included multiple types of health professionals in their investigations of STS, but frequently have failed to conduct comparisons between specialties (e.g., Kjellenberg, Nilsson, Daukantaite, & Cardena, 2014). Of the few that have conducted inter-specialty comparisons, results are inconsistent. One study reported that nurses experienced significantly higher levels of STS than doctors (Taubman-Ben-Ari & Weintraub, 2008), while another reported no significant differences between doctors, nurses, or therapists (Shiri, Wexler, Alkalay, Meiner, & Kreitler, 2008a). Furthermore, comparisons between studies are limited due to the varied assessment methods utilised by previous research. The Secondary Traumatic Stress Scale (STSS; Bride, Robinson, Yegidis, & Figley, 2004), Professional Quality of

Life Scale (ProQOL; Stamm, 2005), the Impact of Events Scale (IES; Weiss & Marmar, 1997) and the Revised PTSD Inventory (Solomon, Benbenishty, Neria, Abramowitz, Ginzburg & Ohry, 1993) are just a few of the assessment scales that have been used to assess STS. Meadors, Lamson, Swanson, White and Sira (2009-2010) included three of these scales, the STSS, IES and ProQOL, to assess STS among four groups of professionals; doctors, nurses, chaplains, and child life specialists. While tests of statistical difference were not provided, differences in the patterns of results suggest that findings are impacted by the measurement scales utilised. For example, of the four groups, nurses scored the highest on the STSS and the IES, but the lowest on the compassion fatigue subscale of the ProQOL. This makes it difficult to identify those types of health professionals that are particularly vulnerable to STS. Research that compares a range of health professionals using the same assessment measure is needed to identify those health professionals with the greatest risk of developing STS.

Vicarious posttraumatic growth

Although VPTG is a relatively new construct, there is already research documenting this phenomenon among a wide range of health professionals (e.g., Arnold et al., 2005; Ben-Porat & Itzhaky, 2009). However, only two studies have investigated inter-speciality differences (Shiri et al., 2008a; Taubman-Ben-Ari & Weintraub, 2011). Shiri et al. (2008a) reported that nurses and psychotherapists experienced significantly higher levels of VPTG than doctors. Taubman-Ben-Ari and Weintraub (2011) also reported nurses to have significantly greater VPTG than doctors. A comparison between studies investigating VPTG among health professionals is aided by the majority of previous research utilising the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) to measure VPTG. Overall, it appears that therapists (Linley & Joseph, 2007) and nurses (Shiri et al., 2008a; Taubman-Ben-Ari & Weintraub, 2008) experience the highest levels of VPTG, followed by social workers (Gibbons, Murphy, & Joseph, 2011), counsellors (O'Sullivan & Whelan, 2011), and finally doctors (Shiri et al., 2008a; Taku, 2014). However,

research in this area is limited due to poorly defined sample populations. For example, the term "therapist" has been used to describe social workers (e.g., Ben-Porat & Itzhaky, 2009), psychologists (e.g., Linley & Joseph, 2007), a mix of mental health professionals (e.g., Samios, Rodzik, & Abel, 2012), and undefined groups of health professionals (e.g., Brockhouse et al., 2011). Research that investigates differences in VPTG among a range of clearly defined groups of health professionals would aid in the identification of those health professionals most likely to gain benefits from their work with trauma survivors, and may indicate ways that the development of VPTG can be supported among other specialities.

Coping strategies

Among psychologists and counsellors, reported coping strategies include self-education regarding STS symptoms, maintaining professional distance with clients, social support in the form of engaging in supervision and debriefing, exercise, taking regular breaks from work, and engaging in pleasurable activities (Hunter & Schofield, 2006; Lonergan, O'Halloran & Crane, 2004). Among social workers common coping strategies involved activism, feminism, spirituality, positive peer interaction, humour, and revenge fantasies (Clemans, 2004). Markwell and Wainer (2009) reported that the most effective strategies at managing stress among junior doctors included spending time with friends and family, exercise, taking time off, and discussing concerns with a mentor. Finally, nurses reported coping strategies included acceptance, wishful thinking, avoidance, spirituality and positive appraisal (Kalichman, Gueritault-Chalvin, & Demi, 2000). Qualitative literature in this area has greatly contributed to our understanding of the use of coping strategies among health professionals, but a lack of quantitative research makes direct comparisons between health professional groups difficult. To the authors' knowledge, no research has compared a range of health professionals on their use of coping strategies in a systematic manner that allows for direct comparisons; such research would be fruitful.

The current study

The current study has two major aims. First, it aims to explore the relationship between coping strategies and STS and VPTG. Specifically, social support, self-care, and humour were chosen as coping strategies of interest because they appear to be common adaptive coping strategies reported among a wide range of health professionals. It is hypothesised that social support, self-care and humour will negatively predict STS, and will positively predict VPTG. Second, the current study aims to compare differences between types of health professionals in regard to the extent that they use coping strategies frequently cited in the literature, and their levels of STS and VPTG. Because research comparing health professionals is limited and has yielded inconsistent results, the second part of this study is framed as an exploratory investigation of inter-speciality differences, and is not driven by specific hypotheses.

Method

Participants

A sample of 365 health professionals participated; 103 social workers, 76 nurses, 72 counsellors, 70 psychologists, and 44 medical doctors. The majority of participants were female (82%) and currently living in New Zealand (97%). Participants most commonly identified their ethnicity as New Zealand European/Pākehā (72%), Other European (12%), New Zealand Māori (4%), Australian (2%), or a combination of response options (2%). Participants had a mean age of 48.20 years; counsellors had the highest mean age (52.76 years), while psychologists had the lowest (44.50 years). On average participants had worked in their field for an average of 17.20 years, and spent 13.48 hours of their typical working week with trauma clients (see Table 3 for a breakdown of this information across professional groups).

Measures

Secondary traumatic stress. The Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) was used to measure STS. This 17-item scale, designed for use with professionals working with

trauma survivors, was constructed to align with the revised fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) diagnostic criteria of Posttraumatic Stress Disorder. Therefore it measures symptoms of intrusion, avoidance, and hyperarousal. Participants were required to indicate the extent to which they agreed with each statement on a 5-point Likert scale, and possible scores ranged from 17 to 85. It has been suggested that scores up to 37 indicate nil to mild STS, scores between 38 and 43 indicate moderate STS, scores between 44 and 48 indicate high STS, and scores above 49 indicate severe levels of STS (Bride, 2007). Previous research has shown the STSS to be a psychometrically sound measure (Bride et al., 2004). Cronbach's alpha in the present study = .93.

Vicarious posttraumatic growth.

The Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) was used to measure VPTG in the current study. This 21-item scale measures five distinct forms of growth: relating to others, identifying new possibilities, personal strength, spiritual change, and appreciation of life. Participants rate the extent to which they have experienced the growth described in each item on a 6-point Likert scale, and scores can range from 0 to 105. It has been argued that scores below 60 indicate a low level of growth, scores between 60-79 indicate a moderate level of growth, and scores 80 or above indicate a high level of growth (Feder et al., 2008). The PTGI has good psychometric properties (Tedeschi & Calhoun, 1996), and has been used numerous times in previous research to measure VPTG (e.g., Linley & Joseph, 2007). Consistent with previous research (e.g., Shiri, Wexler, Alkalay, Meiner & Kreitler, 2008b), participants were asked to focus on their work with trauma victims before filling out this measure. Wording of response options was altered from "I have/have not experienced this change as a result of my crisis" to "I have/have not experienced this change as a result of my work". Cronbach's alpha in the present study = .95.

Social support. The Social Support Scale (SSS; Caplan, Cobb, French, Van Harrison, & Pinneau, 1975) assesses perceived level of emotional

and instrumental support from three sources: supervisors, co-workers (peers) and family/friends (thus creating three subscales). For each item, participants were required to indicate how much support they got from each source using a 5-point Likert scale ranging from 1 ("Very little") to 5 ("A great deal"). In addition to the four original items, an additional item was included that asked participants to indicate how much each of the support sources helped them to feel prepared for their work. The original response format was applied to this additional question. For the remainder of this article the term "Total Support" will be used to refer to participant's total scores on the scale, and the terms "Supervisory Support", "Friend/Family Support" and "Peer Support" will be used to refer to the three subscales. Cronbach's alpha for the total scale in the present study was = .87. Cronbach's alpha values for the three subscales in the current study were as follows; Supervisory Support = .92, Friend/Family Support = .90, Peer Support = .91.

Self-care. The Self-Care Utilisation Questionnaire (SCUQ; Goncher, Sherman, Haskins, & Barnett, 2013) is a 30-item scale that assesses the extent to which participants utilise a range of self-care activities, using a 5-point Likert scale. Attending to spiritual and religious needs, taking the time to engage in physical activity, and talking to others when stressed are examples of the self-care strategies included in this measure. The SCUQ was originally designed for use with students pursuing the degree of clinical psychology. For the current study this measure was adapted for use with health professionals; where items referred to the graduate training program or "clinical work", items were changed to refer to "work" generally. Where items referred to "psychology" as an interest area, items were altered to refer to "healthcare". Cronbach's alpha in the present study = .91.

Humour. The Self-Enhancing Humor subscale of the Humor Styles Questionnaire (HSQ; Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003) is an 8-item measure that assesses the use of humour as a coping strategy and the extent that participants can maintain a positive and humorous outlook on life despite adversity. Participants rate the

extent to which they agree with each item using a 7-point Likert scale. Cronbach's alpha in the present study = .82.

Vicarious traumatic exposure.

Vicarious traumatic exposure was measured in the current study by asking participants to indicate the average number of hours they spend with trauma clients per week.

Years of experience. Participants were asked to indicate how many years they have been working in their current field.

Procedure

Ethical approval for the current study was granted by the Massey University Ethics Committee. Participants were recruited through their professional bodies, workplaces, online directories, health care organisations, or through social media. Questionnaires were administered via an online survey that took approximately 15-20 minutes to complete. Participants were provided with a Participant Information Sheet prior to filling out the survey and were provided with the option to request a summary of results upon completion. In addition, participants were entered into a prize draw to win one of three \$50 book vouchers as a token of the researchers' appreciation of their participation.

Statistical analysis

SPSS version 21 was used to conduct all statistical analyses. A preliminary t-test was conducted to assess for gender differences. Pearson's r correlation and stepwise regression analyses were used to investigate the relationship between coping strategies and STS and VPTG. Stepwise regression was chosen because it enables the identification of the unique variance that each individual predictor variable explains of the outcome variable. Assumptions of independence, linearity, multicollinearity, and adequate sample size (for stepwise regression at least 40 cases per independent variable; Tabachnick & Fidell, 2013) were satisfied for all regression analyses. A total of 10 outlier values were identified and reduced to one unit above the highest non-outlier value (Tabachnick & Fidell, 2013); no identifiable pattern was observed in their occurrence. Assumptions of multivariate normality and heterodasticity were satisfied for those analyses using PTGI

scores as the dependent variable. For those analyses using STSS scores as the dependent variable, analysis of histogram and normal P-P plots suggested slight heterodasticity and deviation from normality; however, it has been argued that regression is robust to such violations (Li, Wong, Lamoureux, & Wong, 2012; Tabachnick & Fidell, 2013; van Belle, 2002). However, these violations should be taken into consideration when interpreting results.

To assess whether participants differed by profession on the three coping strategies, STS, and VPTG, a MANOVA (Multiple Analysis of Variance) was conducted. Assumptions of MANOVA were assessed. Violations to assumptions of multicollinearity were not indicated. There was evidence of deviation from normality; however, MANOVA is robust to violations of normality when an adequate sample size is utilised (minimum 20 per group, Mardia, as cited by Tabachnick & Fidell, 2013). Similarly, visual analysis of matrix scatterplots suggested evidence of possible curvilinear relationships, which can reduce the power of MANOVA; however, results presented here are likely to be robust because of the large sample size. The Games-Howell post hoc analysis was used to compensate for unequal sample sizes and several demonstrations of unequal variance.

Results

Relationship between coping strategies and STS and VPTG

Table 1 displays the results of Pearson's r correlation analyses between coping strategies and participants' reported STSS and PTGI scores. A stepwise regression analysis was performed to assess which coping strategies significantly predicted STSS scores. Those coping strategies which had a significant correlation with STSS scores were entered as predictor variables, that is, Peer Support, Supervisory Support, Friend/Family Support, and SCUQ scores (Table 1). Total Support was not included due to high levels of multicollinearity with each individual form of social support. Results of this analysis are presented in Table 2. The total model explained 15% of the variance in STSS scores,

$F(2,362) = 31.74, p < .001, \text{Adj } R^2 = .15$. SCUQ scores predicted 11% of the variance in STSS scores, while Friend/Family Support explained a further 4% of the variance over and above SCUQ scores. Peer Support and Supervisory Support were not found to be significant predictors over and above the SCUQ scores and Friend/Family Support.

analysis was performed to assess whether those coping strategies significantly correlated with PTGI scores (see Table 1) also acted as significant predictors. Peer Support, SCUQ scores, and HSQ scores were entered as predictor variables; again Total Support was not included due to multicollinearity. Results are presented in Table 2. Overall, the predictor model

Table 1.

Pearson's r correlations between coping variables and STSS and PTGI scores

	STSS	PTGI
Total Support	-0.30**	0.12*
Peer Support	-0.16*	0.18**
Supervisory Support	-0.24**	0.04
Friend/Family Support	-0.26**	0.02
SCUQ	-0.34**	0.28**
HSQ	-0.06	0.28**

* $p < .05$ ** $p < .01$. Note. STSS= Secondary Traumatic Stress Scale. PTGI= Posttraumatic Growth Inventory. SCUQ= Self-Care Utilisation Questionnaire. HSQ= Humor Styles Questionnaire.

Table 2

Stepwise regression analyses with STSS and PTGI scores as the dependent variables and coping variables as the predictors.

Dependent variable		b	t	R ² change	p
STSS scores	SCUQ	-0.34	-6.83	0.11	<0.001
	Friend/Family Support	-0.19	-3.88	0.04	<0.001
	Supervisory Support	-0.10	-1.90	--	0.06
	Peer Support	-0.03	-0.57	--	0.57
PTGI scores	HSQ	0.28	5.61	0.08	<0.001
	SCUQ	0.22	4.32	0.05	<0.001
	Peer Support	0.11	2.18	0.01	0.03

Note. STSS= Secondary Traumatic Stress Scale. PTGI= Posttraumatic Growth Inventory. SCUQ= Self-Care Utilisation Questionnaire. HSQ= Humor Styles Questionnaire.

A second stepwise regression was able to explain 14% of the variance in participants' PTGI scores, $F(2,362) =$

18.95, $p < .001$, $\text{Adj } R^2 = .13$. HSQ scores predicted 8% of the variance in PTGI scores, SCUQ scores explained a further 5% over and above HSQ scores, and Peer Support explained a further 1% over and above HSQ and SCUQ scores combined.

Gender effects

An independent t-test was conducted with the overall sample to assess whether males and females differed significantly on any of the key variables included in the current study. Females ($M=11.71$, $SD=14.60$) were found to score significantly higher than males ($M=106.43$, $SD=13.87$) on the SCUQ, $t(99.46) = -2.25$, $p = 0.03$. There were no significant differences between females and males on any of the other measured variables (all p values were greater than 0.05).

Inter-speciality differences

Participants' mean scores and standard deviations for key variables are displayed for each professional group in Table 3. Social workers were observed to report the highest scores on the PTGI and the STSS, while psychologists scored the lowest on both these scales. Counsellors reported the highest Total Support and SCUQ scores; doctors scored the lowest. Nurses reported the highest HSQ scores, while doctors once again scored the lowest. Nurses followed by doctors reported the most years of experience, while psychologists reported the least. Finally, social workers and counsellors reported the highest level of vicarious traumatic exposure in the workplace, while psychologists and doctors reported the least.

A one-way MANOVA was used

Table 3

Means and standard deviations (in parenthesis) for each individual profession for key variables.

	Doctors	Nurses	Psychologists	Social workers	Counsellors
Years of Experience	19.34 (10.15)	22.68 (12.53)	13.05 (10.50)	16.00 (9.95)	15.66 (8.87)
Vicarious Traumatic Exposure	8.11 (10.10)	16.66 (14.31)	8.47 (6.43)	17.79 (12.73)	12.11 (8.15)
STSS	30.02 (9.68)	30.64 (10.08)	27.60 (7.85)	32.48 (12.00)	28.60 (8.92)
PTGI	73.17 (21.18)	81.53 (21.22)	72.04 (22.69)	84.60 (17.38)	78.51 (23.90)
Total Support	47.38 (11.10)	51.67 (9.86)	53.02 (10.20)	51.44 (10.91)	54.50 (9.60)
Supervisory Support	13.02 (5.96)	15.76 (5.07)	18.75 (4.23)	17.64 (5.24)	20.16 (4.07)
Peer Support	16.07 (4.34)	18.11 (4.14)	15.78 (4.90)	17.19 (4.56)	16.32 (5.44)
Friend/Family Support	18.30 (5.18)	17.80 (4.80)	18.49 (4.73)	16.61 (5.27)	18.07 (5.28)
SCUQ	101.42 (13.21)	105.21 (17.11)	112.19 (12.92)	110.72 (13.09)	116.75 (11.66)
HSQ	39.07 (7.33)	42.05 (7.43)	39.19 (7.42)	40.66 (7.69)	39.75 (7.23)

Note. STSS= Secondary Traumatic Stress Scale. PTGI= Posttraumatic Growth Inventory. SCUQ= Self-Care Utilisation Questionnaire. HSQ= Humor Styles Questionnaire.

to assess whether differences between professional groups were significant. A significant multivariate effect for occupation was found, Wilks $\lambda = .50$, $F(44.00, 1340.97) = 6.12$, $p < .001$. Given the overall significant effect, univariate main effects were assessed. Significant main effects were found for STSS scores, $F(4, 360) = 2.99$, $p = .02$, and PTGI scores, $F(4, 360) = 4.85$, $p = .001$. Regarding social support, a significant main effect was found for Total Support, $F(4, 360) = 3.51$, $p < .01$, Supervisory Support, $F(4, 360) = 17.96$, $p < .001$, and Peer Support, $F(4, 360) = 2.92$, $p = .02$. Significant main effects were also found for participants' SCUQ scores, $F(4, 360) = 11.46$, $p < .001$, Years of Experience, $F(4, 360) = 9.13$, $p < .001$, and Vicarious Traumatic Exposure, $F(4, 360) = 11.98$, $p < .001$. No significant main effects were found for HSQ scores or Friend/Family Support.

Games-Howell post hoc analyses were conducted to assess where significant differences occurred (i.e., between which professional groups). Social workers were found to have significantly higher STSS scores than psychologists ($p = .01$, $d=0.48$), and significantly higher PTGI scores than psychologists ($p = .001$, $d=0.62$) and doctors ($p = .02$, $d=0.60$). Regarding social support, significantly higher Total Support scores were reported by counsellors compared to doctors ($p = .01$, $d=0.69$). Counsellors ($p < .001$, $d=1.40$), psychologists ($p < .001$, $d=1.11$) and social workers ($p < .001$, $d=0.82$) reported significantly greater Supervisory Support than doctors; counsellors ($p < .001$, $d=0.96$) and psychologists ($p = .001$, $d=0.64$) reported

significantly greater Supervisory Support than nurses; and counsellors reported significantly higher Supervisory Support than social workers ($p < .01$, $d=0.54$). Regarding Peer Support, significantly higher scores were obtained by nurses compared to psychologists ($p = .02$, $d=0.51$). Concerning participants SCUQ scores, counsellors ($p < .001$, $d=1.23$), psychologists ($p < .001$, $d=0.82$) and social workers ($p < .001$, $d=0.71$) scored significantly higher than doctors; counsellors ($p = .001$, $d=0.79$) and psychologists scored significantly higher than nurses ($p < .001$, $d=0.46$); and counsellors scored significantly higher than social workers ($p < .01$, $d=0.49$). Nurses were found to have been working in their field for a significantly longer amount of time than psychologists ($p < .001$, $d=0.83$), counsellors ($p = .001$, $d=0.64$), and social workers ($p < .01$, $d=0.60$); and doctors had worked in their field for significantly more time than psychologists ($p = .02$, $d=0.61$). Social workers were exposed to significantly higher levels of vicarious traumatic exposure than doctors ($p < .001$, $d=0.84$), psychologists ($p < .001$, $d=0.92$), and counsellors ($p < .01$, $d=0.53$); nurses were exposed to significantly higher levels of vicarious traumatic exposure than doctors ($p < .01$, $d=0.69$) and psychologists ($p < .001$, $d=0.74$); and counsellors were exposed to significantly higher levels of vicarious traumatic exposure than psychologists ($p = .03$, $d=0.50$).

Discussion

The current study had two major aims; a) to investigate the relationship between coping strategies and STS and VPTG, and b) to explore differences

among five separate professional groups; medical doctors, nurses, social workers, counsellors and psychologists. The results will be discussed around these two aims separately.

Aim one: To investigate the relationship between coping and STS and VPTG.

Social support. Overall social support ('Total Support') was found to be significantly positively correlated with VPTG, and significantly negatively correlated with STS. All three forms of social support (peer support, support from supervisors, and support from friends and family) were significantly correlated with STS. In addition, social support from friends and family was found to be a significant negative predictor of STS, accounting for 4% of the variance in STS over and above the variance explained by self-care. Social support may protect against STS by increasing social and personal resources and facilitating the development of further coping strategies (Schaefer & Moos, 1992).

Peer support was found to be positively correlated with VPTG, and was also a significant positive predictor variable, although it accounted for only an additional 1% of the variation in participants' PTGI scores over and above the variance explained by humour and self-care. Catherall (1995) argued that peers offer a powerful form of social support through their ability to offer an objective perspective, help to correct distorted perceptions, provide a safe place for health professionals to express themselves, and provide useful resources. It may be that these are some of the characteristics of peer support that foster its association with VPTG. These results highlight that different forms of social support may be beneficial in different ways; It may be that friends and family are better equipped to provide support when things go wrong (i.e., in the face of STS), while peers may provide the type of social support needed to reach a higher level of functioning and experience VPTG. Therefore, results suggest that different forms of social support all have an important role in enhancing the wellbeing of health professionals.

Self-care. Self-care was negatively correlated with STS, and positively correlated with VPTG. Furthermore, self-care was the primary negative

predictor of STS, explaining 11% of the variance in participants' STSS scores, and was a positive predictor of VPTG, explaining 5% of the variance in participants' PTGI scores over and above the variance explained by humour. Self-care was the only coping strategy that functioned to simultaneously predict lower levels of STS and higher levels of VPTG, highlighting its vital role in the workplace. It may be that it simultaneously acts as a protective factor against STS, while facilitating the VPTG process. These results highlight the benefit of using self-care in daily life to enhance health professionals' wellbeing, and health professionals and their employing organisations are encouraged to consider how they can incorporate self-care into the workplace, for example promoting work-life balance and maintaining a healthy lifestyle.

Humour. In contrast with previous research (e.g., Schauben & Frazier, 1995), a negative correlation between humour and STS was not found. It would seem that participants engaged in the use of humour as a coping strategy regardless of whether they were experiencing STS. However, humour was found to be correlated with higher levels of VPTG, and was a significant predictor variable accounting for 8% of the variance in participants' PTGI scores. Previous research has reported a positive relationship between humour and posttraumatic growth among direct trauma survivors (e.g., Schroevers & Teo, 2008), and the current study provides the first piece of empirical research confirming these findings among populations vicariously exposed to trauma. It is possible that humour facilitates the development of VPTG by aiding in the development of new perspectives (Moran & Shakespeare-Finch, 2003).

Aim two: To explore differences among health professionals' reactions to, and ability to cope with, vicarious traumatic exposure.

STS and VPTG. Results indicated that social workers experienced significantly greater levels of STS than psychologists, and significantly higher levels of VPTG than psychologists and doctors. These results likely reflect the high level of vicarious traumatic exposure reported by social workers, which was

significantly higher than that reported by psychologists and doctors. Because social workers are often involved in the immediate disaster and trauma response effort (e.g., Naturale, 2007), they may be more likely to witness the despair and devastation that trauma survivors experience immediately following the traumatic event (Joseph, 2011). This may increase their risk of developing STS, but may also promote their likelihood of developing VPTG. It is also possible that social workers experience a higher level of identification with their clients than other health professionals, which may enable them to metaphorically apply the traumatic event to their own lives, increasing their levels of STS and VPTG. Results reported here contradict comparisons of previous studies where psychologists (e.g., Linley & Joseph, 2007) gained higher scores on the PTGI than social workers (e.g., Gibbons et al., 2011); however, they are consistent with comparisons where social workers (Gibbons et al., 2011) obtained higher scores on the PTGI than doctors (Taku, 2014). Contributing factors to these inter-speciality differences may include time spent with trauma clients, strength of emotional connection or identification with clients, or the level of resilience found in each profession. Overall, these results suggest that it is important to provide social workers with resources to support and protect them from STS, while maintaining opportunities for VPTG to occur. It also highlights the fact that, just because a health professional is exhibiting signs of VPTG, it does not mean that they do not also require support for STS.

Coping strategies. Regarding social support, findings suggest that counsellors experience higher levels of perceived social support than doctors. When the three types of social support were taken into consideration, it was noted that counsellors and doctors obtained similar scores on the subscales measuring peer support and support from friends and family; the significant difference in overall perceived social support appeared to be driven by a perceived difference in supervisory support. This suggests that social support from supervisors is an important component in overall perceived social support, and steps should be taken to ensure that supportive

supervision is available to all types of health professionals.

In the present sample counsellors, psychologists, and social workers experienced greater supervisory support than doctors; psychologists and counsellors experienced greater supervisory support than nurses; and counsellors experienced greater supervisory support than social workers. Psychologists, counsellors, and social workers are required to engage in regular supervision by their respective practicing boards, and they may lose their practicing licence if these guidelines are not adhered to. In contrast, nurses and doctors do not have this same expectation, and thus may not engage in regular supervision. Therefore, results likely reflect the availability of supervision, rather than suggesting that nurses and doctors would not find supervision a helpful coping strategy. Providing doctors and nurses with some form of regular supervision may prove beneficial to their workplace functioning.

Significantly higher levels of perceived peer support were reported by nurses compared with psychologists. Nurses often work in settings where they interact with a large number of their peers and share client responsibilities among a team. In contrast, psychologists often work in settings with considerably fewer peers, or even alone if they work in private practice. Even when psychologists work alongside peers, they do not share responsibility for clients and therefore may have fewer opportunities to engage in peer support. In addition, issues of confidentiality may prevent psychologists from sharing with peers as much as they would like. Holding daily meetings in settings such as District Health Boards or engaging in informal peer support groups may be several ways in which psychologists and their employers could reduce the risk of peer isolation while being mindful of confidentiality.

Finally, results suggested that counsellors, psychologists, and social workers engaged in a significantly greater level of self-care compared to doctors; counsellors and psychologists reported significantly greater self-care than nurses; and counsellors reported significantly greater self-care than social workers. This may reflect a greater

awareness on the part of psychologists, counsellors, and to a lesser extent, social workers regarding the effectiveness of self-care as a coping strategy. These three professions are likely to have come across the usefulness of self-care in their training, and are likely to work toward engaging clients in self-care strategies frequently. This may have contributed to a personal awareness of the effectiveness of self-care and an enhanced implementation of personal self-care strategies. Self-care education and facilitation in the workplace, such as the promotion of healthy caseloads and socialising with peers outside of the workplace, may facilitate self-care utilisation among doctors and nurses.

Limitations

There are several limitations to consider in the current study. First, the generalisability of the sample needs to be considered. Doctors, nurses, psychologists, counsellors, and social workers were included in the current study because they were deemed to represent health professionals who have frequent contact with trauma clients; however, they by no means represent an exhaustive list of the health professionals that work with trauma survivors. Results presented here should not be considered generalisable to professions not included in the current study. In addition, the current sample was largely female and identified as New Zealand European. Based on data from Statistics New Zealand (2015; personal communication, April 30 2014) and the Ministry of Health (2011, 2014), this is consistent with the wider population of health professionals in New Zealand. However, it is unknown whether the current sample is representative in terms of vicarious traumatic exposure, years of experience, or other professional characteristics; therefore, care should be taken when generalising results. Future research that includes a greater range of health professionals and compares health professionals cross-culturally would be beneficial.

Second, while the current sample size was large enough to satisfy statistical requirements, it is possible that more subtle differences between health professionals went unnoticed due to insufficient power. The presented results

should be replicated with a larger sample size to investigate this possibility. In addition, it should be noted that the current study was entirely cross-sectional in design, and therefore no inferences regarding causality can be made.

Third, the current study investigated whether differences would occur among health professionals' reactions to, and ability to cope with, vicarious traumatic exposure, but addressing why these differences occur was beyond the scope of the current study (although potential explanations were explored). Future research could investigate whether factors such as emotional connection with clients or treating physical versus mental injuries, for example, can account for the inter-speciality differences reported here. It may also be that the differences reported here are partly due to differences in the way that health professionals interpreted and responded to the measures included in the survey. For example, some professional groups may have had greater knowledge and preconceived ideas about the psychological effects of working with trauma survivors, and this may have impacted the way they responded to the measures. Future research could investigate whether the STSS and PTGI do in fact measure the same constructs across different professional groups.

Summary

Overall, the present findings suggested that social workers are most likely to experience both STS and VPTG, while psychologists were the least likely to develop either psychological outcome of vicarious traumatic exposure. Regarding coping, generally psychologists and counsellors reported the greatest utilisation of coping strategies, social workers displayed a moderate amount, and nurses and doctors displayed the least. However, the opposite pattern was true for peer support; nurses obtained significantly higher scores than psychologists. All professions utilised a comparable level of humour. Overall, these results suggest that those health professionals who are at the greatest risk of developing STS are also the most likely to benefit from vicarious traumatic exposure, and that these professionals tend to engage in a moderate level of coping. Results suggest

that the use of self-care in one's personal and professional life, social support from friends and family, peer social support, and humour may be coping strategies health professionals can use to reduce the chance of STS and enhance the likelihood of VPTG.

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The validation of the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) amongst Pacific people in New Zealand

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The aim of this study was to examine the validity of the WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in Pacific People in New Zealand (NZ). Face validity was initially examined via focus groups. Feedback was largely positive with suggestions for modifications (simplifying questions, incorporating local slang), adopted and incorporated. The concurrent, construct and discriminative validity of the modified ASSIST was then examined in 150 Pacific people (100 from primary care, 50 from addiction treatment). Participants were administered the modified ASSIST and a battery of tests that offered alternative measures of the phenomena of interest. Results demonstrated that the ASSIST had satisfactory concurrent and construct validity. Results for discriminative validity were limited, in that participant numbers in drug categories, other than alcohol, were too small to permit analyses. The modified ASSIST could be used as a culturally acceptable screening tool for problematic substance use for Pacific people in NZ, but further research is required to examine discriminative validity.

Keywords: ASSIST, validation, problematic substance-use, Pacific, New Zealand

Pacific people in New Zealand (NZ) have higher rates of substance use disorder than that of the general New Zealand population. The NZ Mental Health Survey showed that the lifetime prevalence of any substance use disorder for Pacific People in general was 17.7% compared to 12.3% in the general population, and the 12 month prevalence was 4.9 % compared to 2.7 % in the general population (Oakley, Wells, & Scott, 2006). The most prevalent specific substance use disorders were related to alcohol use and marijuana use (Ministry of Health, 2008, 2010). Furthermore, Pacific people are reportedly less likely to use alcohol and other drug services than other groups that would have the potential to reduce current and potential drug-related harms (Ministry of Health, 2008).

The link between screening for substance use and effective interventions for problematic drug use in primary health care settings (i.e., general practice, community health centers)

is well established and is recognized as a cost effective method of reducing disease burden (WHO Assist Working Group, 2002). The Alcohol Smoking and Substance Involvement Screening Test (ASSIST) was developed for the World Health Organization (WHO) to screen for problem or risky use of tobacco, alcohol, cannabis, cocaine, amphetamine type stimulants, sedatives, hallucinogens, inhalants, opiates and other drugs in primary care settings (WHO Assist Working Group, 2002). The ASSIST (Version 3.0) is a pencil and paper questionnaire consisting of 8 items. The interview commences with a general screening question that asks about lifetime drug use. If the respondent admits to recent drug use the interview continues, but if there has been no drug use then the interview can be terminated. Question 2 asks about recent drug use (last 3 months). If none of the substances have been used in the last three months then the interviewer skips to the final three questions that explore problems and patterns of use

in their lifetime. Question 3 measures psychological dependence; Question 4 harmful substance use; Question 5 asks about whether the respondents have failed to meet role obligation; Question 6-8 asks about lifetime and recent problems including whether friends or relatives have expressed concern, prior attempts at controlling their drug use, and whether they inject. The interview can be completed in about 10 minutes (Humeniuk et al., 2008). According to the score obtained on the questionnaire respondents can be classified according to their level of risk (low or non-problematic substance use, moderate or risky use, high or problematic/dependent use) (Humeniuk et al., 2008). For those individuals whose substance use may be classified as 'moderate risk' (that is, harmful but non-dependent), and whose substance use may otherwise have gone undetected, an appropriate brief intervention can be delivered (Humeniuk et al., 2008).

The ASSIST has undergone initial psychometric evaluation through a multisite international study to ensure that it is feasible, reliable, culturally acceptable and valid in the populations in which it was tested (Australia, Brazil, India, Thailand, United Kingdom, USA, Zimbabwe) (Humeniuk et al., 2008; Newcombe, Humeniuk, & Ali, 2005). Studies have explored its validity within different population groups; older adults (Khan et al., 2012), adolescent primary care patients (Gryczynski et al., 2015), prison inmates (Holmwood, Marriott, & Humeniuk, 2008) and psychiatric patients (Hides et al., 2009; Khan et al., 2011) In all cases the ASSIST was found to be acceptable and valid as a screen for poly drug use. Furthermore, it has been translated into a number of languages according to the WHO guidelines for translation and adaptation

of instruments (http://www.who.int/substance_abuse/activities/assist/en/index.html), and a number of these have undergone psychometric evaluation, including the French (Khan et al., 2011) and Portuguese versions (Henrique, De Micheli, Lacerda, Lacerda, & Formigoni, 2004). However, the ASSIST has not been validated for use within Pacific people in New Zealand. Indeed, as far as the authors are aware no screening tests have been created specifically for Pacific people in primary care settings (Matua Raki, 2011). Therefore, demonstrating the validity of the ASSIST in Pacific people should encourage its use by health professionals, and will facilitate early detection of problematic substance use and permit the delivery of an appropriate intervention that is likely to reduce harms from substance misuse.

The aim of this project was to determine the validity of the ASSIST (Version 3.0) in Pacific People in New Zealand. In order to do this we conducted two studies; the first examined the face validity of the ASSIST in a sample of Pacific People resident in New Zealand in order to determine if any modifications to the existing ASSIST questionnaire (Version 3.0) were required to enhance its appropriateness for this population; the second study was a formal examination of the concurrent, construct and discriminative validity of the ASSIST questionnaire that had been modified to reflect the results obtained from the first study.

Study 1 – Examination of the face validity of the ASSIST with Pacific people

Method

Participants and Study Design

Ethical approval was obtained from the University of Auckland Human Participants Ethics Committee. Face validity is described as the applicability or the relevance of the test to the population. It is not usually a parameter that can be described using statistical methods but rather is a qualitative assessment of whether or not an instrument is reasonable and applicable and “makes sense” to the people it is administered (Davidshofer & Murphy, 2005; Nevo,

1985). Therefore a series of structured focus groups were used to examine the face validity of the ASSIST (version 3.0) questionnaire.

Three focus groups were conducted with Pacific community members. These were stratified into three age groups: Focus Group (FG) 1 (18-29 years), FG 2 (30-44 years), and FG 3 (45+ years). All groups comprised mixed gender and mixed Pacific ethnicity. A fourth FG was conducted with an expert group of Pacific alcohol and drug health practitioners. Participants were recruited using the personal contacts of the researchers. The non-expert groups were recruited by one of the authors (JS) who is of Samoan ethnicity, and members of the expert panel were recruited by other authors (DN and VN) who have contacts with local Pacific Alcohol and Drug services. Participants were excluded if they were not 18 years of age or over, did not identify with a Pacific identity or were currently being treated or had been treated for alcohol or drug problems (excluding nicotine dependence) in the past. The latter criterion was included to ensure that participants were likely to be representative of those who would access primary health care (and hence who are the target of screening) rather than people with experience of problematic substance use and/or who had engaged specialist alcohol and drug services. Twenty participants were recruited, Ten Samoan, 4 Fijian, 3 Niuean, and 3 Tongan; Ten were male and ten were female.

Procedure

All focus groups were facilitated by one of the authors (JS) who is an experienced Pacific researcher. Cultural protocols determined which practices regarding opening, conduct and closing of the groups were observed. Accordingly in some cases, groups were opened with a prayer or on one occasion a kava ceremony. In brief, participants were asked to undertake three tasks during the focus groups: 1) To consider the instructions on the front page of the questionnaire, and whether changes were required to increase understanding of them; 2) To consider the list of drug names provided in Question 1 of the questionnaire (lifetime use), and whether they reflected the local colloquialisms for each drug; 3) To consider each question

that comprised the ASSIST (version 3.0) questionnaire and to report any difficulty in their understanding of each question. Discussion during the focus groups were recorded using a digital audio recorder and transcribed by the researcher shortly after the interview took place. The transcripts were reviewed for emergent themes using a general inductive approach (Thomas, 2006). Key themes across transcripts were grouped and summarized.

Results and Discussion

In the interest of brevity only the key themes will be presented. In general, participants across all four focus groups reported few issues with the introduction. Participants in the key expert group suggested that that the length of the introduction should be shortened as much as possible, particularly when interviewing young adults. In addition, there was consensus around the need to simplify the language used, or to be prepared to explain to the interviewee terms such as ‘illicit’.

Participants in all four focus groups were able to provide local colloquialisms for tobacco products (for example, ciggies, rollies, smokes, chewing tobacco, cigars), alcoholic beverages (beer, wine, spirits, home brew, RTD's) and cannabis (weed, ganja, mary jay, hash, dack). However, only alcohol and drug clinicians were able to supply alternative names for the remainder of the drug categories; for example for amphetamine-type stimulants the common names supplied included P, ice, crystal meth, ecstasy, and for opioids they included done/methadone, neurofin, homebake. They also suggested that the colloquialisms for all drug categories produced during the focus groups be stated alongside the supplied common name for each drug. Furthermore, they suggested kava be included as a separate category. Even though it could be included in the “other” drug category, some participants felt that given the importance of kava drinking among some Pacific people it would be worthwhile to also specifically include it in the ASSIST (Nosa & Ofanoa, 2009; Pacific Research and Development Services, 2004).

Participants did not report any issue with understanding questions 1 (Which of the following substances have you

ever used?) and question 2 (In the past three months, how often have you used the substances you mentioned?). Question 3 asks “during the past three months, how often have you had a strong desire or urge to use [insert drug name]?” Participants had a good grasp of the terms “strong desire” and “urge” describing it as:

‘How often do you really really want to take that substance; do you really really need it?’ [Female, FG 3]

Question 4 reads “during the past three months, how often has your use of [insert drug] led to health, social, legal or financial problems?” Participants across all focus groups indicated that they or their peers might have difficulty understanding this question for a number of reasons. Firstly there may be a language barrier:

‘I think probably only a New Zealand born would understand ... but for everyone else you’d really have to break it down’ ... [Male, FG 4]

To overcome this, participants suggested giving examples:

You say “health” and just explain. Are you tired, lazy, don’t want to do any stuff during the day, sleepiness... Rather than use the word “financial” use the word “money”. [Female, FG 2]

Secondly, some participants felt that this question could be broken down into separate questions for easier understanding.

‘So do you have any health issues because of the way you’ve been drinking or how much you’ve been drinking?’ ‘Have you ever gotten in trouble with the law over the past 3 months because you’ve been drinking or you’ve been drunk?’ and then you’d explore that further and then move on. [Female, FG 4].

Participants did not report any issues with understanding question 5 “During the past 3 months, how often have you failed to do what is normally expected of you because of your use of [insert drug]?”. However participants were concerned with aspects of Question 6 “Has a friend or relative or anyone else ever expressed concern about your use of [insert drug]?” Participants were uncomfortable with the term “expressed concern” and participants in all four focus groups instead preferred the word

“worry”. For example;

‘Has anyone ever worried about your use of alcohol’ [Female, FG 1]

‘Worry, worried, just say worried’ [Female, FG 2]

Many participants foresaw difficulties in understanding question 7 which reads “Have you ever tried and failed to control, cut down or stop using [insert drug]?” The major issue identified concerned the length of the question. This could be overcome by breaking the question into parts for easier understanding, as is recommended in the questionnaire manual (Humeniuk, Henry-Edwards, Ali, Poznyak, & Monteiro, 2010). Participants also mentioned that wherever possible it is important to have a Pacific person administer the ASSIST questionnaire, and to have available Pacific language translations of the questionnaire.

In summary, the aim of this study was to examine the face validity of the ASSIST (V3.0) in People of Pacific ethnicity in New Zealand as the first step in its formal validation for use with this population group. For the ASSIST to be more acceptable to the Pacific community in New Zealand a number of recommendations were proposed and which were incorporated into a modified version of the questionnaire (ASSIST V3.0r). These were: 1) Shorten the length of the introduction as much as practicable; 2) Incorporate common/slang names into the questionnaire so drug categories are more easily identifiable; 3) Expand the ASSIST drug categories to include kava use; 4) Use simpler words (where possible) and replace terms such as “expressed concern” with everyday words such as “worry”. The ASSIST (Version 3.0r) is attached (Appendix 1.)

Study 2 - Validation of the modified ASSIST (ASSIST Version 3.0r)

Method

Participants and study design

Ethical approval for this study was obtained from the New Zealand Health and Disability Ethics Committee (Ref. CEN/11/03/011). One hundred and fifty people who self-identified as being of

Pacific ethnicity were recruited for this study between July 2011 and February 2013. The sampling procedure utilised was based on that previously described (Newcombe et al, 2005). In brief, to ensure that the sample comprised of participants who exhibited a range of substance use, from occasional or non-problematic substance use through to dependent use, 100 hundred participants were recruited from primary care settings, such as Pacific Primary Health Organisations (GP surgeries), and 50 from specialist addiction treatment settings. The aim was to establish three reference groups; 1) abstinence or non-problematic users, 2) current substance users (abuse), and 3) dependent users. In addition, a stratified sampling procedure was used to ensure that recruitment was balanced with regard to gender and the following age groups: 18-25, 26-35, and 36-45 years. Every attempt was made to ensure adequate representation of each of the major Pacific Island groups present in New Zealand (i.e., Samoan, Tongan, Cook Island Māori, Niuean, and others). The following exclusion criteria were used to screen out ineligible participants; 1) inability to speak or understand English, 2) aged under 18 or over 45 years, 3) communication difficulties, 4) severe behavioural disturbances, and 5) current drug and alcohol intoxication and/or withdrawal.

Procedures

Participants from community settings were recruited by way of flyers placed in the waiting rooms of agencies. Interested individuals were asked to phone a Pacific researcher for a preliminary screen to determine if they were suitable for the study. Recruitment of participants from treatment settings was by means of flyers placed in outpatient clinic areas or through direct approaches from a Pacific researcher or the treating clinician. In both cases the individuals were provided with a participant information sheet and permitted time to consider their involvement in the study, with instructions to contact the researcher if they were interested in volunteering.

A comprehensive test battery was administered, either in the private of the participant’s home, or at the research office in the University grounds or treatment setting. Participants were

assured that all information provided was strictly confidential and provided informed written consent. All interviews were undertaken by trained Pacific researchers and took between 60-90 minutes to complete. Participants were compensated NZ \$50 upon completion of the testing.

Measures

The comprehensive test battery consisted of a demographic questionnaire that collected information on sociodemographic variables, educational and occupations status, and past treatment for alcohol and drug use, the modified ASSIST questionnaire (ASSIST V3.0r), and the following standardised questionnaires:

- The Addiction Severity Index-lite version (ASI-Lite) which assesses lifetime and recent (last three months) alcohol and drug use (but not tobacco use), and family history of related problems (McLellan et al., 1985b);
- The Severity of Substance Dependence Scale (SDS) that assesses aspects of psychological dependence (Gossop, Best, Marsden, & Strang, 1997);
- The MINI international Neuropsychiatric Interview (MINI-Plus), a structured diagnostic interview that assesses DSM IV major axis 1 disorders. In this study sections related to drug and alcohol use (lifetime and last 12 months), attention deficit/hyperactivity (ADHD) and, to antisocial personality disorder (ASPD) were administered to determine the presence/absence of diagnosis of substance abuse/dependence and ADHD/ASPD disorder (ADHD) (Sheehan et al., 1998);
- The Drug Abuse Screening Test (DAST) designed to assess the medical, social and behavioural events common to drug users (Skinner, 1982);
- The Alcohol Use Disorders Identification Test (AUDIT) to permit comparison with ASSIST alcohol scores (Saunders, Aasland, Babor, De la Fuente, & Grant, 1993);
- The Revised Fagerstorm Tolerance Questionnaire (RTQ) which measures nicotine dependence and supplements information provided by the ASI-lite which does not collect information about tobacco use (Tate &

Schmitz, 1993);

- The Maudsely Addiction Profile (MAP) which provides a functional assessment of an individual's physical health, anxiety and depression (Marsden et al., 1998).

The following domains derived from the ASSIST were utilised in this study (Newcombe et al., 2005). The Specific Substance Involvement Score (SSI) for each substance (calculated by summing the response weights to Q2-Q7 within each substance class), the Current Frequency of Substance Use (item score for Q2 for each substance), the Total Current Frequency of Use (the sum of response weights for Q2 across all substances, excluding tobacco and other drugs) and, the Global Continuum of Risk Score (including alcohol and tobacco) (calculated by summing the response weights to Q2-Q8 across all substances plus Q8).

Data analysis

Data were analysed using IBM SPSS 21. Proportions, mean±standard deviation (SD) were used to summarise the baseline characteristics. Independent samples t-test and chi square were used to investigate differences between the primary health group and treatment groups at baseline. SPSS undertakes Levene's test of homogeneity of variance when undertaking t-tests and adjusts the probability accordingly. Statistical tests were two tailed. In view of the increased likelihood for type 1 error caused by multiple comparisons, the alpha level was adjusted so that $P < 0.01$ was required for significance.

The examination of the psychometric properties of the modified ASSIST (V3.0r) utilised the protocol previously described (Newcombe et al., 2005). In brief, concurrent validity was assessed by comparing ASSIST scores with relevant scores from other instruments which measure the same or similar phenomena. Pearson's correlation coefficients were calculated between ASSIST scores and scores from the ASI-lite, MINI-plus, SDS, RTQ, DAST, and AUDIT. In addition, independent t-tests were used to compare SSI scores for each substance divided according to the presence or absence of Mini Plus diagnoses of current or lifetime substance abuse or dependence.

Construct validity was examined by comparing ASSIST scores with scores obtained from instruments designed to measure phenomenon or constructs of interest. Pearson's Correlations were calculated between ASSIST scores and measures derived from the MAP and ASI that reflect physical, psychological or social problems associated with substance use. ASSIST scores divided according to MINI-plus diagnoses of ADHD and ASPD were also compared using independent t-tests. Individuals with either of these disorders are at a higher risk of developing substance related disorders and so would be expected to have higher ASSIST scores (Babor, Kranzler, & Lauerman, 1989).

In order to examine discriminative validity participants were grouped into three groups (dependence, abuse and non-problematic substance use). Those in the dependent group were participants who met MINI-plus diagnoses for current dependence on certain substances. Participants recruited from primary health care settings were classified as substance abusers or non-problematic users, according to presence/absence of MINI-Plus diagnoses. One-way analysis of variance (ANOVA), with post hoc Scheffe's tests, were used to compare ASSIST scores between the three groups with a significant difference in ASSIST scores between groups indicating good discriminative validity. Receiver operating characteristic (ROC) analysis was used to identify cut-off scores which would discriminate between non-problematic use and abuse, and abuse and dependence.

Results

Sample characteristics

Table 1. presents sociodemographic details for all one hundred and fifty participants interviewed for this study. The mean age of the sample was 30.6 years ($SD = 7.70$) and there were equal numbers of male and female participants. Approximately an equal proportion of participants identified themselves as either Samoan (37%) or Tongan (36%), with 19% as Niuean and the remaining as Cook Island Maori (7%). Approximately half ($n = 73$) of participants were unemployed; 42% ($n = 63$) were employed full time,

and nine percent (n=14) employed part-time, respectively. There were significant between group (Primary Health Care vs Addiction Treatment) differences in education level, marital status, employment status, and ASSIST score for tobacco, alcohol, cannabis and amphetamines.

Concurrent validity

Comparison with the Addiction Severity Index, SDS, RTQ and AUDIT. There were significant positive correlations ($r = 0.45 - 0.86$; $P < 0.001$) between the ASSIST Current Frequency of Use Score (ASSIST Q2) for alcohol, cannabis, cocaine, amphetamine-type

stimulants, inhalants, hallucinogens and opioids and the relevant questions from the ASI. As the ASI classifies substances differently than the ASSIST (i.e. it has two questions for sedatives and three for opiates) the substance used most frequently was used for the comparison with ASSIST scores. There

Table 1. Socio demographic and clinical details of participants

	Group			Statistic (P-value)
	Total sample (n=150)	Primary Health Care (n=100)	Addiction Treatment (n=50)	
Age, mean ±SD	30.6±7.7	30.45±7.41	30.56±78.0	$t = -0.83, 0.934^{NS}$
Gender, n (%)				
Male	75 (50)			
Female	75 (50)			
Ethnicity n (%)				$\chi^2 = 11.72, 0.02^{NS}$
Samoan	56 (37.3)	28 (28)	28 (56)	
Tongan	54 (36.0)	41 (41)	13 (26)	
Cook Is	10 (6.7)	23 (23)	6 (12)	
Niuean	29 (19.3)	7 (7)	3 (6)	
Tokelauan	1 (0.7)	1 (1)	0 (0)	
Education, yrs ±SD	13.06±3.68	14.35(3.25)	10.50±3.11	$t = 6.94, < 0.0001$
Professional Status, n (%)				$\chi^2 = 30.93, < 0.0001$
Working	77 (51.3)	65 (65.0)	9 (18)	
Not working	73 (48.7)	33 (33.0)	41 (82)	
Married Status, n (%)				$\chi^2 = 7.79, 0.004$
Married/co-habiting	66 (44.0)	52 (52.0)	14(28)	
Single/divorced/separated	84 (56.0)	48 (48.0)	35 (70)	
ASSIST SSI Score , mean ±SD				
Tobacco	11.8±11.5	8.46±10.3	18.56±10.9	$t = -5.6, < 0.001$
Alcohol	13.4±11.2	10.35±9.4	19.38±12.0	$t = -4.7, < 0.001$
Cannabis	4.8±8.8	2.80±6.1	8.70±11.7	$t = -3.4, 0.001$
Cocaine	0.7±3.0	0.18±1.1	1.58±4.7	$t = -2.1, 0.046^{NS}$
ATS	1.7±5.9	0.36±1.4	4.28±9.5	$t = -2.9, 0.006$
Inhalants	0.5±1.7	0.21±1.2	1.02±2.3	$t = -2.3, 0.024^{NS}$
Sedatives	0.6±2.6	0.19±1.3	1.28±4.1	$t = -1.9, 0.069^{NS}$
Hallucinogens	0.3±1.4	0.15±0.8	0.72±2.1	$t = -1.9, 0.065^{NS}$
Opioids	0.1±0.5	0.02±0.2	0.16±0.9	$t = -1.5, 0.28^{NS}$
Kava	0.4±1.6	0.27±1.4	0.52±2.0	$t = -0.87, 0.32^{NS}$

Notes: Ethnicity – self-described. ASSIST scores are Specific Substance Involvement Scores for each substance; ATS= Amphetamine-type stimulants. P value – significance for comparisons between Community and Addiction Treatment groups. NS=Not significant.

was also a significant positive correlation ($r=0.82$, $P<0.001$) between the ASSIST Total Current Frequency of Use Score and a derived ASI score (total number of days used in the last three months for all substances on the ASI). The ASSIST Global Continuum of Risk score was significantly correlated with the score obtained on the SDS ($r=0.50$, $P<0.01$), and the DAST ($r=0.74$, $P<0.01$). Furthermore, the ASSIST SSI scores for tobacco and alcohol were significantly correlated with the corresponding scores on the RTQ ($r=0.73$, $P<0.01$) and AUDIT ($r=0.77$, $P<0.01$), respectively.

ASSIST Scores according to Mini-Plus diagnoses. Participants who met criteria for MINI-Plus diagnoses of abuse or dependence for alcohol, cannabis and amphetamines had significantly higher ASSIST SSI scores than those who did not meet such criteria (see Table 2). No participants met diagnostic criteria for any of the remaining substances. The ASSIST Global continuum of risk score was significantly correlated with the total number of individual diagnoses recorded on the MINI-Plus ($r=0.42$, $P<0.001$).

was significantly correlated with the following ASI measures of phenomenon or constructs of interest: family history of addiction related and psychiatric problems ($r=0.36$, $P<0.01$); reported emotional burden of drug and alcohol use ($r=0.65$, $P<0.01$) and financial burden of drug and alcohol use ($r=0.53$, $P<0.01$). Furthermore, the ASSIST SSI alcohol score was significantly correlated with the following ASI measures: the financial burden of alcohol use ($r=0.43$, $P<0.01$), and the emotional burden of alcohol use ($r=0.44$, $P<0.01$), but not with the number of times ever treated for alcohol abuse ($P=0.05$).

ASSIST Global Continuum of Risk and Total Current Frequency of Substance use (excluding tobacco and other drugs) were significantly correlated with the sum of physical and psychological health problems as measured by the MAP, $r=0.57$, $P<0.01$ and $r=0.43$, $P<0.01$).

Comparison with MINI-Plus diagnoses of ADHD and ASPD. The mean Global Continuum of Risk score did not differ between those diagnosed

those participants diagnosed with ASPD (80.8 ± 45.5 ; $n=20$) than those not diagnosed with the disorder (38.8 ± 28.7 ; $n=130$) ($t=-5.57$, $P<0.01$).

Discriminative Validity

Table 3. shows the results of ANOVA and post-hoc analyses used to determine if ASSIST scores from participants in this study were significantly different between the three known groups. There were significant differences between 'use' and 'abuse' for Global Continuum of Risk, and Substance Involvement scores for alcohol. Furthermore, there was a significant difference between 'abuse' and 'dependence' for Global Continuum of Risk, but not for Substance Involvement scores for alcohol. There were insufficient cases to conduct analyses for cannabis, cocaine, amphetamines, sedatives, hallucinogens, opioids, and kava.

ROC analyses identified cut-off scores that best separate the groups. Area under the ROC curve (AUC) is also presented. The closer AUC is to 1 the more disparate the groups.

Table 2. Comparison of mean (SD) ASSIST scores divided according to the presence or absence of MINI-Plus current or lifetime diagnoses of abuse or dependence for each substance.

MINI-Plus current or lifetime diagnosis of abuse or dependence	ASSIST Substance Involvement Score		Statistic, <i>P</i> value
	Diagnosis present (n)	Diagnosis absent (n)	
Alcohol	16.2 (11.4) (110)	5.7(5.8) (40)	$t=-5.6$, $P<0.001$
Cannabis	19.5 (10.9) (12)	3.4 (7.2) (138)	$t=-7.3$, $P<0.001$
Amphetamine-type stimulants	27.8(9.5) (5)	0.8 (3.0) (145)	$t=-17.8$, $P<0.001$
Cocaine	na, 0	0.7 (3.0)	na
Inhalants	na, 0	0.5 (1.7)	na
Sedatives	na, 0	0.6 (2.6)	na
Hallucinogens	na, 0	0.3 (1.4)	na
Opioids	na, 0	0.1(0.5)	na

Note: na= not applicable - no participants met MINI-Plus current or lifetime diagnoses for abuse or dependence on cocaine, inhalants, sedatives, hallucinogens, opioids.

Construct Validity

Comparison with the Addiction Severity Index and MAP. The ASSIST Global Continuum of Risk score

with ADHD (60.2 ± 55.3 ($n=5$) and those who were not (43.9 ± 33.6 ($n=145$), $P=0.29$)). On the other hand, this score was significantly greater for

Table 3. Discrimination between use and abuse: abuse and dependence using ANOVA and Receiver Operating Characteristic (ROC) analysis

ASSIST Domain	ROC (AUC)	ROC Sensitivity (%)	ROC Specificity (%)	ASSIST Cut-off score	ANOVA Mean diff.
Global Continuum of Risk					
Use/abuse	0.82	92	66	29.5	26.67 ***
Abuse/depend ²	0.70	81	60	45.5	25.35 ***
SSI ¹ score for Alcohol					
Use/abuse	0.76	74	75	11.5	10.28 ***
Abuse/depend ²	0.62	65	63	24.5	4.44 NS

Notes: ¹SSI=substance involvement score; ²depend=dependence; *** $P < 0.001$. NS=Not significant. Too few cases to undertake analyses for cannabis, cocaine, amphetamines, sedatives, hallucinogens, opioids, kava. Participants in dependence and abuse groups met MINI-Plus criteria for either diagnosis, respectively.

Discussion

The results of this study clearly indicate that the ASSIST (Version 3.0r) is an acceptable screening test for use with people of Pacific ethnicity residing in New Zealand. In addition the revised version of the ASSIST was found to have good concurrent and construct validity when used in Pacific people who were using a variety of psychoactive substances and who exhibited varying degrees of substance misuse. These findings are consistent with previous studies that have examined the validity of the ASSIST (Hides et al., 2009; Humeniuk et al., 2008; Khan et al., 2011; Newcombe et al., 2005).

In order to examine the validity of the ASSIST in Pacific people we utilised a somewhat unique approach. Initially, the face validity of the ASSIST was examined through a series of focus groups with Pacific community members and Pacific alcohol and drug practitioners. This was considered important to ensure that the test is understood and viewed as culturally appropriate to encourage its adoption by Pacific health professionals and to encourage engagement with Pacific people in the community. Feedback from participants was generally positive regarding their understanding of the questions that make up the test. Participants suggested few changes to the wording and the way some questions could be asked to help in their understanding. In addition they provided local ‘slang’ names for substances that are likely to be understood by local Pacific people. As a result a modified version of the ASSIST was produced that was utilised in the further validation of the test.

In order to examine the concurrent,

construct and discriminative validity of the ASSIST (version 3.0r) we utilised a sampling frame that required the recruitment of participants who exhibited substance use along the continuum of non-problematic to dependent. This was achieved by recruiting participants from community agencies, such as Pacific Primary Health Organisations, and addiction treatment agencies. Recruitment from the latter proved difficult because of the relatively low numbers of Pacific clients who were attending these agencies at the time, which would be consistent with reports that Pacific peoples are less likely to use alcohol and drug treatment services than other groups (Ministry of Health, 2008). Nevertheless, we were successful in recruiting sufficient participants from either context and in establishing groups that could be differentiated on the basis of drug use and other related socio-economic variables. That is, participants recruited from community agencies exhibited lower drug use (ASSIST scores), but greater levels of educational attainment and employment participation, than those recruited from addiction treatment agencies.

The concurrent validity of the ASSIST was clearly evident in the significant positive correlations between ASSIST scores and scores derived from a number of existing gold standard instruments, such as the ASI, SDS, RTQ, and AUDIT, that provided collateral validation of substance use, abuse and dependence. ASSIST SSI scores were significantly greater in those participants who had received a diagnosis of substance abuse or dependence on the MINI-Plus, which indicates that the ASSIST SSI scores reflected problematic

substance use. Moreover, there was also good evidence for the construct validity of the ASSIST in this study. Construct validity was demonstrated by significant correlations between ASSIST scores and measures derived from instruments that provide circumstantial evidence for substance abuse and dependence and its consequences, including physical, psychological and social problems (Babor et al., 1989). In addition, as expected participants diagnosed with ASPD, which is considered a risk factor for developing substance-related disorders (Babor et al., 1989), had significantly higher ASSIST scores than those that were not diagnosed with the disorder.

Results concerning the discriminant validity of the ASSIST were limited and it was only possible to explore alcohol with any reliability for ROC analyses. ASSIST Global Continuum of Risk scores could be used to discriminate between non-problematic use, abuse and dependence. ASSIST SSI scores for alcohol could be used to discriminate between non-problematic use and abuse, but not abuse/dependence. Indeed, the sensitivity and specificity values derived were not optimal in some cases. These results contrast with reports from previous studies demonstrating that ASSIST SSI scores can be used to discriminate between non-problematic substance use, abuse and dependence for most of the drugs of abuse listed by the ASSIST (Humeniuk et al., 2008; Newcombe et al., 2005). One plausible explanation for this discrepancy relates to the fact that the majority of participants recruited from specialised addiction services were enrolled in an abstinence oriented treatment programme. That is,

although they would have a diagnosis of substance dependence they would have likely scored less on the ASSIST, because of their recent abstinence, than if they were not in such a treatment programme. Furthermore, the aforementioned studies (Humenuik et al., 2008; Newcombe et al., 2005) employed external validation of drug use via biological markers, and diagnosis of substance abuse and dependence via an independent clinical evaluation, rather than relying on participant self-report to verify participant's diagnosis of substance abuse or dependence. Unfortunately the latter measures were beyond the scope of this study.

Using a reliable and valid screening tool to detect risky psychoactive substance use is considered a key element to a public health approach to early intervention for drug-related problems (Babor & Kadden, 2005; Humenuik et al., 2008; WHO Assist Working Group, 2002). As Pacific people in New Zealand are reportedly less likely to use alcohol and other drug services than other ethnic groups they are therefore less likely to access appropriate interventions for their drug misuse (Ministry of Health, 2008). Screening tools, such as the ASSIST, provide health professionals with an opportunity to detect and engage with clients who are in need of an intervention for their substance misuse (Humenuik et al., 2012). The ASSIST has a number of advantages over other available screening instruments for substance use, including screening for a variety of psychoactive substances, rather than just one, such as the AUDIT (Saunders et al., 1993) and RTQ (Tate & Schmitz, 1993); it is relatively quick and easy to administer in comparison to other poly drug use screens (such as the ASI (McLellan et al., 1985a)); and it is freely available. In addition, linking a brief intervention (BI) to the scores on the ASSIST allows the health professional to intervene with individuals found to be at risk from using substances. There is good evidence for the effectiveness of BIs for risky alcohol use (Akin, Johnson, Seale, & Kuperminc, 2012; Bien, Miller, & Tonigan, 1993; Heather, 1996) and more recently we have devised a successful intervention for illicit drug use that can be linked to the ASSIST (Humenuik et al., 2012; Newcombe et al., 2005).

Moreover, given the advent of ehealth there is a move to place screening tools, such as the ASSIST online, and provide health messages that are linked to the results of the screening test (McNeely, Strauss, Rotrosen, Ramautar, & Gourevitch, 2016; White et al., 2010). However, without the presence and guidance of the administering clinician there is the potential for confusion concerning the wording and meaning of instructions and questions, hence the need to ensure that the language used is clear. Recently an audio computer-assisted self-interview version of the ASSIST has been created (McNeely et al., 2016) and found to be well accepted and feasible for self-administration, and valid in a sample of primary care patients (McNeely et al., 2016). This offers a viable alternative to the clinician administered version of the ASSIST that may also solve some of the potential concerns regarding the time it takes to administer the instrument and potential confusion over some of the instructions (McNeely et al., 2016; McNeely et al., 2014).

The present study has several limitations, primarily the sample size, and thus the number within certain drug categories (i.e., cannabis, cocaine, inhalants, sedatives, hallucinogens, opioids), was too small to calculate specificity and sensitivity for most substances. Indeed given the small numbers of participants in drug groups, other than alcohol, these results may be considered exploratory. Future research that focuses on recruiting sufficient numbers for the more commonly used illicit drugs, such as a cannabis and amphetamines (Ministry of Health, 2008, 2010), should be undertaken to extend this study. In addition, this was a cross sectional study and hence it was not possible to examine the predictive validity of the ASSIST in this context (Newcombe et al., 2005). We have plans to develop a specific BI for Pacific peoples that would be considered culturally appropriate and, that could be linked to the scores on this version of the ASSIST. This BI could be delivered by the health professional who carried out the screen and therefore would likely enhance the capability to engage with Pacific clients. Despite the abovementioned limitations our findings

suggest that the ASSIST (Version 3.0r) could be used as a screening tool for problematic substance use for Pacific Peoples in the New Zealand context.

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Appendix 1. ASSIST (Version 3.0r)

Question		Response alternatives
Q1	In your life, which of the following substances have you ever used? (NON-MEDICAL USE ONLY) Q1a, tobacco products (cigarettes, rollies, smokes, chewing tobacco, cigars); Q1b, alcoholic beverages (beer, wine, spirits, home brew, RTD's); Q1c, cannabis (marijuana, pot, weed, ganja, mary jay, grass, tinny); Q1d, cocaine (coke, powder, crack); Q1e, amphetamine-type-stimulants (P, ice, crystal meth, ecstasy); Q1f, inhalants (BP, Shell, solvents, nitrous, glue bag, petrol, thinners); Q1g, sedatives or sleeping pills (Downers, Valium, Serepax); Q1h, hallucinogens (Party Pills, LSD, Acid, mushies, PCP, Special K); Q1i, opioids (done/methadone, neurofin, homebake, morphine, codeine); Q1j kava; Q1k 'other drugs	0 =no, 1 =yes
Q2	In the past 3 months, how often have you ever used the substances you mentioned (first drug, second drug, etc.)?	0 =Never 1 =Once or twice 2 =Weekly 3 =Monthly 4 =Daily or almost daily
Q3	During the past 3 months, how often have you had a strong desire or urge to use (first drug, second drug, etc.)?	0 =Never 1 =Once or twice 2 =Weekly 3 =Monthly 4 =Daily or almost daily
Q4	During the past 3 months, how often has your use of (first drug, second drug, etc.) led to health, social, legal or financial (<i>money</i>) problems?	0 =Never 1 =Once or twice 2 =Weekly 3 =Monthly 4 =Daily or almost daily
Q5	During the past 3 months, how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc.)?	0 =Never 1 =Once or twice 2 =Weekly 3 =Monthly 4 =Daily or almost daily
Q6	Has a friend of relative or anyone else ever expressed concern (<i>worry</i>) about your use of (first drug, second drug, etc.)?	0 =No, never 2 =Yes, in the past 3 months 1 =Yes, but not in the past 3 months
Q7	Have you ever tried to control, cut down or stop using (first drug, second drug, etc.)?	0 =No, never 2 =Yes, in the past 3 months 1 =Yes, but not in the past 3 months
Q8	Have you ever used any drug by injection? (non-medical use only)	0 =No, never 2 =Yes, in the past 3 months 1 =Yes, but not in the past 3 months

Notes: For questions 2 to 5. *Never*: refers to not used in last three months. *Once or twice*: refers to using 1-2 times in last 3 months. *Weekly*: refers to using 1-4 times per week. *Monthly*: refers to 1-3 times in 1 month. *Daily or almost daily*: refers to using 5-7 times a week. ASSIST (Version 3.0r) is a modified version of the ASSIST (version 3.0)
http://www.who.int/substance_abuse/activities/assist_v3_english.pdf

Book Review

The Clash of Law & Justice in New Zealand

By Harry C. Midgley II. (2015)

Review by A J W Taylor

This slim volume, written in a readable style by a former Irish lawyer, political adviser, and journalist, is in two parts. The first deals with conflict that arises too often between the administration of law and the pursuit of morality and justice. The second gives Midgley's family background and social circumstances in Ireland that helps to explain his firm attachment to human rights. It makes clear that law and its observance at any given time can only proximate the essentials for safeguarding an ideal society: i.e. justice has moral qualities that might feature only incidentally in the outcome of cases before the courts. Others have drawn attention to legal aspects of the matter, without addressing the wider implications (cf. Justice Sir Thomas Thorp¹). In Lord Acton's memorable phrase "power corrupts, absolute power corrupts absolutely."

In effect, Midgley's deep sense of injustice over the proceedings during the highly publicised complaint of pack-rape that Louise Nicholas laid against three senior police officers, led him to write the book. He began by touching on the long-established and independent functions of lawmakers, law enforcers, and the judiciary that are essential for maintaining a democratic society. Then, he gave credit to the diminishing number of the 'fourth estate' journalists who still draw attention to flagrant examples in any of those sectors that overstep the mark. After citing a few 'celebrated' examples of procedural 'irregularities' that occurred in cases in England, France, Ireland, and New Zealand, Midgley focused on what might be termed the strategies and ploys that the police prosecution and the defence adopted

in an unusual alliance to counter the alarming complaints. Suffice to say, the accused were found not guilty.

In a detailed critique of the case, Midgley appraised the transcripts of evidence, the occasional comments, and rulings of the presiding judge. He considered the background information provided by journalists that might have led to a different outcome had it been allowed to feature in the discourse. As a result, Midgley argues that a tribunal be established to prevent the recurrence of such injustice and that the courts adopt an inquisitorial rather than an adversarial modus operandi to get nearer the truth of reported complaints.

It would be good if the book were to generate reflective responses in publishable form from police, lawyers, and politicians. Certainly it will take some psychologists into unfamiliar territory, while appealing to those in the clinical, community, criminal, cultural, forensic, and social domains. In doing so, it will provide a healthy reminder of earlier days when psychology was an offspring of philosophy and moral principles also featured in its practice, even if their effects defied operational and statistical appraisal.

¹ Cf. Justice Sir Thomas Thorp (2005). *Miscarriages of Justice*. Wellington: Legal Research Foundation.