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Burnout-depression overlap: A study of New Zealand schoolteachers

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We examined the overlap of burnout with depression in a sample of 184 New Zealand schoolteachers. Burnout and depressive symptoms were strongly correlated with each other (r = .73; disattenuated correlation: .82) and moderately correlated with dysfunctional attitudes, ruminative responses, and pessimistic attributions. All the participants with high frequencies of burnout symptoms were identified as clinically depressed. Suicidal ideation was reported by 36% of those participants. Three groups of teachers emerged from a two-step cluster analysis: "low burnout-depression," "medium burnout-depression," and "high burnout-depression." The correlation between the affective-cognitive and somatic symptoms of depression was similar in strength to the burnout-depression correlation. Consistent with recent results obtained in Europe and the U.S., our findings suggest that burnout is a depressive syndrome.

Keywords: burnout; depression; depressive cognitive style; nosology; rumination; stress

Burnout has been conceived of as a long-term, negative affective state consisting of emotional exhaustion, physical fatigue, and cognitive weariness (Shirom & Melamed, 2006; Toker & Biron, 2012). Burnout is considered a product of chronic, unresolvable stress at work (Hobfoll & Shirom, 2001; Maslach, Schaufeli, & Leiter, 2001) and has been associated with a variety of adverse health outcomes (e.g., coronary heart disease; Toker, Melamed, Berliner, Zeltser, & Shapira, 2012). By contrast with an individual experiencing acute, resolvable (work) stress, an individual with burnout feels constantly overwhelmed, drained, and helpless (see Bianchi, Schonfeld, & Laurent, 2015a). Although burnout is not recognized as a diagnostic category in either the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013) or the International Classification of Diseases (World Health Organization, 2016), it has been established as a justification for sick leave in several countries, for example, Sweden and The Netherlands (Schaufeli, Leiter, & Maslach, 2009). Burnout has been extensively studied over the last decades (Bianchi, Verkuilen, Brisson, Schonfeld, & Laurent, 2016).

Depression is primarily characterized by two core symptoms, anhedonia (i.e., loss of interest or pleasure) and depressed mood (APA, 2013). Additional symptoms include weight/appetite alteration, sleep disturbance, psychomotor perturbation, fatigue or loss of energy, feelings of worthlessness or excessive or inappropriate guilt, cognitive impairment (e.g., in terms of concentration and decision-making), and suicidal ideation (APA, 2013). A formal diagnosis of major depressive disorder implies that five (or more) of the aforementioned symptoms have been present during the same two-week period; at least one of the symptoms has to be either depressed mood or anhedonia (APA, 2013). From an etiological standpoint, depression has been related to the experience of unresolvable stress (Gilbert, 2006; Pizzagalli, 2014; Pryce et al., 2011; Willner, Scheel-Krüger, & Belzung, 2013), including unresolvable stress experienced in the occupational domain (e.g., Niedhammer, Malard, & Chastang, 2015; Schonfeld, 2001; Wang, 2005). Depression has been associated with various dispositional correlates and risk factors, such as dysfunctional attitudes (i.e., pathological perfectionism and need for approval), ruminative responses, and pessimistic attributions (Alloy et al., 2006; Bianchi & Schonfeld, 2016; Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013; Mor & Winquist, 2002). Depression is a major public health problem (Cuijpers et al., 2014; Kessler et al., 2005). In the 2011/2012 New Zealand Health Survey, 14% of New Zealand adults had been diagnosed for a depression at some point in their lives, with a prevalence reaching 18% in New Zealand women (New Zealand Ministry of Health, 2012).

Over the last few years, an increasing number of studies has suggested that burnout is a depressive syndrome and not a distinct condition (Bianchi et al., 2015a; Bianchi, Schonfeld, & Laurent, 2015c). Burnout and depression have been found to overlap in terms of etiology, symptoms, course, cognitive biases, personality-related vulnerabilities, and allostatic load (e.g., Ahola, Hakanen, Perhoniemi, & Mutanen, 2014; Bianchi & Laurent, 2015; Bianchi & Schonfeld, 2016; Bianchi, Schonfeld, & Laurent, 2015b; Bianchi et al., 2016; Hintsa et al., 2016; Rössler, Hengartner, Ajdacic-Gross, & Angst, 2015; Schonfeld & Bianchi, 2016; Wurm et al., 2016). In addition, burnout and depression have both been associated with impaired work performance, absenteeism, and job turnover (Ahola et al., 2008; Bültmann et al., 2006; Lerner & Henke, 2008; Lexis, Jansen, van Amelsvoort, van den Brandt, & Kant, 2009; Swider & Zimmerman, 2010; Toppinen-Tanner, Ojajärvi, Väänaänen, Kalimo, & Jäppinen, 2005). Current research's external validity, however, is limited by the fact that the studies examining burnout-depression overlap have been mainly carried out in Europe and the U.S. Moreover, whether burnout should be considered a depressive syndrome

remains an object of debate (Maslach & Leiter, 2016; Bianchi et al., 2015c; Bianchi et al., 2016). The problem thus requires further inquiry in its own right. In the era of globalization, the characterization of burnout has become a central issue for clinical psychology, occupational medicine, and psychiatry.

The aim of the present study was to examine the overlap of burnout with depression in the New Zealand context. The association of burnout with depression was investigated both directly (e.g., raw and corrected-for-attenuation correlations) and indirectly, through the examination of how burnout and depression were related to dysfunctional attitudes, ruminative responses, and pessimistic attributions—three dispositional factors that have been linked to depression in past research (Alloy et al., 2006; Bianchi & Schonfeld, 2016; Michl et al., 2013; Mor & Winquist, 2002). In order to address the issue of burnout-depression overlap from an extended perspective, we approached the relationship between the two constructs both dimensionally (i.e., as continua) and categorically (i.e., as taxa).

Building on past research conducted in Europe and the U.S., we hypothesized that burnout and depression would show substantial overlap in the present study. More specifically, we expected (a) burnout and depressive symptoms to be strongly correlated and to show similar patterns of association with dysfunctional attitudes, ruminative responses, and pessimistic attributions, (b) individuals with high frequencies of burnout symptoms to be identified as clinically depressed, and (c) burnout and depressive symptoms to cluster together. Some burnout researchers have assumed that burnout and depression cannot be viewed as one single entity because the two constructs share significant, yet limited variance (Schaufeli & Enzmann, 1998; Toker & Biron, 2012). In order to test this assumption, we additionally examined the extent to which the burnout-depression correlation differed in strength from the correlation between the affective-cognitive and somatic symptoms of depression. We reasoned that if the aforementioned assumption is valid, then the burnout-depression correlation should be markedly weaker than the correlation between the affective-cognitive and somatic symptoms of depression, given that the affective-cognitive and somatic symptoms of depression constitute a unified entity. Conversely, if the burnout-depression correlation turned out to be similar in strength to the correlation between the affective-cognitive and somatic symptoms of depression, then there would be no apparent obstacle to viewing burnout and depression as one entity.

Method

Study participants and data collection

Using the public databases of the New Zealand Department of Education (http://www.education.govt.nz/), we contacted school administrators throughout the country. We asked them to transmit a link to an Internet survey to the teachers working in their schools. The Internet survey included measures of burnout, depression, dysfunctional attitudes, ruminative responses, and pessimistic attributions as well as a generic sociodemographic questionnaire. Evidence indicates that online questionnaires are as reliable and valid as traditional, paper-and-pencil questionnaires (Gosling, Vazire, Srivastava, & John, 2004; Jones, Fernyhough, de-Wit, & Meins, 2008). Being a schoolteacher was the only eligibility criterion for taking part in this study. We focused on schoolteachers because (a) burnout-depression overlap has been studied among schoolteachers in Europe and the U.S. and (b) schoolteachers have been thought to be strongly affected by burnout (Maslach et al., 2001).

A total of 184 schoolteachers completed the survey (77% female; mean age: 43; mean length of employment: 15 years). We note that our recruitment procedure did not allow us to estimate our study's response rate. Indeed, we had no information about the number of teachers who actually got access to our survey via school administrators. However, as emphasized by Kristensen (1995), while sample representativeness is a key issue in descriptive studies, its importance in analytical studies such as ours is limited. The crux of the issue for us here was to have a sample comprising teachers who were low, intermediate, and high on the burnout and depression scales that we employed.

The study was conducted in accordance with ethical guidelines of the Declaration of Helsinki (World Medical Association, 2013). The participation in the study was entirely voluntary. A participant could stop completing the survey at any moment for any reason should he/she so choose. Full confidentiality was guaranteed to each participant. The study was approved by the Institutional Review Board of the University of Franche-Comté.

Measures

Burnout was assessed with the 14-item version of the Shirom-Melamed Burnout Measure (SMBM), one of the most widely used measures of burnout (Shirom & Melamed, 2006). The SMBM includes three subscales, emotional exhaustion (Cronbach's alpha = .82; sample item: "I feel I am unable to be sensitive to the needs of coworkers and students."), physical fatigue (Cronbach's alpha = .92; sample item: "I feel physically drained."), and cognitive weariness (Cronbach's alpha = .93; sample item: "My thinking process is slow."). The SMBM grades the frequency of burnout symptoms on a 1-7 scale, from *never* or *almost never* to *always* or *almost always*. The SMBM showed strong internal consistency in the present study (Cronbach's alpha = .95). In contrast to other popular measures of burnout such as the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996), the SMBM has been elaborated within a theory-driven approach to burnout (Shirom & Melamed, 2006) and is in the public domain. By allowing different facets of the depletion of workers' resources to be examined, the SMBM focuses on the putative core of burnout—exhaustion—, the only characteristic that is common to all conceptualizations of the syndrome (Kristensen, Borritz, Villadsen, & Christensen, 2005).

Depression was assessed with the PHQ-9 (Kroenke & Spitzer, 2002; Cronbach's alpha = .84). The PHQ-9 is a dual-purpose instrument. First, it allows the investigator to grade the severity of depressive symptoms, based on a

4-point scale (from 0, for *not at all*, to 3, for *nearly every day*). Second, based on a dedicated algorithm (Kroenke & Spitzer, 2002), it allows the investigator to establish a provisional diagnosis of major depression in reference to the criteria provided in the DSM-5 (APA, 2013). The PHQ-9 algorithm notably takes into account the primacy of anhedonia (“Little interest or pleasure in doing things.”) and depressed mood (“Feeling down, depressed, or hopeless.”) in the characterization of major depression. When administered to a sample of 3,000 primary care patients, the PHQ-9 showed: (a) a sensitivity going from 86% with a cutoff score of 15, to more than 99% with a cutoff score of 10; (b) a specificity going from 91% with a cutoff score of 10, to more than 99% with a cutoff score of 15 (Kroenke & Spitzer, 2002). The PHQ-9 has been increasingly employed in depression research in the last decade.

Dysfunctional attitudes were assessed with the Dysfunctional Attitude Scale Short Form version 1 (DAS-SF1; Beevers, Strong, Meyer, Pilkonis, & Miller, 2007; Cronbach’s alpha = .87). The DAS-SF1 comprises 9 items (e.g., “If I don’t set the highest standards for myself, I am likely to end up a second-rate person.”); its score range is 0-3 (from totally disagree to totally agree). Dysfunctional attitudes were assessed with the Dysfunctional Attitude Scale Short Form version 1 (DAS-SF1; Beevers et al., 2007; Cronbach’s alpha = .87). The DAS-SF1 comprises 9 items (e.g., “If I don’t set the highest standards for myself, I am likely to end up a second-rate person.”); its score range is 0-3 (from *totally disagree to totally agree*).

Ruminative responses were assessed with the Ruminative Responses Scale refined version (RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Cronbach’s alpha = .81). The RRS comprises 10 items (e.g., “Think ‘What am I doing to deserve this?’”). Participants rated each questionnaire item on a scale from 1 (*almost never*) to 4 (*almost always*).

Pessimistic attributions were assessed with the Depressive Attributions Questionnaire (DAQ; Kleim, Gonzalo, & Ehlers, 2011; Cronbach’s alpha = .94). The DAQ comprises 16 items; its score range is 0-4 (from *not at all* to *very strongly*). The DAQ quantifies the internal (e.g., “When bad things happen, I think it is my fault.”), stable (e.g., “When bad things happen to me, I am sure it will happen again.”), and global (e.g., “When something bad happens, I think of the problems this will cause in all areas of my life.”) character of the respondent’s causal attributions regarding negative life events as well as the level of helplessness of the respondent (e.g., “I feel helpless when bad things happen.”).

A generic sociodemographic questionnaire was additionally administered, in which information regarding the participants’ sex, age, and length of employment was collected.

Data Analyses

Data were processed using correlation analysis, two-step cluster analysis—with burnout and depression as classification variables—, analysis of variance (ANOVA), and Tukey’s post-hoc test. By relying on such analyses, we were able to process data both dimensionally and categorically.

In order to examine the extent to which the burnout-depression correlation differed in strength from the correlation between the affective-cognitive and somatic symptoms of depression, we divided the PHQ-9 into two subscales. The affective-cognitive subscale combined items 1, 2, 6, 7, and 9 (Cronbach’s alpha = .76). The somatic subscale combined items 3, 4, 5, and 8 (Cronbach’s alpha = .71).

An aim of our categorical analyses was to specifically investigate the overlap of burnout with depression at the high end of the burnout continuum. Consistent with past research (Bianchi & Schonfeld, 2016; Schonfeld & Bianchi, 2016), we used a mean SMBM score of 5.5/7.0 as a cut-point to isolate participants with high frequencies of burnout symptoms. An SMBM score of 5.5/7.0 corresponds to burnout symptoms experienced on average more than “quite frequently.”

In order to identify the participants who were likely to be clinically depressed, we relied on the diagnostic algorithm of the PHQ-9 (see Kroenke & Spitzer, 2002; see also Bianchi, Schonfeld, & Laurent, 2014). The strong psychometric properties of the PHQ-9 make it a relevant case-finding instrument in depression research (Kroenke & Spitzer, 2002).

Results

The correlations among the main study variables are displayed in Table 1. Burnout and depressive symptoms were strongly correlated (r = .73). When corrected for attenuation, the correlation reached .82. Burnout symptoms correlated .71 with the affective-cognitive and .62 with the somatic subscale of the PHQ-9. Depressive symptoms correlated .45 with the emotional exhaustion, .73 with the physical fatigue, and .68 with the cognitive weariness subscale of the SMBM. Burnout and depressive symptoms were each moderately correlated with dysfunctional attitudes, ruminative responses, and pessimistic attributions.

Of the 184 schoolteachers included in the study, 14 (about 8%) reported burnout symptoms at high frequencies (mean SMBM score ≥ 5.5). Each of these 14 schoolteachers was identified as clinically depressed based on the diagnostic algorithm of the PHQ-9. Of the 14 schoolteachers with high frequencies of burnout symptoms, 12 (about 86%) scored 15 or higher on the PHQ-9 (score range: 13-24), a score at which immediate initiation of pharmacotherapy and/or psychotherapy has been recommended (Kroenke & Spitzer, 2002). Suicidal ideation was reported by five (36%) of the schoolteachers with high frequencies of burnout symptoms.

Three distinct groups of teachers emerged from the cluster analysis (Figure 1), identifiable as “low burnout-depression” (n = 56; 30%), “medium burnout-depression” (n = 82; 45%), and “high burnout-depression” (n = 46; 25%). Burnout and depressive symptoms had similar weights in cluster construction. The silhouette measure of cohesion and separation indicated good cluster quality (values ranged between 0.50 and 1.00). ANOVAs and post-hoc tests (a) confirmed that the three groups differed from each other in terms of burnout (F [2, 181] = 205.44, p < .001, partial η^2 = 0.69) and depressive (F [2,

181] = 304.09, p < .001, partial η^2 = 0.77) symptoms, (b) revealed that the three groups differed from each other in terms of dysfunctional attitudes (F [2, 181] = 17.32, p < .001, partial η^2 = 0.16), ruminative responses (F [2, 181] = 14.16, p < .001, partial η^2 = 0.14), and pessimistic attributions (F [2, 181] = 19.48, p < .001, partial η^2 = 0.18), and (c) showed that the three groups did not differ from each other in terms of sex, age or length of employment. The characteristics of the identified clusters are displayed in Table 2.

Discussion

The aim of the present study was to examine the overlap of burnout with depression in the New Zealand context. In order to do so, we relied on a sample of 184 schoolteachers. Schoolteachers have been assumed to be strongly affected by burnout (Maslach et al., 2001). Consistent with recent studies carried out in Europe and the U.S., we observed substantial overlap of burnout with depression.

First, we found a strong correlation between burnout and depressive symptoms (r = .73; disattenuated correlation: .82). Associations of such magnitudes are likely to be observed between different measures of the same construct. For example, Kung et al. (2013) reported correlations between the PHQ-9 and the Beck Depression Inventory-II of .81 in a sample of 287 outpatients and .67 in a sample of 338 inpatients. Shirom and Melamed (2006) reported correlations between the SMBM and the MBI-General Survey of .74 (n = 198) and .79 (n = 236) in two different groups of workers. In addition, burnout and depressive symptoms were found to be similarly correlated with dysfunctional attitudes, ruminative responses, and pessimistic attributions, three dispositional risk factors for depression (Alloy et al., 2006; Bianchi & Schonfeld, 2016; Michl et al., 2013; Mor & Winquist, 2002).

Second, our results showed that 100% of the schoolteachers exhibiting burnout symptoms at high frequencies met the criteria for a provisional diagnosis

Table 1. Means, standard deviations, and correlations between the main study variables (N = 184).

	1	2	3	4	5	6	7	8	9	10	11	12	13
Burnout symptoms	–												
Depressive symptoms	.73	–											
Dysfunctional attitudes	.39	.49	–										
Ruminative responses	.37	.43	.45	–									
Pessimistic attributions	.47	.48	.63	.65	–								
Sex	.06	-.00	.09	-.04	.02	–							
Age	-.05	-.03	-.12	-.11	-.15	.00	–						
Length of employment	-.01	.00	-.04	-.06	-.13	-.04	.78	–					
BO-EE	.77	.45	.17	.23	.27	.13	.03	-.03	–				
BO-PF	.94	.73	.41	.35	.47	.00	-.07	.01	.59	–			
BO-CW	.93	.68	.40	.36	.47	.08	-.06	-.02	.63	.81	–		
DEP-AFF-COG	.71	.93	.47	.40	.49	.04	-.04	-.05	.48	.70	.66	–	
DEP-SOM	.62	.91	.43	.37	.38	-.05	-.00	.06	.35	.64	.58	.68	–
	3.64	8.84	1.20	2.21	1.19	0.23	43.13	15.28	2.91	4.12	3.51	3.96	4.88
	1.20	5.29	0.57	0.54	0.89	0.42	11.31	10.81	1.29	1.36	1.31	3.05	2.73

Notes—All correlations whose absolute value exceeds .13 are significant at p < .05 or less. Sex was coded 0 for women and 1 for men. M: mean; SD: standard deviation. BO-EE: emotional exhaustion dimension of burnout; BO-PF: physical fatigue dimension of burnout; BO-CW: cognitive weariness dimension of burnout; DEP-AFF-COG: affective-cognitive symptoms of depression; DEP-SOM: somatic symptoms of depression.

Figure 1. Cluster plot.

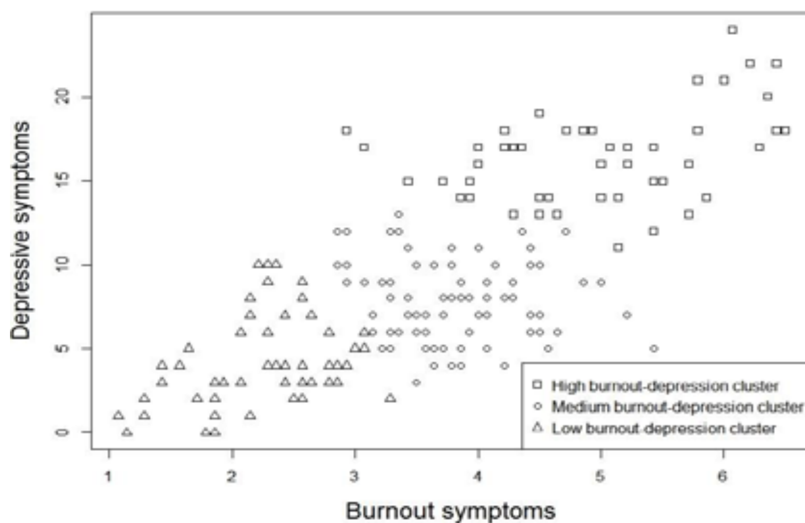

Table 2. Characteristics of the identified clusters.

	Cluster 1		Cluster 2		Cluster 3	
	Low burnout-depression		Medium burnout-depression		High burnout-depression	
	n = 56 (30%)		n = 82 (45%)		n = 46 (25%)	
	M	SD	M	SD	M	SD
Burnout symptoms	2.31	0.54	3.82	0.56	4.96	0.93
Depressive symptoms	4.30	2.59	7.66	2.37	16.48	2.80
Dysfunctional attitudes	0.95	0.44	1.17	0.55	1.56	0.60
Ruminative responses	1.96	0.45	2.23	0.50	2.50	0.59
Pessimistic attributions	0.79	0.59	1.13	0.83	1.78	0.99
Sex	0.18	0.39	0.28	0.45	0.20	0.40
Age	44.64	12.40	41.59	11.26	44.02	9.82
Length of employment	14.64	12.04	15.46	10.87	15.74	9.20

Notes—Sex was coded 0 for women and 1 for men. M: mean; SD: standard deviation.

of major depression. This finding is suggestive of a problematic overlap between burnout and depression—despite the small subsample involved ($n = 14$)—, in line with the results of recent European and U.S. studies. Burnout-depression overlaps of 90% and 86% were found by Bianchi et al. (2014) and Schonfeld and Bianchi (2016), respectively, in studies of French and U.S. schoolteachers. It should be underscored that burnout was assessed with the SMBM in Schonfeld and Bianchi's (2016) study and with the MBI in Bianchi et al.'s (2014) study. This suggests that burnout overlaps with depression regardless of whether it is assessed with the SMBM or the MBI. That 36% of the individuals presenting with high frequencies of burnout symptoms in our sample reported some degree of suicidal ideation underlines the severity of the burnout phenomenon and is of public health concern.

The profiles that emerged from our cluster analysis further suggested that burnout and depressive symptoms were grouped together in the affected individuals. Individuals with low levels of burnout symptoms reported low levels of depressive symptoms; individuals with medium levels of burnout symptoms reported medium levels of depressive symptoms; lastly, individuals with the highest levels of burnout symptoms were also the ones reporting the highest levels of depressive symptoms. Our results are consistent with the findings from two longitudinal studies conducted in Finland and France (Ahola et al., 2014; Bianchi et al., 2015b), in which burnout and depressive symptoms were found to increase or decrease in parallel over time, rendering the exclusion of burnout from the spectrum of depression unwarranted.

It has been suggested that burnout and depression cannot be viewed as one entity because of their limited common variance (Schaufeli & Enzmann, 1998; Toker & Biron, 2012). In the present study, we found that the correlation between burnout (as operationalized by the SMBM global score) and depression (as operationalized by the PHQ-9 global score)—$r = .73$—was similar in strength to the correlation between the affective-cognitive and somatic symptoms of depression—$r = .68$. Given that the affective-cognitive and somatic symptoms of depression are considered to form a unified entity with a correlation of .68, there is no obstacle to viewing burnout and depression as one entity with a correlation of .73.

The idea that burnout is distinct from depression still prevails among some researchers (e.g., Maslach & Leiter, 2016). It is worth noting, however, that more than 40 years after the introduction of the burnout construct in the research literature (see Maslach et al., 2001), the *rationale* underlying the burnout-depression distinction remains unclear. For instance, burnout has been hypothesized to be a product of unresolvable (job) stress. It turns out that unresolvable stress (either job-related or not) is known to play a key causal role in depression (Gilbert, 2006; Pryce et al., 2011; Willner et al., 2013). As an illustration, Pizzagalli (2014) noted: "…although severe stressors have been generally linked to increased risk of depression, chronic stressors and events characterized by perceived (a) lack of control, (b) inability to escape or resolve the aversive situation (e.g., entrapment), or (c) loss of status (e.g., humiliation) appear to be particularly depressogenic…" (p. 406). In a similar vein, according to Sapolsky (2004), "it is impossible to understand either the biology or psychology of major depressions without recognizing the critical role played in the disease by stress" (p. 271). In terms of etiology, it is hence very difficult to understand where the difference between burnout and depression is supposed to lie. It has been frequently suggested that burnout is singularized by its job-related character. However, this argument has been shown to be inapplicable given that (a) depression can be job-related as well and (b) the job-related character of a given condition is not nosologically discriminant in itself—a job-related depression remains a depression (Bianchi et al., 2015a, 2015c). In terms of the clinical picture, the distinctiveness of burnout is unfortunately not clearer. Burnout has actually been associated with *all* the symptoms of depression (Bianchi et al., 2015a; Schaufeli & Enzmann, 1998). As suggested by the present study, it is virtually impossible to find an individual with high frequencies of burnout symptoms who does not also present with the characteristics of clinical depression. All in all, time may have come to define burnout as a depressive syndrome.

Arguably the "social focus" of burnout research (Maslach et al., 2001) contributed to directing the attention of investigators to the supra-individual factors influencing occupational health (e.g., organizational/managerial factors). *Switching from burnout to depression does not imply any neglect of such factors*. As previously emphasized, depressive syndromes have long been related to the experience of unresolvable (occupational) stress and understood within the framework of the interaction between the individual and his/her social environment. Work-related depression has been widely studied in recent years, resulting in strong recommendations regarding the enhancement of employees' working conditions (Adler et al., 2015; Blackmore et al., 2007; Melchior et al., 2007; Schwenk, 2015; Szeto & Dobson, 2013). In research settings, the relationship between depression and work can be established by examining the variance in depression respectively explained by occupational and non-occupational factors. This relationship can also be examined by questioning the extent to which employees *attribute* their depressive symptoms to their job (see Rydmark et al., 2006). In clinical settings, the investigation of the work-depression relationship is in fact integral part of the anamnesis conducted by the practitioner.

The study has at least four limitations. First, we assessed burnout using the SMBM, a measure of burnout that reflects an "exhaustion-only" view of burnout. However, other measures of burnout are available (e.g., the MBI) and should be tested in the future. Second, we identified likely cases of major depression using the PHQ-9, a self-report measure. Although the PHQ-9 has been specifically designed from a diagnostic perspective and shown to be well-suited for case-finding (Kroenke & Spitzer, 2002; Martin-Subero et al., in press), the method of reference for diagnosing depression is the clinical interview (APA, 2013). Third, our study was cross-sectional. This design only allowed us to provide a "snapshot" of the burnout-depression association; a diachronic view of how the two entities behaved toward one another was out of reach. Fourth, our

procedure of recruitment did not permit us to assess the representativeness of our sample with regard to the New Zealand schoolteacher population. This being said, we note with Kristensen (1995) that the issue of sample representativeness is of minor importance in analytical studies such as ours (as opposed to descriptive studies). What matters most in analytical studies is the availability of the variables of interest at various levels among the participants. This criterion was met in our study: the median scores were 7.50 for the PHQ-9, with observed scores ranging from 0 to 24, and 3.64 for the SMBM, with observed scores ranging from 1.07 to 6.50.

Given the success of the burnout label among both the scientific community and the public (Bianchi et al., 2016), clarifying the nosological status of the burnout syndrome has become an important topic in clinical psychology, occupational medicine, and psychiatry. To our knowledge, the present study is the first to address the issue of the burnout-depression association in the New Zealand context. Consistent with past research conducted in Europe and the U.S., we found evidence for an overlap of burnout with depression, both dimensionally and categorically. The fact that 100% of the schoolteachers at the high end of the burnout continuum reported clinical levels of depressive symptoms is particularly noteworthy. Overall, our findings support the view that burnout is part of the spectrum of depression. Thus, our results do not plead for an elevation of burnout to the status of (distinct) nosological entity. We recommend that burnout be parsimoniously defined as a depressive syndrome.

Conflicts of interest

The authors state that there are no conflicts of interest.

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A pilot study of functional family therapy in New Zealand

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Conduct problems affect between five and ten percent of children in New Zealand and are associated with a wide-range of adverse outcomes in later life. There is a clear need for the verification of evidence-based interventions for the New Zealand population including Māori. A pilot study of Functional Family Therapy (FFT) found significant ($p < 0.01$) pre to follow-up reductions in two of five conduct problem measures and medium effect sizes for four of five measures. Outcomes for Māori and non-Māori were similar. Variations in Therapist treatment fidelity and competence did not significantly influence outcomes. Parent satisfaction with FFT was high and Māori parents' satisfaction with cultural aspects of FFT very high. These findings provide initial evidence that FFT is effective in the New Zealand context.

Keywords: Functional family therapy, conduct problems, treatment effectiveness, transportability, outcomes for Māori

Conduct problems including Conduct Disorder and Oppositional Defiant Disorder affect approximately 5% to 10% of New Zealand young people, with males and Māori being at greatest risk. There is substantial New Zealand and international research which shows that young people with these problems are at increased risk for a wide range of adverse outcomes in adolescence and young adulthood including crime, substance abuse, mental health problems, reduced life expectancy, domestic violence, poor educational achievement, unemployment, welfare dependency and conflict with parents and teachers (Fergusson, Horwood, & Ridder, 2005; Kratzer & Hodgins, 1997; Offord & Bennett, 1994). Interventions for conduct problems have been well researched in the international literature and a number of programmes have been identified as effective in authoritative reviews (Eyberg, Nelson, & Boggs, 2008). Although some research has been conducted with respect to interventions for younger children (Fergusson, Horwood & Stanley 2013, Fergusson, Horwood & Stanley 2009) there has been very little research published in New Zealand with respect to interventions for older children and adolescents with conduct problems; a study of Multi-systemic Therapy, Curtis, Ronan, Heiblum and Crellin (2009), appears to be the only example. Of concern in the New Zealand context is the high rate of conduct problems identified amongst Māori youth with rates of conduct disorder ranging from 1.9 to 4.5 times that of the non-Māori population as ascertained in two large longitudinal studies (Fergusson, Poulton, Horwood, Milne and Swain-Campbell, 2003). As one investigation of Māori youth offending notes "On average Māori youth are three times more likely to be apprehended, prosecuted and convicted than non-Māori youth" (Owen, 2001, cited in Curtis, Ronan, Heiblum, Reid & Harris, 2002). Although comprising 15% of the population in the 2013 census as of 2016 Māori comprise 51% of the prison population (Statistics New Zealand, 2016). These proportions are mirrored by the high rate of involvement of Māori youth and families in programmes for the treatment of conduct problems; within Youth Horizons, New Zealand's largest provider of evidence based interventions for conduct problems, 45% of children participating in treatment were Māori in 2015 (Youth Horizons, 2015).

A number of interventions have been systematically evaluated for the treatment of child and adolescent conduct problems in recent decades. Family interventions have shown particular promise and one such intervention is Functional Family Therapy (FFT). FFT is the oldest and one of the most widely disseminated of the evidence based interventions for youth conduct problems. Emerging in the late 1960's FFT is now implemented in 220 sites across five countries and claims to work with more families per year than any other evidence based intervention (fftllc.com). FFT is also recognised as cost effective with better than average cost-benefit ratios when compared to other juvenile justice interventions (Washington state institute for public policy, 2016).

FFT marries family systems, behavioural and cognitive-behavioural approaches to intervention in a synthesis based on clinical experience and research-based theory. From Family Systems Theory is derived the concept that the unit of treatment is the family (not just the individual youth) and the family is a system characterised by dynamic relationships between individuals. From the behavioural tradition in psychology comes an emphasis on change in overt behaviour and its immediate causes within the family. FFT also uses cognitive-behavioural techniques such as reframing and emotion-management strategies.

FFT is a short-term intervention of 8-12 sessions over a period of 2-4 months. Treatment is progressed in three phases. The initial phase is termed "engagement and motivation" and is designed to identify and modify intra-family risk factors (e.g. hopelessness, blaming) and strengthen protective factors (e.g. family cohesion) whilst enhancing intervention credibility and family preparedness to change. The second phase is termed "behaviour change" and is focussed on developing individualised strategies for altering cognitive, behavioural and emotional aspects of family functioning (e.g. attributions, parenting skills, managing anger). The final phase is termed "generalisation" and is concerned with maintaining the changes in behaviour achieved in the previous phase, relapse prevention and the use of community resources to facilitate change in contexts

beyond the family such as school and sporting groups.

FFT has been appraised favourably in a number of reviews (e.g. Baldwin, Christian, Berkeljon, Shadish & Bean, 2012; Carr, 2014; Henggeler & Sheidow, 2012) however its performance has been superior in the context of high-quality efficacy trials than in community based effectiveness studies. An initial series of University-based studies with juvenile offenders established the efficacy of FFT under ideal conditions with reductions in recidivism ranging from 35% to 84% relative to an alternative treatment (Alexander & Parsons, 1973; Barton, Alexander, Waldron, Turner & Warburton, 1985; Gordon, Arbuthnot, Gustafson & McGreen, 1988; Klein, Alexander & Parsons, 1977). Maintenance of treatment effects was demonstrated with follow-up assessments of up to five years post-treatment (Gordon, Graves & Arbuthnot, 1995). A single efficacy study, Waldron, Slesnick, Brody, Turner & Peterson (2001) failed to find a significant reduction in marijuana use and externalising behaviour for FFT relative to Cognitive Behaviour Therapy and Group Therapy control groups.

Community-based effectiveness trials have obtained variable outcomes. Of six published effectiveness studies conducted in the United States, four report favourable outcomes: Lantz (1982), as described in Elliot, Alexander, Pugh, Parsons and Sexton (2000), obtained significant reductions in recidivism relative to an alternative treatment. Rohde, Waldron, Turner, Brody and Jorgensen (2014) found FFT followed or preceded by cognitive behaviour therapy (CBT) to result in greater reductions in substance use than a combined FFT/CBT intervention. Sleznick and Prestopnik (2009) and White, Frick, Lawing and Bauer (2013) found significant pre-post reductions in drug and alcohol use and conduct problems respectively. However two studies failed to obtain statistically significant results; Friedman (1989) found that FFT did not reduce drug use or externalising behaviour relative to a parent group intervention and Sexton & Turner (2010) in a large randomised controlled trial (n=917) found identical recidivism rates for FFT and probation services as usual 12 months post-treatment. In a post-hoc analysis the authors of the latter study found that recidivism was related to treatment fidelity and therapists high in adherence to the FFT treatment model did indeed achieve significant reductions in felony and violent crimes relative to control.

Two transportability studies conducted in community settings in Ireland have demonstrated significant reductions in adolescent conduct problems; Graham, Carr, Rooney, Sexton and Sattersfield (2014) demonstrated improvements relative to baseline and in a randomised controlled trial Hartnett, Carr & Sexton (2015) found improvements in conduct problems and family adjustment relative to a wait-list control . Graham et al. (2014) also found that treatment outcome was mediated by treatment fidelity with those therapists demonstrating better fidelity obtaining better outcomes. In addition two studies conducted in Sweden, although not published in English, are reported in secondary sources to have found lower rates of recidivism in FFT as compared to services as usual (Hansson, Johansson, Drott-Englen & Benderix 2004 as reported in Robbins 2016; Hansson 1998, as reported in Elliott et al., 2000).

Thus whilst FFT is an intervention which can achieve strong outcomes when well implemented, a less than optimum - or merely different - implementation reflective of local conditions, client populations or workforce may result in less than optimum outcomes. In this context it has been argued that "empirically supported" interventions validated with primarily European participants cannot be said to be generalizable to diverse cultural or ethnic groups unless specifically tested with these groups (Cardemil, 2010; La Roche & Christopher, 2008). As the majority of families participating in FFT studies to date have been Caucasian (cf. Henggeler & Sheidow, 2012), and given the risks posed by untreated or ineffectively treated conduct problems for youth in general and Māori in particular, FFT's effectiveness and acceptability in New Zealand requires verification.

This paper describes a pilot study of FFT as delivered by a community organisation in Auckland, New Zealand. The study was intended to test five hypotheses: Firstly, that FFT as delivered in a community setting in New Zealand will obtain significant reductions in conduct problems comparable to those achieved previously in effectiveness and transportability studies. Secondly, conduct problem outcomes for Māori will be similar in magnitude to those for non-Māori. Thirdly, parents will express a high degree of satisfaction with the FFT intervention. Fourthly, Maori parents will express a high degree of satisfaction with culturally relevant aspects of the FFT intervention. Fifthly, participants treated with a higher level of fidelity and competence will experience better outcomes.

Method

Design

The study was conducted at Youth Horizons, a community based non-government organisation in Auckand, New Zealand. FFT had been introduced to New Zealand by Youth Horizons in 2009. Whilst the intervention was not specifically adapted for Māori it was delivered in a culturally informed manner which respected common protocols involved in working therapeutically with Māori in their own home. The design was a single-group outcome study with assessment points at the commencement of treatment (pre), six-months later (post) and twelve months post treatment commencement (follow-up). All participants who received at least one treatment session were deemed to have started FFT and were to be assessed at these times whether or not they completed treatment.

Participants

Participants in the study were 59 young persons and families referred to Youth Horizons FFT by child welfare services (Child Youth & Family) between January 2011 and October 2012. Consent for study participation was sought from all FFT referrals during this period except where the family had been assigned to an FFT therapist with less than 3 months experience, or the family was unable to be contacted by the researcher prior to treatment commencement. Nineteen percent of families contacted declined to participate in the research.

Inclusion criteria were (a) child conduct problems as the primary referral

concern, (b) the child must be aged between 9 and 16 years[1] , and (c) the young person must be living in the family home with at least one parent or permanent caregiver. Exclusion criteria were (a) young persons with an intellectual disability, psychosis or pervasive developmental disorder and (b) young persons whose primary referral issue was sex-offending or substance use. Exclusions were made on the basis of information accompanying the referral document. Diagnoses of Conduct Disorder or Oppositional Defiant Disorder were not required for FFT or study inclusion. The age range of the youth was 9 to 16 years with a mean of 13 years 7 months. Boys outnumbered girls two to one (70% vs. 30% of the sample). Māori were the largest ethnic group (45%) followed by New Zealand European (33%), Cook Island Māori (10%), other European (7%), Tongan (3 %), Niuean (2%) and Fijian (2%).

The families participating in this study evidenced a number of indices of social and economic disadvantage. For instance, more than three-quarters (78%) of the primary caregivers had at most a secondary school qualification. The most common source of income was a social welfare benefit (62%). A majority of families were solo-parent families (69%). The median weekly household income of participants ($500) was approximately a third of the median household income in New Zealand at that time. Significant numbers of parents and caregivers reported problem issues amongst members of their extended family other than the child referred to FFT; problems with the Police (21% of families), drugs (14%), depression (33%), anxiety (40%) and suicide attempt (10%). Levels of physical punishment of the child were moderate (20% of parents) and 19% percent of parents with a current partner reported at least one instance of physical assault upon themselves in the previous six-months. Parents reported contact with multiple government agencies with 46% having contact with Child & Adolescent Mental Health Services and 23% having contact with Special Education services re child learning or behaviour within the last five years. Over a third of children (39%) were not attending school at the time the study commenced. These findings are consistent with the literature relating social and economic factors to the development of conduct problems (Deater-Deckard, Dodge, Bates & Pettit, 1998: Fergusson et al., 2005).

1 The official minimum age for FFT is 10 but a single 9 year-old was accepted by the FFT progamme during the period of the study.

Ethics

Ethics approval was sought and granted by the Northern X Regional Ethics Committee, reference number NTX/10/06/052. Informed consent was required from both parents/caregivers and young persons.

Therapists

Ten therapists were involved in this study. Each had received the FFT introductory training as delivered by instructors from FFT LLC who travelled from the United States to deliver the training. All therapists received ongoing supervision from the programme supervisor, who was in turn supervised by an experienced FFT clinician via skype and telephone from the United States. The therapists had from less than one year to three years experience of FFT. Six therapists were female, four male. Prior professional roles included Psychologist (5), Psychotherapist (2), intern-psychologist (1), Multisystemic therapy therapist (1) and youth personal advisor (1). All therapists were university graduates. Two therapists were of Māori descent.

Measures

Parent and Teacher rated Conduct Problems

Parallel parent and teacher measures of conduct problems were constructed based on the fifteen and eight DSM-IV criteria for Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD) respectively. DSM-IV Conduct Disorder involves behaviours relating to physical aggression (e.g. initiates physical fights), deceitfulness and theft (e.g. has stolen while confronting a victim), property damage (e.g. has deliberately destroyed others' property) and violation of rules (e.g. is often truant). DSM-IV Oppositional Defiant Disorder involves less severe problem behaviours relating to negativity (e.g. often argues with others), hostility (e.g. is often touchy and easily annoyed by others) and defiance (e.g. often actively defies or refuses to comply with adults' requests). The 23 items, each rated on a 1 to 3 point scale, were summed to create a total score representing the overall level of conduct problems. A measure with identical item content but using a four point scale, The Rating Scale for Disruptive Behaviour Disorders (Silva et al., 2005), has shown good to excellent internal consistencies as measured by coefficient alphas of between 0.78 to 0.96 across informants (teachers, parents) and constructs (Conduct Disorder, Oppositional Defiant Disorder). Alpha calculated for the present data (all 23 items) was 0.88, suggesting a high level of coherence within the combined CD/ODD measure.

Parent reported Young Person alcohol and substance use

An instrument was created whereby parents reported the young person's frequency of use, to the best of their knowledge, over the previous two months, of seven categories of substance ranging from alcohol and cannabis to amphetamines and opiates. For each category the parent reported the frequency of use as either daily, weekly, more than once a month, less than once a month, or not at all. Scores were pro-rated to a days-per-year equivalent within categories and aggregated across categories to give a total score.

Parent and Young Person reported delinquent behaviour

Parent and young person versions of an instrument based on the Self Report Delinquency Inventory (SRD: Elliott & Huizinga, 1989), were used to assess young person delinquent behaviours over the previous six months. Domains surveyed included property offences (burglary, theft, fire setting, property damage), violent offences (fighting, using a weapon, assault), use of alcohol and drugs (e.g. drinking alcohol during school hours) and other delinquent behaviours (struggling to get away from a policemen, running away from home, truancy). A count measure was derived reflecting the total number of delinquent behaviours engaged in. The parent report was identical and assessed young person delinquent behaviours to the extent that the parent was aware of them. Test-retest

reliabilities for self-report delinquency measures are reported to be in the good to excellent range (0.84-0.97) for most groups and scoring procedures. Validity is reported to be well established in some contexts (ability to discriminate between groups, correlation between official and self-reported offenses) but not others (i.e. low correlation with arrests) (Huizinga & Elliott, 1986).

Family background

A selection of key indices of family functioning derived from the literature on the development of conduct problems are reported. Each is a percentage or count variable indicative of social and economic disadvantage.

The Global Therapist Rating scale

Therapist competence and model-adherence was assessed every three months using the Global Therapist Rating Scale (GTRS: Sexton & Alexander, 2004). This measure included the quarterly average of the programme supervisor's weekly ratings of therapist dissemination fidelity and clinical fidelity as well as a checklist of 38 "general clinical skills". Dissemination fidelity related to tangible tasks such as attendance at meetings and completion of paperwork. Clinical fidelity consisted of "clinical adherence" to the FFT model and "clinical competence" in the delivery of this model, where a minimum level of adherence was regarded as a necessary condition for competence. Dissemination fidelity was rated on a seven point scale from "none" to "always". Clinical fidelity was the sum of two four point scales; "clinical adherence" rated from "none" to "extensive/consistent" and "clinical competence" rated from "none" to "high". The 38 skills were each specific to one of five phases or aspects of FFT treatment; engagement, behaviour change, generalisation, general FFT skills and relationship skills. For instance an engagement and motivation skill was *Does the therapist refrain from taking sides, blaming or judging family members ?* A behaviour change skill was *Does behaviour change begin only after successful progress towards engagement and motivation goals ?* Each skill was rated on a five point scale from "never" to "always". The two fidelity scores and the average of the 36 competence scores were taken as representing the therapists' fidelity and competence for those cases treated that quarter. Where a particular case spanned two quarters, the means of the three ratings were used.

Parent Satisfaction Survey

An eleven item survey was created based on the Client Satisfaction Questionnaire (CSQ-8: Larsen, Attkisson, Hargreaves & Nguyen, 1979) with item content modified to reflect considerations specific to FFT. An additional three items were created for Māori parents to assess the cultural acceptability of the FFT treatment and FFT therapists.

Results

An intention to treat approach was taken and all participants who commenced treatment were assessed whether or not they completed treatment, with treatment commencement defined as at least one FFT treatment session. There was a significant loss of post and follow-up data due largely to families dropping out of treatment and becoming uncontactable or refusing further assessments; 59 pre, 44 post and 47 follow-up parent interviews were obtained. Numbers for the teacher-report measure were limited by the high proportion of young persons not attending school. Drop-out was defined as a) a unilateral decision by the parents to discontinue treatment, as reported by the therapist and b), completion of two or less sessions. Using this criterion 8 or 13% of participants dropped out of treatment. The mean number of FFT sessions attended was 10.4 with a range of 1 to 31.

Conduct Problems

Multiple one-way repeated measures analysis of variance were employed. A test for linear trend representing the effect of time, or progressive improvement, was conducted with planned comparisons of pairwise differences between means. Alpha was set at p=0.05 overall or p = 0.01 per measure on the basis of a Bonferroni adjustment for five tests. Owing to a small number of extreme values the delinquent activities and child alcohol and drug measures were truncated at a maximum value of 100. In order to facilitate comparison all measures were standardised with a mean of 100 and a standard deviation of 10. Effect sizes were calculated as Cohen's d with pairwise deletion of missing values. Values of d are described as follows; d ≥ 0.20 = small, d ≥ 0.50 = medium and d ≥ 0.80 = large. STATA versions 12 and 13 and G*Power 3.1.5 were used for all statistical calculations.

Table 1 presents effect sizes and tests of statistical significance for five anti-social behaviour outcomes. The table shows the following:

i. Parent reported Conduct Disorder and Oppositional Defiant Disorder behaviours (CD/ODD) reduced from pre-test to follow-up to a degree consistent with a medium to large effect size (d = 0.78) and a test for linear trend indicating progressive improvement across assessments was statistically significant (p<0.0001). Pairwise comparisons indicated that mean scores at both post-test and follow-up were significantly lower than scores at pre-test (p<0.01) indicating a significant reduction in CD and ODD behaviours at post-test and follow-up relative to pre-test.

ii. Teacher reported Conduct Disorder and Oppositional Defiant Disorder behaviours reduced to a degree consistent with a medium effect size at follow-up (d = 0.71) and a test for linear trend was not significant (p0.08). No pairwise comparisons were significant. Achieved power for the linear trend was calculated as 0.84, an adequate value, indicating that the nonsignificant results were not due to low statistical power.

iii. Parent reported delinquent behaviours improved from pre-test to follow-up to a degree consistent with a small to medium effect size (d=0.49) and the test for linear trend was not significant (p<0.03). The contrast between pre-test and follow-up was significant (p<0.01) indicating a significant reduction in parent-reported delinquent behaviours at follow-up relative to pre-test. Achieved power for the linear trend was calculated as 0.81, an adequate value, indicating that the nonsignificant results were not due to low statistical power.

iv. Young person reported delinquent behaviour improved to a degree consistent with a medium effect size at follow-up (d = 0.68) and the test for trend was significant (p<0.0013). Contrasts between pre-test and both post-test and follow-up were significant (both p<0.002) indicating that the level

of self-reported delinquent behaviours was significantly lower at post-test and follow-up compared to pre-test.

v. Young person alcohol and drug use, as reported by the parent, did not change; the effect size was close to nil (d= 0.08) and a test for linear trend was nonsignificant (p=0.75). No contrasts were significant (p>0.45). Achieved power for the linear trend was calculated as 0.09, very low, thus the test possessed insufficient statistical power to detect the obtained change. However the low power was likely to be due to the small effect size hence the conclusion remains the same; young persons' level of alcohol and substance use did not change or improve over the course of treatment and follow-up.

vi. To test the overall significance of the findings in Table 1 we fitted a Multivariate Analysis of Variance (MANOVA) model to the data. In this model missing data were estimated using a multiple imputation approach (Rubin, 1987). Teacher CD/ODD data was omitted as the available data was too incomplete to warrant imputation. The analysis found a general trend for outcome measures to improve over time across the three measurement points ($F[8,50] = 8.48, p < .0001$, Wilk's $\lambda = 0.42$, partial $\eta 2 = 0.58$, power to detect the effect 1.0). To ensure that the results were not unduly influenced by the imputation and truncation procedures the MANOVA was repeated with a) no imputed data, b) non-truncated data and both a) and b); all analyses were statistically significant (p <0.01).

Table 1
Young person conduct problems: Tests for trend and pairwise contrasts with Cohen's d effect size for the pre to follow-up interval

Measure	n	Mean (sd) pre	Mean (sd) post	Mean (sd) follow-up	(df) F linear trend	p	Pre - Follow-up d (95% CI)	Contrasts p<0.01
CD/ODD (parent)	41/46	104.19 (9.62)	98.45 (9.79)	97.36 (9.43)	(2, 80) 13.61	0.0001*	0.78 (0.36 to 1.2)	pre vs. post; pre vs. fup
CD/ODD (teacher)	20/22	103.28 (9.91)	98.95 (11.05)	96.76 (8.51)	(2, 38) 2.75	0.08	0.71 (0.10 to 1.32)	Nil
SRD (parent)	41/46	102.56 (11.71)	99.91 (10.29)	97.52 (7.83)	(2, 80) 3.75	0.028	0.49 (0.07 to 0.90)	pre vs. fup
SRD (young person)	26/32	104.72 (12.03)	97.93 (7.96)	97.34 (8.04)	(2, 50) 7.62	0.0013*	0.68 (0.17 to 1.18)	pre vs. post; pre vs. fup
Alcohol/ drug use	41/46	100.54 (10.28)	99.42 (9.81)	100.04 (10.04)	(2, 80) 0.29	0.75	0.08 (-0.33 to 0.48)	Nil

Note. N is for linear trend/Cohen's d
* p < .01

Outcomes for Māori vs. non-Māori

Multiple t-tests were used to test for differences in mean pre to follow-up change score (i.e. pre-test score – follow-up score) for each measure. Greater improvements for either group would be evidenced by a) larger effect sizes and b) larger change scores. Table 2 presents effect sizes and tests for identity of change scores for Māori and non-Māori for the previous measures.

Table 2.
Effect size for Māori and Non-Māori pre to follow-up and t-tests for differences in change scores

Measure	n	d (Māori)	95% CI	n	d (Non-Māori)	95% CI	t	p
CD/ODD[1] (parent)	21	0.68	(0.05 to 1.29)	25	0.90	(0.32 to 1.48)	0.02	0.98
CD/ODD (teacher)	10	0.45	(-0.44 to 1.33)	12	0.93	(0.08 to 1.77)	1.08	0.29
SRD (parent)	21	0.19	(-0.42 to 0.80)	25	0.71	(0.13 to 1.28)	1.56	0.13
SRD (young person)	13	1.05	(0.21 to 1.86)	19	0.46	(-0.19 to 1.10)	1.18	0.25
Alcohol/drug use	21	0.24	(-0.36 to 0.85)	25	-0.04	(-0.59 to 0.51)	1.11	0.27

This table shows the following:

i. There were no significant differences between mean change scores for Māori vs. non-Māori for any measure (t 0.02 – 1.56, p 0.98 – 0.13).

ii. For all Māori/non-Māori pairs of effect sizes, confidence intervals for each measure overlapped considerably indicating a high degree of similarity between Māori and non-Māori effect estimates.

iii. At follow-up non-Māori achieved larger effects than Māori in three of five measures and Māori larger effects than non-Māori in the remaining two measures. The margins between effect sizes were variable with large differences between estimates favouring both Māori and non-Māori. When a weighted average was calculated (weighted by n per measure), mean effects were similar with a slight advantage to non-Māori (d =0.48 vs. 0.56). The magnitude of the difference was minimal (0.08) and equivalent to less than a small effect (less than 0.20).

iv. A 2 x 3, group x time, MANOVA was fitted to provide a test for differential outcomes over time across the all four conduct problem measures combined (teacher CD/ODD omitted, missing data imputed). The test for interaction was not significant indicating that there was no detectable difference between the changes in conduct problems over time for Māori vs. non-Māori; $F(8,50) = 0.53$, $p = 0.83$, Wilk's $\lambda = 0.92$, partial $\eta 2 = 0.08$, power to detect the effect 0.48. Whilst power was low (0.80 is the conventional minimum adequate power), Wilk's λ and partial $\eta 2$ indicated that only 8% of the variance in the measures was explained by progressive differences between Māori and non-Māori conduct

problems over time; this is consistent with the t-tests and effect sizes in Table 2 and suggests that differences in outcomes between Māori and non-Māori were minimal.

Treatment fidelity

Three therapist scores were assigned to each young person; fidelity, dissemination fidelity and average competence score. Ten participants who had completed less than four sessions were excluded in order to limit the analysis to those who had received more than minimal treatment. Participants were separated into high and low fidelity and competence groups on the basis of a median-split; three 2 x 3 group by time MANOVA's were conducted using a multiple imputation approach for missing data and excluding the teacher CD/ODD measure as before. The results were as follows:

i. All three MANOVAS failed to reach significance ($p>0.05$) indicating that young persons treated with better than average fidelity or competence did not experience better outcomes in terms of reduced conduct problems than those young persons treated with lower levels of fidelity or competence; (fidelity [$F(8,40) = 0.32$, $p = 0.95$, Wilk's $\lambda = 0.94$, partial $\eta 2 = 0.06$, power to detect the effect 0.31], dissemination fidelity [$F(8,40) = 0.55$, $p = 0.81$, Wilk's $\lambda = 0.90$, partial $\eta 2 = 0.10$, power to detect the effect 0.51] and competence [$F(8,40) = 0.79$, $p = 0.62$, Wilk's $\lambda = 0.86$, partial $\eta 2 = 0.14$, power to detect the effect 0.68]). Whilst achieved power was low (<0.69), values of Wilk's λ and partial $\eta 2$ indicated that only between 6% and 14% of the variance in outcomes was explained by the interaction between time and group, which is consistent with there being little if any difference in outcomes between the high and low fidelity/competence groups.

ii. Examination of the mean ratings for the low fidelity/competence groups suggests that the therapists' performance was poorer but not necessarily poor. For instance, the average score for the low clinical fidelity group was equivalent to a rating of "regular" or "frequent" adherence and "low" to "moderate" competence. The average for the low dissemination fidelity group was equivalent to a rating of "many" to "most" of dissemination adherence procedures being followed. The average for the low competence group was equivalent to a rating of "sometimes" to "frequently" achieving each skill. Hence the failure to find a significant effect due to fidelity or competence may be due to the "low" groups manifesting an adequate level of fidelity and competency and achieving adequate client outcomes.

Parent satisfaction

Table 3 presents the percentage of parents responding to items in a parent satisfaction survey.

i. Parental satisfaction with FFT was generally high. Therapist characteristics were highly rated with 80% or more of parents reporting being "very much" satisfied with the therapist's timeliness, appointment keeping and support. Almost 80% of parents were "very much" satisfied with the competence of their therapist. Approximately three quarters of parents were "very much" satisfied with the overall value of FFT for their family and two-thirds felt that FFT was the right sort of therapy for their family. In contrast, only approximately half were "very much" satisfied with FFT's impact upon their son or daughter's behaviour and ability to get on with the rest of the family. The presentation of FFT to families appeared adequate with two-thirds or more of parents being "very much" satisfied with the way FFT was introduced or explained to them. The mean level of satisfaction reported by Māori parents was compared to that of non-Māori; whilst the latter reported a slightly higher level of satisfaction overall a statistical test of this difference was not significant ($p>0.66$).

Table 4 presents the responses of Māori parents to three items specific to the cultural acceptability of FFT for Māori.

Māori parents were very satisfied with the cultural knowledge and respect shown by their therapist with 80-90% reporting that they were "very much" satisfied. A similar proportion of parents felt that FFT was an appropriate intervention for Māori whānau.

Discussion

This study sought to evaluate the effectiveness and acceptability of FFT for Māori and non-Māori in New Zealand.

Table 3
Parent satisfaction with aspects of FFT: Percentage of parents' responses

How satisfied were you with...	Not at all	A little	Moderately	Very much
The way FFT was explained to you before you started FFT	5%	12%	21%	63%
The way FFT was introduced to you by your therapist during the first few FFT sessions	7%	2%	28%	63%
The convenience of the session times	5%	5%	12%	73%
The timeliness of the therapist (turning up on time)	2%	2%	9%	86%
The therapist's appointment keeping (not cancelling or missing sessions)	2%	2%	7%	88%
The overall value of FFT for your family	12%	5%	9%	74%
The impact of FFT on your son/daughter's behaviour	16%	14%	14%	56%
The impact of FFT on your son/daughter's ability to get on with the rest of the family	16%	14%	23%	46%
The competence of your therapist	5%	2%	14%	79%
The level of support given by your therapist	7%	0%	12%	81%
The extent to which you got the type of therapy that you wanted	9%	9%	14%	67%

Note. Some rows may not sum to 100 due to rounding error

Table 4
Parents of Māori descent: Satisfaction with the cultural sensitivity of FFT

How satisfied were you with...	Not at all	A little	Moderately	Very much
The respect shown by your therapist for your culture or tikanga	10%	0%	0%	90%
The level of knowledge shown by your therapist of your culture or tikanga	10%	0%	10%	80%
The suitability of FFT as a therapy for Māori Whanau	10%	0%	10%	80%

Note. Sample size = 20

Five hypotheses were tested relating to reductions in conduct problems, outcomes for Māori, parent satisfaction/cultural acceptability for Māori and the influence of therapist competence and fidelity. The first two hypotheses were supported to a moderate degree and the second two strongly supported. The last hypothesis was not supported. The hypotheses are discussed in turn.

In terms of the first hypothesis, two of five conduct problem measures showed statistically significant reductions at follow-up and medium effect sizes ($p<0.01$, d = 0.68, 0.78). Two measures showed medium effect sizes but were not significant ($p>0.028$, d=0.49, 0.71). A fifth measure, alcohol and drug use, was not significant and showed minimal change equivalent to a small effect ($p>0.75$, d=0.08). A multivariate analysis which combined all five measures was statistically significant ($p<0.001$).

As the predominant outcome measure used in the FFT literature has been officially recorded offending there are few studies using behaviour rating measures as in the present study. Graham et al. (2014) in an effectiveness and transportability study conducted in Ireland obtained pre to post effects of d = 0.64 for treatment completers (n=98) using the conduct problems scale of the SDQ measure. Hartnett et al. (2015) in an Irish study with elements of efficacy, effectiveness and transportability (community based, however an FFT developer was co-author), obtained pre to follow-up effects of d = 1.07 and d = 0.48 for parent and youth rated conduct problems respectively. White et al. (2013) in a USA based community study obtained a pre-post effect of d = 0.41 for the conduct problems scale of the BASC rating scale (n=77).

Three points can be made here: Firstly, Graham et al. (2014) and Hartnett et al. (2015) both conducted multivariate analyses of outcomes at post-test or follow-up and as in the present study these were statistically significant, indicating an overall reduction in conduct problems across measures. Secondly, the effect size of 0.08 for alcohol and drug use is an outlier in terms of one common definition; it is more than 1.5 times the interquartile range below the first quartile (cf. Howell, 1992, p51). This suggests that it may be a qualitatively different outcome and not strictly comparable to the remaining four effect sizes. Were this the case the mean effect size for the current study and the three comparison studies is very similar; 0.66 range 0.49-0.78 (this study), mean 0.65 range 0.41-1.07 (comparison studies). Thirdly, effect sizes for the two nonsignificant outcomes (excluding alcohol and drug use) of 0.49 and 0.71 were within the range of effect sizes achieved in the three comparison studies, indicating, statistical significance aside, broadly comparable outcomes. This point holds despite the tests not being under-powered. These outcomes show that, notwithstanding the mixed results in terms of statistical significance and effect size, the reductions in conduct problems achieved are commensurate with outcomes obtained in previous FFT effectiveness and transportability studies.

With regards to the outcome for alcohol and drug use, previous studies of FFT have obtained significant results and medium to large effect sizes for reductions in alcohol and substance use (Rohde et al. 2014; Sleznick & Prestopnik, 2009). However substance use was a presenting issue in these studies and the youth exhibited high levels of this behaviour at the commencement of treatment. In contrast, substance use as the primary presenting issue was an exclusion criteria in the present study and initial levels of alcohol and substance use were low; 53% of young persons in the present study were rated by their parents as engaging in nil alcohol or substance use at the commencement of the study and a total of 84% of young persons were reported to engage in substance or alcohol use once a week or less. Thus there may have been a floor effect insofar as nil and low rates of use are difficult to improve upon. Lower rates of use may also have been related to the mean age of the young persons, 13 years 7 months whereas youth in the previously cited two studies were 15-16 years old on average and longitudinal studies in New Zealand show that rates of substance use increase across the teenage years (Fergusson et al., 2003). Thus the poor outcome on this measure may be unrelated to the effectiveness of the intervention.

The second hypothesis was that conduct problem outcomes for Māori would be similar in magnitude to those for non-Māori. In the present study Māori achieved larger effects sizes than non-Māori for two of five measures and non-Māori larger effects than Māori on three measures. Statistical tests for differences in change scores and ethnicity by time interactions were not significant. Conclusions are limited by the small sample size and consequent low power, however on the basis of the present data outcomes for the two ethnic groups were not statistically discriminable. Further, the average effect sizes of 0.48 and 0.56 were clearly similar, the effect for Māori being 86% of that for non-Māori and the difference between effects (0.08) would be classified as a small effect. Overall the second hypothesis is supported. The international literature on this issue is mixed; in terms of the FFT literature comparisons have been confined to studies of alcohol & substance using youth and have found either no effect due to ethnicity or an advantage to minority groups (Flicker et al. 2008; Sleznick & Prestopnik, 2009). However van der Stouwe, Asscher, Stams, Dekovic and van der Laan (2014) in a meta-analysis of Multi-systemic Therapy (MST) found MST to be more effective with non-ethnic minority youth. In a New Zealand based study Sturrock & Grey (2013), in a study of the Incredible Years model found significant differences between Māori and non-Māori with the latter exceeding the former by effect sizes of between 0.14 and 0.29 for Conduct Disorder and Oppositional Defiant Disorder behaviours. These findings affirm that Māori may be susceptible to poorer outcomes in interventions for conduct problems but there is encouraging evidence from this study that effect-size differences in FFT may be minimal.

The third hypothesis was strongly supported; as indicated above Parent satisfaction was high with 70%-80% of parents indicating that they were "very much" satisfied with key aspects of the FFT intervention and therapists. Satisfaction with outcomes was less pronounced with 16% of parents reporting no satisfaction with the impact of FFT on their child's behaviour and ability to get on with others. This may reflect the imperfect nature of interventions for conduct problems and that a proportion of young persons will not have experienced any significant positive change. For instance, disregarding the alcohol and

drug measure for which outcomes were clearly poor, on the remaining four conduct problem measures between 17% and 39% of young persons either did not progress or deteriorated to some degree. Thus satisfaction with outcomes may accurately reflect variability in the outcomes obtained.

Hypothesis four was strongly supported with 80% to 90% of Māori parents reporting being "very much" satisfied with the cultural sensitivity of the FFT intervention. The latter is particularly important given the over-representation of Māori amongst at risk youth receiving FFT in New Zealand. Low satisfaction would suggest a degree of cultural insensitivity on the part of the therapist which is prima facie likely to damage families' engagement with the treatment which would in turn affect outcomes.

Hypothesis five was not supported and there was no detectable influence of therapist fidelity or competence on outcomes. However the statistical analysis was lacking in power, and inspection of the scores suggests that fidelity and competence were largely adequate. Given that Graham et al. (2014) found that high-adherence therapists had significantly more favourable outcomes using a different measure of fidelity, the TAM (Therapist Adherance Measure), it is possible that the measure used in the present study failed to accurately discriminate low and high adherence. Or it may simply have been have been the case that levels of fidelity and competence were more than adequate and too uniform to lead to significantly different outcomes for participants treated with (relatively) high or low fidelity or competence. Future studies would benefit from comparing both measures.

An additional finding is the level of adversity experienced by the families involved in this study as detailed in a previous section. This shows the inter-connectedness of socio-economic factors and conduct problems and suggests that conduct problem interventions should ideally be complemented with programmes to address such aspects of socio-economic disadvantage as may be amenable to change e.g. family violence, benefit dependence and low educational achievement.

There are three key limitations to this study:

Firstly, in the absence of a control group it cannot be stated with absolute certainty that the positive changes in conduct problems and other outcomes were due primarily to the FFT intervention. Pre-post non-experimental designs have weak internal validity and any apparent treatment effect may be due to maturation, regression to the mean, mortality bias, non-specific treatment effects or a combination of these factors. A randomised controlled trial is required to control for these influences.

Secondly, it was not possible to collect official offending data. Whilst official data is not without its weaknesses it does connect the intervention with a quantifiable socially and politically important outcome. The use of offending data would permit a more thorough comparison with the existing FFT and delinquency prevention literatures.

Thirdly, the present study experienced a significant attrition of participants both drop-outs from the FFT treatment and those lost to the research. Nineteen percent of those contacted about the study declined to participate at the outset. A matter of some consideration was that the ethical guidelines for this study did not allow financial compensation for participation in the parent research interview, which was of significant duration (60-90 minutes). Families were referred to the FFT programme by Child Youth & Family (social services) and whilst treatment was not compulsory family attitudes to the opportunity of treatment were varied. Of the 59 parents or caregivers who agreed to participate and completed the pre-test 29% (17) missed one or other of the post or follow-up parent interviews. Of those missing an assessment 70% (12) had unilaterally terminated treatment according to the FFT therapist. The most common manner of termination was family avoidance or withdrawal from treatment. Families unmotivated to complete further treatment sessions were almost always unmotivated to complete further interviews. The attrition rate amongst those families who completed treatment was 12% (5 of 40). Significantly, the attrition rate was very similar for Māori and non-Māori; a higher attrition rate for Māori could signal a problem with the cultural acceptability of the intervention.

By way of comparison, treatment drop-out rates in the FFT literature range from 14% (Waldron et al., 2001) to 23% (White et al., 2013). Data loss rates may exceed drop-out rates where some participants who complete treatment nonetheless miss assessments; Hartnett et al.(2015) report three drop-outs in their treatment group but were able to obtain follow-up assessments for 53% of those pre-tested, a data-loss rate of 47%. Thus the rate of drop-outs and data-loss in the present study was not dissimilar to that seen in previous FFT studies.

Treatment drop-out is a ubiquitous issue in child psychotherapy and in particular with interventions for conduct problems and delinquency (Kazdin, 1990). In an earlier study of MST where financial incentives were not used the attrition rate was 23% (Henggeler Melton & Smith, 1992).

The primary concern with participant attrition in the conduct problem literature is the threat to internal validity of mortality bias; that is, the differential loss to the study of poorly performing participants thus leading to an inflated degree of improvement amongst those remaining in the study (Kazdin, 1990). A comparison of pre-test scores between participants with complete and incomplete data found somewhat larger (more severe) scores at pre-test in four of five conduct problem measures for those with incomplete data suggesting that more symptomatic participants were more likely to drop-out or miss assessments. However it was also found that those with higher scores at pre-test tended to obtain larger effect sizes, thus it is unclear whether any mortality bias served to attenuate or increase effect estimates.

In summary, the present study shows that FFT is effective and acceptable to both Māori and non-Māori families as implemented in a community setting in New Zealand. Effect sizes for conduct problem outcomes were favourable overall and comparable to those achieved in other FFT effectiveness and transportability studies. There were aspects of the design and implementation which temper these conclusions including the lack of a control group and a significant level of participant drop-outs. Ideally future

research should include a randomised controlled trial and collection of official offending data for at least two years post intervention. Loss of participants should be specifically addressed and modest compensation of parents for completing assessment interviews may be beneficial. If a randomised controlled trial is not possible additional single-group studies based in different centres in New Zealand would add greatly to the generality of the current findings.

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Pacific youth and violent offending in Aotearoa New Zealand

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Pacific youth offenders in Aotearoa New Zealand are over-represented in the rates of violent offences. The purpose of this study was to explore the risk factors that exist amongst this group. Using file data from the New Zealand Police, the offending behaviour and social demographic characteristics of 200 Pacific violent youth offenders aged 10–24 years were investigated. Results revealed that these youth were more likely to be born in Aotearoa, raised in low socio-economic deprivation areas, and that their exposure and involvement in family violence was high. Furthermore, their first known offence to Police was generally of a violent nature. Recommendations for clinical practice and implications for future research are discussed.

Keywords: Pacific youth offenders, youth offenders, youth violent offending

Pacific people are a rapidly growing, diverse and vibrant population. They include those born in the islands and overseas. Within this wider population, the main groups are predominantly Samoan (49%), Cook Islands Maori (21%), Tongan (20%) and Niuean (8%) (Statistics New Zealand, 2014). Recent statistics show that almost two-thirds of Pacific people are born in Aotearoa New Zealand[1], urbanised, and make up 7.4% of the total population in Aotearoa. The Pacific population are also a youthful population, with more than half of its population (54.9%) under 25 years old (Statistics New Zealand). Population projections estimate that the number of Pacific people living in Aotearoa will increase by 2.4% per year, an estimate which is higher than for both Māori and Europeans in Aotearoa (Statistics New Zealand, 2010).

The Pacific population typically reside in the most deprived areas of Aotearoa characterised by poverty, inadequate housing and typically, high rates of crime (Ministry of Health & Ministry of Pacific Island Affairs, 2004). Statistics continue to report a low number (22.8%) of Pacific secondary school students achieving the requirements to attend university when compared to both Pakehā (48.3%) and Asian secondary school students (65.3%) (Statistics New Zealand and Ministry of Pacific Island Affairs, (2010).

Given the fact that the Pacific community in Aotearoa have such a youthful population; and that a number of risk factors exist including poor education (Maguin & Loeber, 1996), antisocial peers (Zimmerman & Messner, 2010), family violence (Reid & Crisafulli, 1990) and poverty (Farrington, 1989),all of which contribute to offending behaviour; any influence this population will have on Aotearoa is likely to increase as the current youthful population develops into adulthood. Therefore, researching Pacific youth and their offending behaviour is necessary to provide information for targeted prevention and intervention of this vulnerable population group (Ioane, Lambie & Percival, 2013).

Pacific Youth and their offending behaviour

The classification age range for youth who offend in Aotearoa is between 14 and 16 years old. Pacific youth offenders are the third largest group of youth offenders in Aotearoa, representing 6–9% of all youth apprehensions over the period 1996–2005 (Soboleva, Kazakova & Chong, 2006). The latest figures show that Pacific youth who engage in offending behaviour commit a larger percentage of violent apprehensions [2]than do European and Māori youth offenders (who constitute the other larger ethnic youth groups in Aotearoa). The definition of a 'Violence' offence reflects that of the New Zealand Police. These include Homicide, Kidnapping/Abduction, Robbery, Grievous Assaults, Serious Assaults, Intimidation/Threats, Group Assemblies (see Appendix A).

Both in Aotearoa and overseas, the dearth of research regarding Pacific youth is acknowledged (Fiaui & Hishinuma, 2009; Singh & White, 2000). In order to provide a brief review of the existing literature, the authors examined Pacific studies in Aotearoa and overseas, including local and international studies investigating other ethnic minorities. A 14 year longitudinal study in Aotearoa found that children of Pacific ethnicity had a higher risk of offending than children of Pakehā ethnicity (Fergusson, Horwood & Lynskey, 1993). Few studies looking at Asian/Pacific Island youth violence found that Samoan youth reported higher rates of violence than other ethnic groups such as Filipino and Hawaiian youth (Mayeda, Hishinuma, Nishimura, Garcia-Santiag & Mark, 2006). In addition, a more recent study that analysed data from the Youth Risk Behavior Surveillance System (1999-2009) in the U.S. found that indigenous and ethnic minority youth that included Native Hawaiians/Pacific Islanders reported higher rates of youth violence that Asians and European (Sugimoto-Matsuda, Hishinuma, Chang, 2013). This is not surprising given the large existing literature base demonstrating that youth in ethnic minorities generally are more likely to be involved in violence. An American study, examining the differences in youth violence among different ethnic groups, found than American Indian, African-American, and Latino youth were more likely to be involved in physical fights than their Caucasian counterparts, and were also more likely than youth

[1] Hereafter, New Zealand will be referred to as Aotearoa, its indigenous translation.

2 Apprehensions count the number of times a person is apprehended or multiple offenders are apprehended for one offence. For example, one offender apprehended for three burglary offences is counted as three apprehensions, while two offenders apprehended for a burglary offence is counted as two apprehensions.

from the Caucasian community to come from impoverished environments where violence was more common (McNulty & Bellair, 2003). In Canada, a ten-year follow-up of Aboriginal and non-Aboriginal adolescent sex offenders found that the Aboriginal population were more likely to have backgrounds associated with Foetal Alcohol Syndrome Disorder, substance abuse, childhood victimisation, academic difficulties and instabilities in their home environment, and were more likely to reoffend sexually, violently, and non-violently than were their non-Aboriginal counterparts (Rojas & Gretton, 2007).

While there is some available research regarding Pacific youth offending in Aotearoa, much more is needed given the continued disparity of outcomes for Pacific youth in areas of social, economic, and educational risk factors that suggests that this population will continue to have greater representation in youth offending (Ministerial Taskforce, 2002; Ioane, Lambie & Percival, 2013;). The over-representation of Pacific youth offenders in violent apprehension statistics necessitates an exploration of this population in our society. The aim of this study was to explore Pacific violent youth offenders through analysing their social and demographic characteristics alongside their offending behaviour in order to gain further insight into this vulnerable population group.

Method

Funding was received from the Auckland City Pasifika District Advisory Board of New Zealand Police and the Health Research Council. Ethical approval was granted by the University of Auckland Human Subjects Ethics Committee (UAHSEC) and the Research and Evaluation Steering Committee (RESC) of the New Zealand Police. Information from the New Zealand Police was sourced from two national databases: the INCOFF Offender Provisional Detail Business Object universe database and the National Intelligence Application (NIA)[3]. Files were accessed for the purposes of this study for offenders who had committed a Violence offence, regardless of whether they had been charged or not.

Inclusion criteria

The youth offenders identified for this study were sourced from the New Zealand Police according to the following criteria:

1. They committed a violence offence (charged or non-charged) on or between 1 January 2007 and 31 December 2007[4].

2. They were identified as having a Pacific ethnicity. This is either reported by the offender or previously known by Police.

3. They were aged between 10 and 24 years of age at the time of their Violence offence. This age range was selected by the authors in recognition of the fact that Pacific cultures use concepts other than age to define the maturity of youth in the community, which tends often to be older than their chronological age (Suaalii & Muavoa, 2001).

Procedures

Using the inclusion criteria, this information was extracted from the INCOFF Offender Provisional Detail Business Object universe database, which provided a list of all Violence offences committed in 2007. The information documented that related to the offender included their age at the time of the Violence offence; suburb where they reportedly lived; gang notification[5] (if present); and family violence notification[6] (if present), all of which was recorded. Random sampling was used to select 200 case numbers within the database that involved youths of Pacific ethnicity. Inter-rater reliability was also carried out to check all coding of variables that included offence types and demographic information.

Final selection criteria

If there was more than one offender involved in a Violence offence, all offenders in that group were selected for the study. If the offender committed more than one Violence offence at the same time, the most serious Violence offence was recorded. For example, if an offender committed a serious assault and also intimidated the victim, the serious assault offence was recorded. Furthermore, if an offender committed other Violence offences during 2007, the first Violence offence in 2007 was recorded. Once the Violence offence was identified and recorded; all previous offences (violence and non-violence offending) prior to the Violence offence were also recorded. The authors also documented any further offending until 2009 to explore the likelihood of recidivist offending. As the research progressed, the authors redefined the Violence offences into three separate categories for further analysis.

Table 1.

Type of Violence offences

Severe[a]	Kidnapping and Abduction, Robbery, Grevious Assault, Serious Assault
Moderate	Minor Assault
Minor	Intimidation/Threat, Group Assembly

a There were no homicide offences in this study.

Inter-rater reliability

To assess the reliability of the data collected, a post graduate psychology student with research experience, access to the New Zealand Police database and no previous involvement in the current study checked inter-rater reliability for 10% of the overall sample. The results of the inter-rater agreement for the variables examined (suburb recorded at the time of offending; ethnicity; gang notification; family violence notification and offence codes) showed a 'moderate' agreement between raters, with an average kappa of 0.74.

Data analysis

All information was recorded in Microsoft Excel© and subsequently transferred to Predictive Analytics Software (PASW)[7] Version 18.0 for statistical analysis and results.

3 This is a database that involves sharing information and integrating interfaces between the New Zealand Police, Ministry of Justice, Department of Corrections and Land Transport Safety Authority.

4 This date was the actual date of the offence or, in some cases, when it was made known to New Zealand Police.

5 The offender may be an associate, member or affiliated with local gangs. This was either known by Police or reported by the offender.

6 The offender may be an offender, victim or witness of family violence.

7 Formerly known as Statistical Package for Social Sciences (SPSS).

Results

Table 2 provides a summary of the social and demographic variables associated with violent offending behaviour amongst Pacific offenders. Chi-square ($\chi2$) tests were used to identify statistically significant differences among the variables. In addition, t-tests were used to test whether differences were significant for the interval variables.

Table 2.
Background characteristics of Pacific violent youth offenders (n = 200)

Characteristics	n (%)
Family violence[a]	122 (61.0)
Born in New Zealand	103 (51.5)
Male	168 (84.0)
Female	32 (16.0)
Socio-economic depravation index (8 or higher)[b]	142 (71.0)
Age: Range 12 – 24yo; *M*=19.43	

a Either an offender, witness or victim of family violence. b 10 is the most deprived areas in New Zealand.

According to the sample in this study, just over half of the Pacific youth offenders (51.5%) were born in Aotearoa. Most Pacific youth offenders were male (84.0%) and living in areas of very high socio-economic deprivation. Seventy-nine, or over a third of the total sample (39.5%), lived in areas with a socio-economic deprivation index of ten, described as one of the most deprived areas in Aotearoa.

Finally, more than half of the Pacific youth offenders (61.0%) in this study had either been exposed to, or experienced, family violence in their homes. Other variables measured, such as drugs, suicide risk, and gang association were excluded from the analysis due to very low numbers. Any findings from these variables would distort and provide an inaccurate perception of the reality as numbers are not significant.

Table 3 provides a summary of the offending variables associated with violent offending behaviour among Pacific youth offenders. The average age at first offence of Pacific youth offenders (M = 17.22, SD = 3.66) was 17 years. Almost half of the sample committed a Violence offence (n = 94) as a type of first offence. After recoding Violence offences in the subcategories of severe, moderate, and minor; Pacific youth offenders in this study committed more severe Violence offences than any other type of Violence offence in this study ($\chi2$ (1, N = 200) = 9.38, p = .002). More than half of the Pacific youth (n = 146) in the study reoffended after their Violence offence ($\chi2$ (1, N = 200) = 42.320, p < .001).

Table 3.
Offending characteristics of Pacific violent youth offenders (n = 200)

Offending variables	n (%)	*M*	*SD*	Sig
Average age at first offence		17.22	3.66	
Violence as first time offence	94 (47.0)			
Severe violent offence as first time offence	129 (64.5)			**
Offends after violent offence	146 (73.0)			

**p<.01

Table 4 provides a summary of the type of Violence offences committed by Pacific youth in this study. Of the sample of 200 Pacific youth offenders who committed a Violence offence in 2007, Serious Assaults were the most common Violence offence committed. Serious Assaults accounted for over a third of all Violence offences, including Male Assaults Female and Aggravated Assaults.

Table 4
Types of violent offences committed by Pacific youth offenders (n=200)

Types of violent offences	n (%)
Homicide	0 (0.0)
Kidnapping and Abduction	2 (1.0)
Robbery	22 (11.0)
Grievous Assaults	31 (15.5)
Serious Assaults	75 (37.5)
Minor Assaults	34 (17.0)
Intimidation and Threats	34 (17.0)
Group Assemblies	2 (1.0)

Table 5 provides a summary of the social and demographic characteristics of Pacific recidivist offenders. The average age for Pacific recidivist offenders was 16 years old. With regard to gender, 76% of Pacific males in this study reoffended; consistent with 60% of Pacific females in this study. Therefore, no significant difference in gender was found with respect to recidivist youth offenders ($\chi2$ (1, N = 200) = 3.59, p = .058). Of the sample that went on to reoffend, it was found that those born in Aotearoa were significantly more likely to reoffend than those who were born in the Pacific Islands ($\chi2$ (3, N = 200) = 16.64, p = .001). More than two-thirds (66.4%) of Pacific recidivist offenders were likely to have experienced or been exposed to family violence in the home; significantly higher than for Pacific youth offenders who did not reoffend ($\chi2$ (1, N = 200) = 6.72, p = .010).

Table 5
Background characteristics of Pacific recidivist offenders (n=146) and non-recidivist offenders (n =54)

Characteristics		Recidivist n (%)	Non recidivist n (%)	Sig
Male		127(76%)	41(23%)	
Female		19 (60%)	13(24)	
Birthplace	New Zealand	81(53.5%)	22(40.7%)	**
	Pacific Islands	45(30.8%)	11(20.4)[b]	
Family violence	Involved	97(66.4%)	25(46.3%)	**
	Not involved	49(33.6%)	29(53.7%)	
Age: Range 12-24yo. *M*=16.89				

a Either an offender, witness or victim of family violence. ** p < .01 b. There were also a number of birthplaces not recorded.

Discussion

Consistent with previous research on youth offenders, 84% of Pacific violent youth offenders in our sample were male (Moffitt & Caspi, 2001; Tibbetts & Piquero, 1999; Zimmerman & Messner, 2010). Using the Social Deprivation Index (SDI) to determine socio-economic deprivation, we found that this group of youth offenders were growing up in the lowest socio-economic deprivation

areas in the country; a finding which is consistent with other ethnic minorities internationally (Farrington, 1989; Hemphill et al., 2009; Jarjoura, Triplett & Brinker, 2002; Marie, Fergusson, & Boden, 2009; Maxwell, Kingi, Robertson, Morris, & Cunningham, 2004; McAra & McVie, 2010; Wright, Caspi, Moffitt, Miech & Silva, 1999; Zimmerman & Messner 2010). A survey of secondary school students in Aotearoa showed that Pacific students reported a higher degree of violence exposure in the family home between adults; and adults hitting children than NZ European students. (Helu, Robinson, Grant, Herd, & Denny, 2009). This finding validates the increased risk for Pacific youth towards offending behaviour given that more than half of the youth offenders in this study were either exposed to, or involved with, family violence in their homes. This is consistent with previous findings where family violence was reported amongst families with dysfunctional and criminal histories (Boden, Fergusson & Horwood, 2010; Juby & Farrington, 2001; Marie et al., 2009; Reid & Crisafulli, 1990; Rodriguez, Smith & Zatz, 2009).

The findings in the current study showed that Pacific youth were more likely to commit a violent offence as their first offence and were reported by NZ Police data to offend on average at the age of 17 years old. This was consistent with international research looking at Pacific youth offending in Australia where these youths did not commit their first offence before the age of 15 years old (Ravulo, 2016). This study is also consistent with international literature that has shown seemingly higher reports for violent behaviour with Pacific ethnicities than other minority ethnic groups (Fiaui & Hishinuma, 2009; Mayeda, Hishinuma, Nishimura, Garcia-Santiago & Mark, 2006). This study showed the average age of offending for Pacific youth was 17 years old, which is in line with the common age for violent apprehensions in Aotearoa (Smith 2008). However, this age means that our Pacific violent youth offenders generally begin to offend at an age that does not meet criteria for a legally defined 'youth'. Therefore, they are more likely to be sentenced in the District Court jurisdiction and face harsher penalties, such as imprisonment without age appropriate intervention. In this study, most Pacific violent youth offenders committed violent crimes as a first time offenceof a more 'severe' nature and continued to reoffend after their Violence offence. Therefore this study highlights a more serious group of offenders where intensive age appropriate interventions that includes cultural interventions need to be implemented after their first offence to ensure the likelihood of further offending is diminished.

Further findings in this study showed that Pacific youth offenders who reoffended, compared to those who did not reoffend, were more likely to have previous or current involvement with family violence, again highlighting the association by which family violence appears to impact on the development of young children and the risk of offending behaviour. Recidivist offenders were also more likely to be born in Aotearoa. However, anecdotal evidence suggests that it is possible some of the youth offenders born in the Pacific Islands were sent home to the islands by family as a consequence of their behaviour. In these cases any reoffending behaviours would not be captured in the New Zealand data (New Zealand Police, 2010).

Limitations and future research

One of the major limitations of this study was the inability to break down the Pacific ethnicities into the different Pacific nations, for example Samoan, Tongan, and Cook Islands Māori to name a few. This is due to the way in which Pacific ethnicities are recorded as one group in the Police database. Efforts to research and acknowledge each Pacific group separately remains a priority within the Pacific community because, without this research, issues that are relevant to one ethnic group but not to another are likely to be missed (Le & Arifuku 2005).

Based on the findings of the study, the authors suggest the need for qualitative research on Pacific youth in Aotearoa and their violent offending behaviour, alongside a control group of Pacific youth who do not offend. It is likely that common risk factors would be found between the two groups. However, of greater interest are the protective and resiliency factors among Pacific youth who do not offend. Determining what these are requires research and analysis in order to identify prevention strategies for our Pacific youth. This is consistent with previous recommendations that an evaluation and review of current interventions with Pacific youth who are at risk of adverse outcomes, including those undergoing mentoring and therapeutic programmes, would be beneficial for both the Pacific community and for society as a whole (Siataga 2011).

Furthermore, given the growing diversity and diasporic Pacific community in Aotearoa, further research would benefit from consideration and acknowledgement of youths of mixed Pacific ethnicity, Pacific and non-Pacific ethnicity; youths born in New Zealand and those who migrate from the islands .

Conclusions

Almost half of the sample committed a Violence offence as a first time offence consistent with a recent Australian study of Pacific youth offenders (Ravulo, 2016). The most common Violence offence committed by Pacific youth in this sample was Serious Assaults that also include Male Assaults Female. Family violence features highly in this sample of Pacific youth, a finding that supports a previous analysis of violent crime in Aotearoa that estimated that a third of violent crimes were associated with family violence (Smith 2008). In a national student survey, it was hypothesised that the violent behaviour among Pacific youth is a reflection of what is observed in the home (Helu et al., 2009). To gain further insight, the origins, attitudes, and effects of family violence in Pacific communities need to be researched directly with Pacific violent youth offenders and their families, given the high rates of family violence in this study.

It is also important to note the ongoing efforts of the government in Aotearoa, with campaigns against family violence and a change in Police attitudes, which are likely to have increased public reporting of family violence (Smith 2008). Working with families to eliminate violence in the homes should continue to be a priority amongst government agencies such as health, police and education. Equally important is the need for findings from research such as this, as well as future

research, to inform government policy and implementation. This will allow us to work with these vulnerable population groups using evidence based research and research informed practice (Lambie & Ioane, 2012).

Even though these findings should be viewed as exploratory, this study provides a platform for Pacific youth offending research to continue, as there is a significant amount of information yet to be discovered from studying this population. Future findings from this group are likely to inform government policies and practice, given the violent nature of offending for this population and the current youthful age of the population as a whole. As research continues in this area it is likely that Aotearoa will become better informed about developing culturally appropriate interventions for this group. This can then begin to reduce the adverse effects of offending on our Pacific youth and families; and the wider community in Aotearoa.

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Appendix A: New Zealand Police Violence Codes[1]

Category	Offences
Homicide	Murder; Attempted Murder; Manslaughter; Infanticide; Abortion; Aiding Suicide and Pact
Kidnapping/Abduction	Kidnapping; Abduction; Slave Dealing
Robbery	Aggravated Robbery; Non-Aggravated Robbery; Assaults with Intent to Rob; Compelling Execution of Documents; Aggravated Robbery
Grievous Assault	Wounding with Intent; Injuring with Intent; Aggravated Wounding/Injury; Disabling/Stupefying; Dangerous Acts with Intent; Injure—If Death Ensued, Manslaughter; Miscellaneous Grievous Assaults; Use Firearm against Law Enforcement Officer; Assault with Weapon
Serious Assault	Aggravated Assaults; Assault with Intent to Injure; Assault on Child (Under 14 years); Assault by Male on Female; Assaults Police; Assaults Person Assisting Police; Assaults Person Lawful Execution Process; Common Assault; Miscellaneous Common Assault
Minor Assault	Assault on Law Enforcement Officers; Assaults Person Assisting Police; Assaults Official (Other Statutes); Common Assault; Miscellaneous Common Assault
Intimidation/Threat	Threatens to Kill/Do GBH; Threatening Act (Person/Property); Threatening Behaviour/Language; Demand Intent to Steal/Extortion; Offensive Weapon Possession etc; Fail to Provide Necessities of Life; Miscellaneous Intimidation/Threats; Threatening to Act (Person or Property)
Group Assemblies	Riot; Unlawful Assembly; Crimes against Personal Privacy; Criminal Harassment; Participation & Association Offences

[1] Refer to New Zealand Police for further information and clarity

Reducing racism against Māori in Aotearoa New Zealand

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Previous research on racism has examined perpetrators' more than targets' perspectives. This study aimed to explore targets' views on how racism against Māori in Aotearoa New Zealand (Aotearoa NZ) might be reduced. Nineteen indigenous Māori men and women and five Pākehā (New Zealand European) female partners took part in individual interviews, which were transcribed and analysed using thematic analysis informed by social constructionism. Participants' accounts focussed on four main ways to tackle racism, namely through reducing structural racism, employing educational strategies (e.g. teaching the Treaty and Māori history), ensuing on-going daily interactions and relationships between Māori and Pākehā, and using "Kiwi" as an inclusive and uniting term. The findings contribute to knowledge regarding targets' understandings of racism and provide unique insights that are relevant for health and other professionals in Aotearoa NZ.

Keywords: Māori, Pākehā, racism, lived experience, prejudice, discrimination

Introduction

Throughout history racism has resulted in slavery, extinction, and marginalisation, particularly of indigenous peoples, and been justified by a belief in the superiority of the dominant race. Psychological researchers began the analysis of racist assumptions in the early twentieth century, when racism was considered intrapsychic (Duckitt, 2001). Growing acceptance of the importance of contextual influences by psychologists led to racism being reclassified as personality interacting with environment (Lewin, 1936). Allport's contact theory (1958) recommended controlled interaction in a time of apartheid and segregation, and included consideration of personality, context and cognition. Further studies in group cognition led to the development of ingroup outgroup theories in the 1970s and 1980s (Tajfel, 1978; Turner, 1985). In 1969 racism was legislated against at an international level (United Nations, 2016), a precedent followed in Aotearoa NZ in 1971 by the passing of the Race Relations Act (NZLII, 2016), the 1990 New Zealand Bill of Rights (Parliamentary Counsel Office, 2016), and the 1993 Human Rights Act (Parliamentary Counsel Office, 2016). Under these laws, racism and discrimination, ethnic slurs, and the inciting of racial disharmony, became prohibited. The result was a move away from blatant racism, to a more subtle, modern racism (Kinder & Seers, 1981; Pettigrew & Meertens, 2001) in which racist intent was implicit but not openly declared.

Research into racism in Psychology traditionally drew on a positivist hypothetico-deductive model where it is assumed that people hold stable, essential and universal characteristics and attitudes regarding prejudice and racism, and that these function regardless of political, social and economic influences. This deductive, 'top down' research approach generally employs surveys or experiments, quantifying peoples' attitudes and views and subsequently making generalisations to specific populations based on statistical analyses of the findings. However this dominant paradigm is problematic because results are assumed to be universal, thus ignoring or marginalising minority and indigenous perspectives and opinions. Historically, Pākehā studies have compared Māori data unfavourably against Pākehā standardised norms (Gavala & Taitimu, 2007) and discredited Māori perspectives (Black & Huygens, 2007). Tick boxes or Likert lines designed by Pākehā researchers have not always included ideas outside a Pākehā ontology, and such omissions in psychometric measures have at times invisibilised serious issues. Furthermore, researchers working within this paradigm struggled to identify subtle versions of racism due to the nature of their psychometric tools, which were incapable of separating racism from other confounding variables (Bernal, Trimble, Burlew & Leong, 2002; Roets, Van Hiel & Cornelis, 2006).

In contrast, the 'turn to language' in social psychology throughout the 1970s and 1980s (Gergen, 1985) and the rise of research drawing on ideas from social constructionism led to research that focussed on people's everyday talk about racism. Research from a social constructionist framework emphasizes how our knowledge and understandings of the world are socially and culturally derived. Thus knowledge is not viewed as neutral but influenced by history, politics, culture, societal power imbalances and other contextual factors (Burr, 2015). Research in psychology from this tradition suggested that racism arose almost entirely from contextual, social and situational features.

In Aotearoa NZ, understandings of racism against indigenous Māori were expanded using methodologies informed by a social constructionist perspective (Tuffin, 2013). Discursive studies contributed to perpetrator theory by analysing perpetrator talk and text in context, and underscoring that racism was a subtle, social process constructed, generated and re-created in everyday language. Influential research by Wetherell and Potter (1992) and Potter and Wetherell (1987, 1998) investigated subtle linguistic marginalisation in which direct reference to race or ethnicity was avoided. Instead, neoliberal rhetoric

constructed Aotearoa NZ as a land of equal opportunity free of systemic racism. Pākeha structures were viewed as egalitarian, and thus Māori who did not achieve in them were positioned as blameworthy. McCreanor (1997) explored the historical beginnings of this discursive reproduction of colonial power structures in early nineteenth century writings of the colonists and found Māori portrayed in a negative light, their culture and language trivialised, and their needs marginalised. His analysis showed the use of the word 'savage' to construct Māori as bestial, or lower on the evolutionary chain (Johnston & Pihama, 1994) yet 'ignorant' or 'noble' and capable of rising to learn British ways. These constructions persevered in contemporary language with Māori labelled 'good' if they accepted acculturation and fitted into the standard story of harmonious race relations (McCreanor, 1993; Nairn & McCreanor, 1991), and bad, or 'stirrers' if they objected.

Researchers have also explored the role of media in producing and reproducing these and similar discourses (Abel, 2013; Lehrman, 2007). Media is shown to trivialise or vilify Māori and under-represent their positive achievements, which subtly supports a Pākehā right to rule (Nairn, Pega, McCreanor, Rankine & Barnes, 2006). Such constructions have contributed to erroneous assumptions among the public, such as the view that Māori are both innately physical rather than intelligent (Hokowhitu, 2004) and innately criminal (McGregor & Te Awa, 1996). Similar negative representations are found in social media (Johns & McCosker, 2014).

Such studies provide valuable insight into how racism is perpetuated and maintained within societies, however they focus primarily on the dominant population, the perpetrators of racism. Both in Aotearoa NZ and internationally there has been relatively little attention and focus on the targets of racism (Swim & Stangor, 1998). The views and perspectives of targets, such as indigenous and minority populations, have been relatively absent with a few notable exceptions, such as studies which have explored their coping strategies (Brondolo, Brady, Pencille, Beatty & Contrada, 2009; Mellor, 2004) and microlevel resistance (Major, Quinton, McCoy & Schmader, 2000).

This imbalance is problematic in Aotearoa NZ, where psychologists have a responsibility to investigate unjust societal norms (principle 4, New Zealand Psychological Society, 2002) and honour Treaty principles of equal partnership (1.3.1, New Zealand Psychological Society, 2002). The Treaty, regarded as the founding document of Aotearoa NZ, contains three articles: the first article describes a bicultural partnership, the second protection for Māori and their initiatives, and the third, equal citizenship, equal respect (Herbert, 2002) and mutually shared knowledge (Evans & Paewai, 1999). The current lack of research on Māori targets' perspectives may be attributed to a number of factors, including Pākehā disbelief in the existence and importance of racism against Māori (Human Rights Commission, 2007) and inaccessibility of Māori participants (Major, Qunton, McCoy, & Schmader, 2000). Māori resistance to Pākehā research may be traced to studies which have framed Māori negatively, or provided imperialistic reconstruction of Māori ideas (Cram, 1997) with loss or invalidation of their alternative understandings (Blundell, Gibbons, & Lillis, 2010). These factors coupled with the need for cultural sensitivity are said to have contributed to a 'Pākehā paralysis' in which interviewing Māori is mainly avoided (Tolich, 2002) and an imbalance in academic understanding created and perpetuated.

Nevertheless some studies have examined accounts from Māori participants. Webber, McKinley, and Hattie (2013) found that Māori adolescents experienced racism, including negative stereotyping involving criminality, lesser intelligence, and lower educational ability. Moewaka Barnes, Taiapa, Borell, and McCreanor (2013) analysed Māori focus group interviews and found four primary levels of impact: internalised racism, interpersonal racism, institutional racism and societal racism. Participants reported the negative impact of hegemonic representation of Māori in the media, in the form of racist stereotyping, and the over-surveillance of Māori by police. Internalisation of racist abuse, and anxiety, was coupled with coping by avoidance or the sacrifice of Māori cultural markers. Dew et al (2015) interviewed Māori who had undergone cancer treatment and found that the classic patient role did not adequately benefit many Māori who had culturally specific family influences and a need to include alternative healthcare approaches. Pack, Tuffin and Lyons, (2015a) sought Māori accounts of why racism occurred. Findings reinforced previous work on media representation and systemic racism, and also highlighted issues around Pākehā ignorance and assumptions of superiority. Māori responses to racism included micro-level verbal resistance strategies which were seen as successful (Pack, Tuffin & Lyons, 2015b). These accounts revealed Māori participants' agentic control of their response, and their belief in the ability of Pākehā to understand and respond positively if educated in this area.

The current study was situated within a social constructionist epistemology. This theoretical positioning sees participants as 'expert knowers', and thus allows the perspectives of Māori and their partners to be fully explored and validated. The perspectives of Māori targets and their partners may provide unique and beneficial new insights which differ from those found in majority studies of perpetrator theory. The overall aim of the study was to add to local understandings by researching and exploring Māori adults' and their partners' views on how to reduce racism in Aotearoa NZ.

Method

Research design and Kaupapa Māori approach

This study employed individual interviews to elicit the views of Māori adults and their partners regarding how to reduce racism. This was consistent with a social constructionist approach as well as oriented to *Kaupapa Māori* principles (Smith, 1997). Here, *kanohi ki te kanohi* or "face to face" communication is preferred over academic remoteness or ostensibly neutral paperwork. *Kaupapa Māori* is well respected as a research method (Kerr, Penney, Moewaka Barnes & McCreanor, 2010) and its principles (Smith, 1997) were observed throughout the study as follows. To ensure *tino rangatiratanga*, all participants' opinions

were privileged over those of the researchers, and they were given the opportunity for feedback and correction. *Āko Māori* was observed, which included listening to and recording relaxed and lengthy face- to- face interviews. *Taonga tuku iho* meant that some Māori language was used in interviews, and *tikanga* observed, such as having a prayer before the interview if desired, and/or an *awhi* (hug), and talking about mutual connections. There was also acknowledgement of *kia piki ake i ngā raruraru o te kainga*, or the importance of improving life for all Māori by having this discussion, and the *kaupapa*, the fact that the findings would contribute to everyone's knowledge. The nurturing connection between interviewer and participant meant that it was understood that a relationship had potentially begun, not, ended, by the close of the interview.

The interviews were conducted by the first author, who drew on many years of working as *whanau* or family alongside Māori who had encouraged the project, and utilised her additional knowledge of Māori culture and language gained through a B.A. in Māori studies. The researchers therefore positioned themselves as Pākehā who would approach the study endeavouring to put aside previous majority understandings, embrace the principles of *Kaupapa Māori*, and privilege participants' accounts by using inductive thematic analysis informed by social constructionism. To negotiate the issues regarding research with Māori, approval was sought from an independent Māori cultural advisor, a respected representative of a local marae, and the University's Human Ethics Committee.

Procedure and participants

Participants who knew the first author volunteered on the basis of a trust (Tolich, 2002) established over many years in a working relationship, which opened a door for clear communication. This trust was conveyed by those participants to the marae participants, and to those who snowballed from the first participants. Twenty-four participants took part, 19 Māori (10 women, 9 men), and five Pākehā women partners, with an average age of 53. The Pākehā partners were endorsed by their Māori partners as having equally strong views, and this was borne out in the interviews. Participants' occupations included counsellor, communications manager, bus driver, electrician, author, foreman, cook, financial advisor, lecturer, accountant, company director, home maker, teacher, and retirees. Participants chose their own pseudonyms to ensure anonymity. The study was conducted in Wellington, Aotearoa NZ, with individual interviews taking place in locations of the participant's choice, either their homes or places of work. To prevent biased or slanted interpretations participants were given their transcripts to read, make further comment, change, and the chance to engage in further discussion before signing off, then offered continued contact with the researcher throughout the project. Interview questions were open ended and non-directive. After talking about their lived experiences of racism (Pack, Tuffin & Lyons, 2016), how it might be accounted for (Pack, Tuffin & Lyons, 2015a) and their responses at the time (Pack, Tuffin & Lyons, 2015b), participants were asked 'what do you think is the solution?' All answers were accepted as expert testimony. Key differences were noted in recruiting and interviewing for this study and previous work with Pākehā, as shown in the Appendix, which may be a useful tool in the *kete* (kit or basket) of other Pākehā researchers.

Transcription and analysis

The responses were transcribed verbatim using an adaptation of Atkinson and Heritage' notation (1984), s discursive tool which records speech with as much detail and accuracy as possible using specialized typographical symbols. The excerpts presented have been edited with standard punctuation, and fillers and minimal encouragers removed for reading purposes. Thematic analysis informed by social constructionism was employed to analyse the transcripts (Braun & Clarke, 2006). In this approach recurring themes are identified, and each viewpoint considered valid and legitimate within and relative to the participant's ontology. This theoretical framework meant that analysis was open and exploratory, privileging the perspectives of the participants rather than a deductive analysis guided by a preconceived theory or model. This inductive data driven approach meant that the themes identified were heavily situated in and across the transcripts.

There were specific steps involved in the analysis. Preliminary coding occurred during the reading and re-reading of each transcript. Here, broad categories were identified from data that included rhetorical ideas or revealed strong feelings or core issues. For example, in the first transcript, there was a strong statement about racism and the first broad category identified was labeled 'General statements about racism in NZ; similarly the 'Treaty of Waitangi' was frequently mentioned and labeled as a category. Following this preliminary coding, data in the broad categories were examined for further meaning in discrete coding. Here associated common words or phrases representing a single idea, for example 'teach antiracism' were identified and used to generate semantic codes for all similar data. In an iterative process, re-readings of the entire data set were conducted, and re-referenced back to the codes, which were merged or re-named as analysis continued. Continual checking between data and code names strengthened the reliability of the findings and retrievability of all coded data (Spencer, Ritchie, Lewis & Dillon, 2003). Theme development occurred during this process, as the codes were merged into broader conceptualisations grounded in the data. The process required rigorous familiarisation with the data, formation of coded data-sets, and recursive data coding (Braun & Clarke, 2006). The researchers discussed and agreed upon the final four most compelling themes on reducing racism, checking between data and codes for verification (Braun & Clarke, 2006). These are presented below.

Findings

Participants began by categorically constructing racism as pervasive and universal, claims that were supported by accounts of subtle and overt racism, and clear recollections of the emotions and feelings experienced. Many of the accounts that follow are of racist incidents, and it is from these that suggestions for intervention arose. Participants suggested possible solutions in four main themes: reducing structural

racism, education, interaction, and being *Kiwi*. The first of these expressed the need for intervention in institutional structures where racist practices function.

Reducing structural racism

Legislation against racism is clearly laid out in the Race Relations Act 1971 and the Human Rights Act 1993 (Human Rights Commission, 2006). However the justice system, the health system, and the workplace, were constructed by participants as contexts within which these laws were ineffective either because of power imbalances, or because of the daunting nature of the complaints system. Within the justice system, Māori were constructed as over-policed, and more harshly sentenced. In the excerpt below, Hoa talks of her son's experience when out with friends.

> Hoa *: The police used to stop them you know, and he'd come home and he'd say to me oh Mum! you know and I'd say what are you late home for? And he'd say oh the police stopped me. What for? oh they didn't even tell me. And then they had European friends too, and the European friends were allowed to go.*

Hoa's description is typical of many accounts recounting how phenotypically Māori features increased the likelihood of being stopped and detained by police. Pākehā friends who were with them would be ignored or released. Others recounted young Māori being interrogated without a lawyer present, and intimidated into a "confession". The different treatment of Māori was constructed as racism, and the solution put forward by participants was having greater numbers of Māori in the judicial and justice workforces.

> Sharlee*: It would be different if it was a Māori, like say if a Māori policeman came to us and talked.*

Sharlee implies a different positioning: Māori police would talk, implying a lack of bullying or intimidation, and the possibility of an opportunity for a fair hearing. Participants also constructed judges as prejudiced.

> Poto*: I think that some judges have a pre-conceived idea; when one who is deemed to be Māori steps before them, they deal with it in a totally different manner.*

Poto and others alleged that the disproportionately high number of Māori in prisons was due to racism in sentencing, rather than essential criminality, a view supported by the literature (e.g., Fergusson, Swain-Campell & Horwood, 2003; United Nations 2016; Workman, 2011). Participants noted that this needed addressing, but the power imbalance within the Pākehā dominated justice system provided a closed system in which Māori were unlikely to obtain a voice.

With regard to the health system, participants underscored the importance of Māori driven initiatives with Māori executives and independent government funding. Ruihi gives one example of the need for bicultural options.

> Ruihi*: ...and then then this is another thing. Their reporting system is ticking boxes - ticking boxes! Oh! oh I said oh I* refuse*! It got sent back! It's a Pākehā thing! It doesn't clarify, it doesn't explain what I want to say! Ah - right or wrong, is this right or wrong. It says this should be done: yes, or no. Oh gosh, it doesn't say anything! It's just like from one to ten, how would you rate a person? Same thing! You know I said this is not the Māori way of doing things! They said what is the Māori way of doing things? I said* face to face*!*

Ruihi feels that her life cannot be expressed in ticks or numbers, because it limits her responses to the options a Pākehā mind has presented on a prescribed form, which may not include aspects of her world and all she wants to say. She applauded the methodology used for the current study, in which her words and ideas were privileged in a kanohi ki te kanohi or person to person encounter, where she gave a full verbal account without Pākehā baseline or parameters. Her account highlights a Eurocentric bias in work and health assessments, despite allegedly bicultural practices (Campbell, 2005), and raises strong concerns around the need to assess in a way that acknowledges Māori and Pākehā differences of approach.

Sophia talks of being passed over for recognition in the workplace.

> Sophia*: We all have the same perspective on that. If you're Māori, you've got to do it* twice *as hard, twice as well to get the same amount of recognition. And we do, we work* extremely *hard to get the same, the same amount of - yeah, kudos as anyone else.*

Sophia's contention is that Pākehā are preferred over more capable Māori. In this example of aversive racism on the part of employers (Hodson, Dovidio, Gaertner, & Samuel, 2010), racism in promotion is strongly implied. This was underscored by other participants with phrases such as "you've gotta be that much better" and "better than Pākehā folks to be on the same level". Power imbalance precludes action to reduce this form of systemic racism, as it does in the example below.

> Hose*: He called my worker a dumb, black, nigger.*
>
> Sylvia*: Wow!*
>
> *Hose: The young fellow just wanted to fight, but I said no, no, because you'll just get into trouble. Let's just* do it their way*, you know through the appropriate channels? So we had letters and we had the witnesses, and* nothing happened.
>
> *We went into a meeting with ahm [Hose's boss's name], he pulled us into the office and he says 'look, ah Hose, we try to think of our group of guys as like a rugby team! And what* happens *in a rugby team stays in the rugby team and what goes on on the rugby field* stays *on the rugby field. And I was shy of going to the* Labour *Department to get it sorted out. ..... he said it's just too much writing* letters *and so on to get anything done. But they wouldn't go through it that little bit further you know? And it was like the guy was still working there, the next day, no problems, not even slapped down.*

Hose works in a large company and is in charge of a group of younger workers, one of whom has been targeted by an older worker not under Hose's authority. Hose thinks to prevent a violent outburst from the younger worker, by taking the matter to his boss. His boss however uses his authority to shut down the complaint. Hose considers utilising the external and legally backed Labour Department complaints system, but is

"shy" of the process, and the younger worker tells Hose he has no faith in the on-going paperwork which would be involved. The knowledge that the perpetrator has not been "slapped down" increases the power imbalance: the boss and the perpetrator have colluded in structural racism.

Participants did not construct anti-racism legislation as being effective against systemic racism, but consistently referred to the principles of the Treaty of Waitangi as a means of ensuring Māori were given equal treatment and respect. Participants suggested that in depth study of the Treaty be made mandatory for all, the theory being that if Pākehā understood it and acknowledged it as their national heritage, they would not behave in a racist manner.

Education

Education contained four sub themes: Teaching the Treaty, teaching history, teaching cultural differences, and teachers' roles, in teaching and modelling anti-racism. Teaching the Treaty was constructed as a means of eliminating racism.

> Bill*: It's not the guy that* reads *the Treaty, understands the Treaty and reads* other *documents that* relate *to that document (who is racist)*
>
> Bill*: there's a difference between reading, and studying, and so if you're studying something then you get a word and you get to really understand its meaning.*

Bill and other participants dispensed with what was seen as tokenistic inclusion of the Treaty; for them, a cursory reading would not suffice. They posited that people would not act in a racist manner toward Māori if they had been taught an in depth understanding of the Treaty and its history. Teaching the history of the Treaty included teaching an accurate historical account including the invasion of the land by Europeans.

> Poto*: You know there are a* lot *of students who have* never heard *about the Taranaki wars, and have* never heard *about why they wear these three white feathers in their hair. Have never heard about passive resistance similar to Ghandi, have* never heard *about the rape and the atrocities that have taken part in the land wars, have never….and can't understand why Māori get* upset *about land that has been taken off them.*

Poto draws attention to cultural racism inherent in the current history curriculum, which by leaving out the things he mentions, implicitly perpetuates the standard ideology (McCreanor, 1993). In this, Pākehā are constructed as the honourable winners of a fair fight, the Māori as savages rightfully subdued. Poto seeks to give equal weight to both sides' perspectives, and this move is constructed as having potential to create understanding between Māori and Pākehā.

Failure to teach cultural differences was constructed as unspokenly racist, as exacerbating a sense of agentic racism in societal encounters in which Pākehā assumed that their cultural mores were the only ones to observe. Ruihi describes a meeting she attended, in which differing cultural expectations surfaced.

> Ruihi*: I said I've come here, on my own, and none of you looked up, none of you greeted me, none of you said hello, you know, so I think you're cold hearted. And you call yourselves [professional occupation]! And at the end of the meeting one person whom I had met and did know well came up to me and she said Ruihi? all you need is a good hug. And I said you're right. I arrived and no-one gave it to me, and she smiled at me. And so she came up and gave me a real good hug. Now she understood what Māoris needed. She understood what* I *needed.*

Ruihi's account is typical of participants' accounts in which they were hurt by the Pākehā expectation that one Pākehā culture would fit all, or cultural racism. Māori were expected to learn Pākehā cultural norms, but Pākehā did not learn Māori culture. In this example, Ruihi lists what some Māori might expect when arriving alone at a strange place: to be looked at, greeted with a smile, to be physically hugged. Only one person present has the knowledge to bridge the gap.

Although participants agreed that teaching children to be non-racist began in the home, they also constructed this as something that needed to be in the curriculum.

> Inap*: I think the only way it's going to happen or will happen is through education.*
>
> Inap*: An environment of acceptance and that* yes *we have our points of difference and* yes *we do things differently but that doesn't make me any more frightening or violent or intimidating or* better than you.

Inap advocates a school environment where acknowledgement and respectful acceptance of ethnic and cultural differences is openly discussed, and children are taught not to associate phenotypical pointers with negative stereotypes. This would necessitate open discussion of race, appearance, and assumptions of, for example, inherent criminality. No participant suggested ignoring the issue. This position can emerge from a supposedly egalitarian but erroneously colour-blind approach, in which drawing attention to race or differences is itself considered racist and unhelpful (Brown et al, 2003). Instead, participants underscored openness. "Let's talk about it *all*" said Zoe, a Pākehā teacher.

Others talked about the need for teachers to engage over racist incidents or ethnophaulisms (ethnic or racist slurs) they encountered in school. Mabel, a Pākehā with a Māori husband, recounted a time when their phenotypically Māori child had been targeted in racist bullying. The teacher had successfully countered this by teaching lessons that accented positive aspects of Māori culture. Tu talked about a racist incident in his trades class, where his tutor had spoken up for him and denounced verbal slurs and racism. Tu's two fold response to his tutor was significant 'he's a Pākehā man but he's really lovely' indicating that Tu's growing disillusionment with Pākehā had found an exception. These are both examples of commendable teaching practices, but they also highlight the power of role models to reduce racism by taking positive action whenever racism occurs.

Interaction

Most participants talked about the need for on-going daily interaction

between Pākehā and Māori if racism were to be defeated. This theme included three sub themes: integration, working together, and relationships.

Māori make up 14.9% of the population (Statistics New Zealand, 2013a) and participants indicated that in schools or towns where there was a higher proportion of Māori, and correspondingly higher rates of integration, racism was constrained. Some cited a lack of bullying in their previous high schools of equal Māori and Pākehā students. Erana stated that three quarters of the people in their (non-racist) town were Māori; Zoe said an acquaintance was prejudiced against Māori, and would probably never change because the acquaintance's township elsewhere was largely Pākehā, with no chance of interaction with Māori. Integration of Māori and Pākehā houses was considered important.

> Zoe*: it was* never ever *'we've got a Pākehā here and we've got Māori there' we were* all living together*, we were all* immersed*.*

Zoe's excerpt is from her account of a district she grew up in where Pākehā and Māori lived as neighbours in close proximity, and there was mutual cultural interaction and no racism. Elaine, a Pākehā who lives on Māori land with her husband who is Māori, pointed out that Pākehā and Māori lived adjacently and met in everyday activities without racial disharmony. All participants who currently lived or had lived in an integrated housing situation were unanimous that Māori and Pākehā got on well in this context, rather than where Māori were in the minority.

> Tu*: where I grew up it was kind of like that there was probably more Māori than Pākehā? But we all got along we all got along with everyone where I came from.*

Working together as a group for a common goal was also constructed by participants as conducive to reducing racism, as in Inap's account below.

> Inap *: I think I started to learn about appreciating other peoples' points of difference…sometimes we didn't always agree but yeah, cause when you're in a team you know you have to be able to put aside those differences for the greater good.*

Inap notes that when working together and having to ignore personal complaints, the differences between Māori and Pākehā become subordinate to a common team goal which fostered mutual appreciation. Another participant, Sophia, pointed out that Māori and Pākehā had worked together historically, for example in the first building of roads and railways, and other participants cited working with Pākehā today on church or volunteer projects without prejudice or racist incidents.

On-going relationships, especially if close or personal, were possibly the most cited way to put an end to prejudice, as explained by Freya, a Pākehā with a Māori partner.

> Freya*: I think if you have a* basic belief *that Māori are* inferior*, you could have all sorts of stuff coming and it would just bounce off unless* something's happening *to actually* change *you at a real… micro level. I believe personally in a relationship probably with other Māori who affect you and touch you in some way not just like another person - or there's too much of '*us and them*' and it's too easy to separate.*

Freya constructs negative racist stereotyping as an unyielding belief resistant to conflicting evidence or anti-racist attempts to restrain or unpack it; as she concludes 'it would just bounce off'. She constructs the separation caused by discriminating group categorisation as becoming an indomitable "them and us", and notes the cognitive ease of continuing the mental separation of the two groups. An interpersonal relationship, however, is constructed as having the power to bridge preconceptions and change prejudice. Ropata describes other ways a positive relationship may counter stereotypes.

> Ropata*: If I took my mate who was from a Pākehā home to you know, to a celebration or something, they were blown away and they'd say 'oh I didn't realise Māori behaved like this' because there was no alcohol you know and it was - everything was sort of spiritually sanctioned and so on, so it was a totally different experience.*

Ropata already has a positive relationship with a Pākehā "my mate" and enjoys further breaking down prejudice by introducing him to a Māori community which defies the negative stereotypes (Tausch & Hewstone, 2010). His mate responds immediately, but others noted that this could be a long or gradual process. Elaine, a Pākehā, talked about a relative's waning prejudice against her Māori husband, Bill. Initially there was a marked prejudice, however as the relationship grew, and Bill defied their negative stereotypes, prejudice broke down to the extent that the relative lived with them at times. These accounts suggested the realisation of a common humanity, which is explored in the next theme.

Being *Kiwi*

Being *Kiwi* has three subthemes: *Ngāti Kiwi*, intermarriage, and mutual respect. *Ngāti* denotes a tribe comprised of sub tribes who are descended from, and align under, the name of that tribe. *Kiwi* is the generic colloquial term used for all citizens of Aotearoa NZ. The phrase *Ngāti Kiwi* therefore constructs an image of New Zealanders of different ethnicities and cultures uniting and functioning as one tribe, without inter-racial prejudice, as in Sharlee's excerpt below.

> Sharlee*: me I think that you just have to say look why the racism against people you know? you know we're all one people,* Kiwis*. Just because we've got different colour doesn't mean* nothing *at least that's the way I look at it.*

Sharlee reasons that if New Zealanders see themselves as *Kiwi*, phenotype will become irrelevant, and racism will be dismissed as illogical. Hose reiterates the construction of *Kiwi* as a unifying force.

> Hose*: we're all* Kiwis*. And I find sometimes that the whole Māori thing sometimes with Hone Harawira 'we're Māori and not Pākehā' that creates a divide as well. I think we need to be…going* together *you know?*

Hose refers to a Māori leader whom he feels leans towards separatism and division based on ethnicity. Separatism was commonly implied by participants to be racist, and Hose, although proud

of his *Māori* heritage, here constructs *Kiwi* as the term which will remind New Zealanders that they are not racially opposed, but one nation.

When asked how to reduce racism Rauri amplifies this by specifying the inclusion of all ethnicities, a matter he constructs as achievable through resolving the need to belong. In the excerpt below he recounts explaining *Ngāti Kiwi* to a relative of English descent who had expressed a lack of belonging.

> Rauri*: I think that he was* quite upset *about that side of it and I said well brother! What we are, what we* can *do if you feel you haven't got a tribe and you'd like one, how about* Ngāti Kiwi*? That will do. And in the end, I think we'll move towards that. It's* not *going to be smooth, it* hasn't *been smooth so far, a smooth and bump free ride…but I think we will get to the point when we don't sort of think 'oh I only come from England' or China or something, I don't truly* belong *here.*

Ngāti Kiwi is constructed here as a means by which all ethnicities can feel part of the ingroup. The English relative is compelled to rethink his allegiance to England 'I only come from England' and to make a conscious decision to become a *Kiwi*, if he wishes to have a sense of belonging. It is a construction which takes agentic charge of a situation in which Māori may currently be considered a minority, and targeted for this reason; Māori position themselves as offering the chance to become part of a united team, in which people are not separated by ethnic backgrounds. Notably, Rauri goes beyond biculturalism to implicitly define *Ngāti Kiwi* as inclusive and multicultural.

Racist separatism was particularly denounced by those participants with Pākehā partners, a situation common in Aotearoa NZ, where approximately half of Māori have Pākehā partners (Callister, Didham & Potter, 2007). Hose, whose wife is Pākehā, contested the biological or genetic basis of racism by saying there were no pure blooded Māori left, and talking about a melting pot. Rauri, whose partner is Pākehā, warrants voice on the topic by quoting Whina Cooper, a highly respected Māori leader (1895-1994).

> *Rauri: Well Whina Cooper she said the quickest way to get rid of the divisions is by* marrying *um* marrying the dividers*, or something like that, and* getting as many children *as possible, because then the divisions* have *to drop because then they're your own damn family (laughs)*

Rauri's assumption is that the children of such unions will not be discriminated against because they belong to both groups. Others such as Kahu construct the children of such unions as "interracial" and "not easily influenced" or targeted by racism. Inap talks about prejudice being confounded by a "watering down" of differences, with intermarriage "breaking down prejudice" because of the interculturality and unique hybridism.

Mutual respect was constructed as a proviso against a tension voiced alongside *Ngāti Kiwi*, the fear that under this umbrella, Māori culture would become increasingly marginalised. Mutual respect involved each group's continued culture, acknowledged equality of cultures, parallel regard for differences, shared experience, and resultant mutual benefit. Pania's excerpt establishes Māori expectation that in a non-racist society, this should be automatic.

> Pania*: The solution for New Zealand…it's to* stop *being negative (laughs) to have some* respect *and appreciate one another, instead of just trying to be the dominant person.*

Pania's reference to not being "the dominant person" is a reference to what she perceives as Pākehā assumptions of superiority (Pack et al, 2015a). Coming from a Māori perspective, this is contrary to the respected Māori value of being humble and respectful of others. Her message is not only one mutual respect but also ensuing mutual benefit, as below.

> Inap*: I learnt a lot living with Pākehā people they taught us things about blue cheese*
>
> Sylvia *(laughs)*
>
> Inap: *and beef stroganoff*
>
> Sylvia*: oh yes yum*
>
> Inap*: and we taught them things about pork bones and* pūhā *(laughs)*

In the atmosphere of mutual respect and exchange constructed here, ideally Māori and Pākehā live interactively, retaining and sharing aspects of their culture which are capable of increasing the quality of life for both. Although acculturation frequently refers to the process by which a marginalised culture absorbs mainstream values and customs, some participants constructed a reverse acculturation they had observed in which non-Māori acquired Māori tattoos, performed the haka, and used common Māori words.

When asked their perspective on racism in the future, participants were without exception optimistic. Although they talked of racist incidents and structural racism as still occurring today, the past was seen as worse than the present and this in turn was constructed as a trend of on-going improvement in race relations. Older participants recalled being beaten in school for speaking the Māori language in the 1940s, denied permission to drink in certain pubs or sit in buses and certain parts of theatres in the 1950s, openly turned down for accommodation or employment in the 1960s and 70s, and having fewer Māori news presenters and no Māori television before the 21st century, but these things have changed. There was an assumption that most Pākehā wanted to get on with Māori (Pack et al, 2015b) and things would continue to improve. Rauri sums up:

> Rauri*: I* think *it's going to come about naturally anyhow. I think we're just going to we're going to* soak in being *New Zealanders.*

Discussion and Conclusion

This study explored suggestions for reducing racism against Māori by focusing on the views of Māori targets of racism and their partners. It contributes to a growing area of research that has the potential to shed new light on current understandings due to the exceptional motivation of targets to analyse and contextualise their experiences (Swim & Stangor, 1998). In the first of the themes discussed, participants constructed institutional or structural racism as highly prevalent (Pack et al, 2015a) a view consistent with other research (Came, 2014). Participants did not see

any easy or direct solutions. They noted that power imbalances in the workplace allowed Pākehā in positions of authority to minimize complaints and circumvent recourse to an apparently complex and stressful redress system, which suggests the need for the system's revision. Racism evident in the over-policing and unjustifiably high rate of incarceration of Māori led to participants calling for greater numbers of Māori police, judges and justice workers. This echoes the concerns and solutions voiced by Māori currently working within the justice system (Bootham, 2015; Thomas, 2014). Participants did not discuss the possibility of a Māori justice system running parallel to the existing system, a solution proposed by the Green Party in 2009 and the subject of on-going discussion and debate (Perret, 2013; Quince, 2007).

Participants emphasised the importance of anti-racism teaching and Treaty training (Simmons, Mafile'o, Webster, Jakobs & Thomas, 2008), noting there was no in-depth study of the Treaty. They also noted the omission of accounts showing Māori perspectives in history curricula. Thus the educational system was constructed as a post-colonial Pākehā power structure wherein the equality inherent in the Treaty is sidelined, and Māori histories marginalised. Historical traumas are well known and alive in the psychological life of all iwi today, and could be taught by modern historians and considered collectively by psychologists as a part of the 'lived experience' of Māori in Aotearoa. Participants also suggested that teachers dedicate time to discuss racism against Māori openly with a view to its reduction. Their belief in the power of teachers to challenge racism is backed by studies which provide evidence that teaching non-racist concepts to students can be successful (Husband, 2012; Santas, 2000). Teachers could also counter negative media representation by encouraging knowledge of the culturally rich pre-European lives of Māori, their subsequent resilience and unrestrained voluntary sacrifice during the Great War and World War Two, and the many positive achievements of prominent Māori today. Participants also called for the need to teach cultural expectations in a way which allowed Māori and Pākehā to intermingle with mutual appreciation, empathy and understanding. This attention to cultural norms has relevance for all professionals, particularly those working in the human services.

The participants' view that greater integration could contribute to addressing racism resonates with the four criteria required for Allport's (1958) contact hypothesis: equal status, common goals or cooperative activity, acquaintance potential in terms of time and availability, and the support of local authorities or institutions. These criteria were all mentioned by participants. In terms of equal status, the participants' demand for mutual respect, particularly under the Treaty, confers equal status. Common goals in successful cooperative activities were also suggested to be beneficial. Acquaintance potential in terms of time and availability was evident in accounts given of Pākehā and Māori living adjacently in more or less equal numbers. The support of local authorities or institutions was noted by those who lived on Māori land which was under the authority of local elders, and those who talked of working together in organised groups. The successful relationships engendered in these groups was apparent in the integration theme. However entrenched structural factors must be considered here. Levels of inequality, shown by the bleak and negative statistics in areas such as education, justice, housing, health and employment, need to be addressed before overall equality can be realised. With regard to integrated housing, the participants drew their observations from their lived experience of voluntary integration and mutual bicultural respect rather than the inequal 'pepper potting' urbanization imposed by government following World War Two in an attempt to speed up the assimilation of Māori into Pākeha culture (Hill, 2012).

The participants' construction of *Ngāti Kiwi* as a solution was analogous to Dovidio and Gaertner's (2007) Common Ingroup Identity Model, in which induced re-categorisation of two groups as one new ingroup caused former outgroup members to be welcomed and valued as part of the ingroup. An advantage of this re-categorisation is that it eliminates the spectre of Māori being positioned as the 'other' (Hokowhitu, 2003), a positioning participants recounted as undesirable, and which increases prejudice (Tajfel, 1978). Countering this is the subtle racism noted in studies which show that the neoliberal Pākehā phrase 'we're all one people' can lead to the labelling of Māori as 'good' if they then adopt the majority culture and thinking, and 'bad' if they do not (McCreanor, 1997). Participants' desire for mutual respect, in terms of acknowledging and honouring the two separate cultures, was proposed to prevent this. Awareness and mutual regard would ensure the protection of Māori culture, needs and abilities, and promote interaction in the style of parallel partnership (New Zealand Psychological Society, 2002). Some studies however have indicated that this separation can re-emphasise the power of the dominant majority culture and remarginalise the minority (Johnson, 1996). There is also the question as to whether the theme of bicultural *Ngāti Kiwi* can survive an increasingly multicultural Aotearoa NZ, where a quarter of residents are overseas born, and Asians make up 11.8% of the population (Statistics NZ, 2013b). Consistent with Ward and Liu (2012), participants suggest that if all cultures are maintained and respected while participating in and contributing to the wider society, the core philosophical and historical concept of bicultural partnership can still be maintained.

From a research perspective and in terms of theoretical positioning for on-going Pākehā research conducted with Māori, the challenge to negotiate a way through Māori mistrust of Pākehā researchers and produce in depth quality data was made possible by using *Kaupapa Māori* principles (Smith, 1997). These provided a way through Pākehā paralysis (Tolich, 2002), and indicate a way in which other Pākehā researchers can receive valuable and refreshing understandings from a Māori perspective. Thus the social constructionist approach can allow Pākehā researchers to identify and share new perspectives. An important issue in this context is the possible influence of demand characteristics. Did participants subconsciously form opinions of what was required from the research, or the Pākehā interviewer, and frame their answers accordingly? Thirteen of the participants were well known to the interviewer, and their ability to speak

openly was engendered from previous discussions on the topic over the years. It is possible that the other eleven may have moderated their responses despite open efforts by the interviewer to privilege and honour their opinions. It is noted that five Pākehā participants gave similar responses to their Māori partners. More qualitative studies by Pākehā and Māori are needed to further investigate the views of Māori, whose embodied experience and perspectives must stand alongside Pākehā findings in terms of import and validity. Such studies have the potential to create new insights into the unique cultural context of Aotearoa NZ.

In conclusion, the views of participants on reducing the problem of racism were aligned with previous research. Attention was drawn to the need for change in institutions to prevent aversive and deliberate racism affecting the redress system and the decisions of those in power. Calls were also made for Māori police and judges to work with Māori. Educators were asked to teach the Treaty, race ethics, and a balanced historical viewpoint. Participants' constructions of groups in which Pākehā and Māori interacted closely without prejudice strongly echoed Allport's contact hypothesis, and the inclusive recategorisation *Ngāti Kiwi* spoke to the Common Ingroup Identity Model. Participants also alluded to the importance of Pākehā speaking out when witnessing racism, particularly in the classroom. This underscores the power of action oriented bystander language to reduce racism (Guerin, 2003; Mitchell, Every & Ranzijn, 2011). Where their perspectives diverge from existing studies is in the optimistic hypothesis that if the right conditions are met, all Pākehā and Māori will learn to live harmoniously, and racism rather than the targets will become marginalised.

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Appendix

Doing research with Māori and Pākehā participants; some generalised differences

Recruiting participants	
Pākehā	Māori
Participants don't need to know the researcher; a university sanction provides sufficient credibility	Participants need to know and trust the researcher before agreeing
Time to socialise is not expected	Researcher expected to spend time talking and eating with participant
Trust the academic process	Mistrust of Pākehā research
Researcher privilege expected and trusted within reason	Researcher privilege / hegemony suspected and needs to be discussed
An expectation that academic research would benefit 'society'	A desire for the research to benefit the lives of all Māori
Interviewing participants	
No physical contact	*Awhi* and/or *hongi* before and after the interview
English is the only language used	*Te reo* (Māori language) is sometimes used
No spiritual element	Prayer sometimes expected
Food or drink not mandatory	Food and drink required as part of Māori protocol
Koha an accepted part of university research procedure	*Koha* indicates an understanding of the principle of *tauutuutu* (reciprocity)
Uninterrupted setting	Mokopuna or relatives could arrive
Crisp timing with limits	Time not so important
Seldom stop the recorder	Stop the recorder if participant wants to discuss personal issues
Responses more focused	Larger holistic responses
Unemotional	Sometimes emotional
Interviewer not expected to offer comment	Interviewer's empathy and opinion enquired about and expected
A quick sign off of transcripts	Delay getting sign off
Interviewer could remain a 'stranger'	Interview the start of a relationship and a connection

Evaluation of the Factor Structure of the Adult Manifest Anxiety Scale – Elderly Version (AMAS-E) in Community Dwelling Older Adult New Zealanders

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Background: The measurement of anxiety in older adults is problematic due to insufficient evidence of content and discriminant validity for existing anxiety measures used with older adult populations. The Adult Manifest Anxiety Scale – Elderly Version (AMAS-E) is a measure of anxiety developed specifically for older adults. However, there has been limited psychometric data published to enable clinicians to evaluate its appropriateness for older adult populations. This study provides information on the validity and clinical utility of the AMAS-E within a New Zealand population.

Method: 203 community dwelling older adult New Zealanders responded. Three competing models were trialled using confirmatory factor analysis. Convergent and discriminant validity were evaluated between the AMAS-E and the Hospital Anxiety and Depression Scale (HADS).

Results: Variable internal consistency was observed for the subscales of the AMAS-E. Reasonable fit was observed for both the higher-order and correlated AMAS-E models. However the Lie subscale showed no significant relationship with the other factors, and consequently was removed. Model fit worsened, however the model was retained as it was more theoretically plausible and justifiable statistically. Correlations between the AMAS-E and the HADS revealed moderate convergent but poor discriminant validity.

Conclusion: The factor structure of the AMAS-E was not strongly supported. The observed limited validity of this anxiety measure for older adults in its present form, suggests the need for a revision and its clinical use is cautioned.

Keywords: Psychometric Assessment, Anxiety, Depression, AMAS-E

Introduction

Anxiety in older adults is a phenomenon that has gained increasing empirical attention. Early investigators in this field asserted that the measurement of anxiety in older adults using the psychometric measures available was problematic due to (1) a lack of construct validity; the field did not have a clear empirical understanding of the features of anxiety in older adults, (2) a lack of psychometric measures designed specifically for older adults – e.g. the inclusion of items of low relevance for older people and a high potential overlap with measuring medical symptoms, and (3) a lack of normative information for existing psychometric measures when used in older adult populations (Stanley & Beck, 2000). The research community responded in two ways, either by developing new measures of anxiety specifically for older adults (e.g the Geriatric Anxiety Scale (Pachana et al., 2007), or by validating existing anxiety measures in older adult populations (e.g. the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970). As yet, no 'gold standard' anxiety measure has been identified for use with older-adult clients.

Given that there has been limited research into the nature of anxiety in older adults, the evaluation of the construct validity of measures is problematic as essential content has not been fully explored. Some authors suggest that measures for older adults should: (a) avoid items with worry content (e.g. topics) as they may be less useful in predicting worry severity when compared to worry content (Diefenbach, Stanley, & Beck, 2001); (b) avoid items which overlap with medical conditions (Wolitzky-Taylor, Castriotta, Lenze, Stanley, & Craske, 2010); (c) formats should be age-appropriate for older people with sensory and or cognitive impairments; (d) include developmentally appropriate themes e.g. avoid topics relating to work which may not be relevant to the retired; (e) be sensitive to functional impairment; (f) include sleep disturbances which are common in older adults with generalised anxiety disorder (Wetherell, Le Roux, & Gatz, 2003).

The Adult Manifest Anxiety Scale-Elderly Version (AMAS-E) (Lowe & Reynolds, 2000) is a 44 item measure of *chronic manifest anxiety* developed for older adults in response to concerns that the nature of anxiety is different in older adults when compared to younger adults. Exploratory factor analysis revealed a three-factor structure: fear of aging – assessing a preoccupation with age-related decline; worry/oversensitivity – reflecting excessive worry; and physiological anxiety – evaluating physical manifestations of anxiety. A 'lie' scale intended to contribute to validity and measure social desirability was added at a later stage, (Lowe & Reynolds, 2006), however the theoretical justification for this was not presented by the authors. The four factors of the AMAS-E all were hypothesised to

contribute to a higher order factor of general anxiety/total anxiety (Lowe & Reynolds, 2006). Confirmatory factor analytic (CFA) studies of the AMAS-E have not been published. Psychometric studies of the AMAS-E have shown good reliability for the total anxiety (α = .90 - .92), worry / oversensitivity (α = .88 - .91), fear of aging (α = .78 - .85), physiological (α = .69 - .71), and lie scales (α = .73 - .79) (Lowe & Reynolds, 2000, 2006; Reynolds, Richmond, & Lowe, 2003).

Convergent validity analysis of the AMAS-E has been undertaken using the State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1970) and the Geriatric Anxiety Scale (GAS) (Segal, June, Payne, Coolidge, & Yochim, 2010). Low to moderate correlations were reported between the anxiety subscales of the AMAS-E and the STAI-S (.24 and .39), and between the AMAS-E and STAI-T (.31 and .65) (Lowe & Reynolds, 2006). Because the STAI had a large amount of variance when measuring anxiety in older adults, it was unclear whether the correlation observed between these measures is due to shared variance unrelated to the construct of anxiety. Moderate correlations have been observed between the GAS total and AMAS-E total (.77), however subscale performance of the AMAS-E varied when correlated with the GAS total (.45 fear of aging, .65 physiological, and .76 worry) (Segal et al., 2010). This suggests more investigation is needed on the performance of the AMAS-E in older adult populations.

Overview of Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a form of structural equation modelling that takes a hypothesis testing approach to the analysis of relationships between observed and unobserved variables. CFA is useful when evaluating the performance of psychometric measures as it enables the evaluation of the magnitude and direction of the relationship between items (observed variables), and subscales (factors). It also predicts how well these hypothesised models will perform in the population (Byrne, 2001).

Study Aims

The present study intends to evaluate the psychometric properties including the factor structure of the AMAS-E in a sample of community dwelling older adult New Zealanders.

Methods

Ethical approval was obtained through Massey University Human Ethics Committee Northern.

Participants

Older adults aged 60 to 80 (M = 68, SD =7.2) were recruited from older adults' community organisations in the North Auckland region, New Zealand. The organisations provided a short verbal presentation slot for the researcher, where the purpose of the research was explained. This was followed by a question and answer session. A second group of participants were recruited through indicating on a previous research study that they would be willing to be contacted for participation in future related research.

Age 60 was chosen to capture the cohort of baby boomers entering older adulthood. Cognitive screening was not practical as part of the study therefore participants who were aged over 80 or residing in rest-homes or hospitals were excluded due to the base rates of significant cognitive impairment in these groups. Of participants who self-selected into the study, 203 participants responded (83% return rate; male n = 73; female n = 117; not specified n = 13) of New Zealand European decent (Pakeha; n = 122); other European (n = 60); Maori (n = 4) and not specified (n =17). 11% of participants reported a psychiatric history, of those 6% reported depression and 6% reported anxiety. The mean anxiety scores on the AMAS-E were in the "normal" range based on the recommended cut-offs (Lowe & Reynolds, 2006). As this study had missing demographic data, an independent samples t-test was conducted to determine if there was a significant difference in scores on the AMAS-E between those who returned demographic information and those who did not. No significant difference was observed between those who had missing demographic information (M = 48, SD = 7.3) and those who did not (M = 46.8, SD = 7.8) $t(167) = -1.29$, $p > .05$.

Table 1.
Demographic information of participants

	N	%
Male	73	36
Female	117	57
Not Specified	13	7
Ethnicity		
New Zealand European	122	61
Other European	60	30
Maori	4	2
Not Specified	17	7
Highest Level Education		
Year 9 or 10	9	4.4
Year 11 or 12	25	12.3
University entrance	13	6.4
Tertiary	25	12.3
Post graduate	8	3.9
Not reported/ missing	120	59
Psychiatric History		
Any psychiatric history	22	10.8
Diagnosis of depression	13	6.4
Diagnosis of anxiety	5	5.7
Not reported/not elicited	112	55
Total participants	**203**	

Measure

Adult Manifest Anxiety Scale-Elderly version (AMAS-E)

The AMAS-E is a 44 item measure of anxiety in the elderly. Items on the AMAS-E are divided into four subscales: Worry/Oversensitivity (23 items); Physiological anxiety (7 items); Fear of Aging (7 items); and Lie (7 items). Response choices are a dichotomous yes/no format and are designed to assess cognitive, physiological, and behavioural aspects of anxiety. An example of a question is item 22 from the worry scale "*I worry a lot of the time*". The Lie scale is intended to evaluate concealment of anxiety through social desirability factors which are considered problematic for older adult populations (Reynolds et al., 2003).

Hospital Anxiety and Depression Scale (HADS)

The HADS (Zigmond & Snaith, 1983) is a 14 item self-report measure of anxiety and depression, with items divided equally between both scales. Clients are asked to underline the

reply which is closest to the way they are feeling. Each item has a different range of responses, some of which are specifically worded to reflect the item stem. The HADS was chosen as it has evidence of reliability and validity for use with older adults, and has few items that overlap with medical symptoms (Roberts, Fletcher, & Merrick, 2014). As the HADS measures both anxiety and depression it can provide evidence of convergent and discriminant validity for the AMAS-E.

Procedure

Community organisation members who received a short presentation on the nature of the research, self-selected into the study through collecting set of questionnaires, information sheet, and consent form from the researcher afterwards. A second group of participants received this package of questionnaires following their indication on a partner study that they would be interested in completing further research. Participants also completed the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983); and a third anxiety measure undergoing development as part of a larger study evaluating assessment measures of anxiety in older adults. The order of measures was randomised to reduce order and fatigue effects.

Participants completed these measures independently at home and returned them by prepaid mail to the researcher. The order of questionnaires was manually changed during collation as per table 2, however participants could complete these in their own time and were not given instructions on completing them in order.

Table 2.
Order of questionnaires for participants

Package 1	Package 2	Package 3
Information Sheet	Information Sheet	Information Sheet
Consent form	Consent form	Consent form
HADS	Trial measure	AMAS-E
AMAS-E	HADS	Trial Measure
Trial measure	AMAS-E	HADS

Hypothesised Factor Structure of the AMAS-E

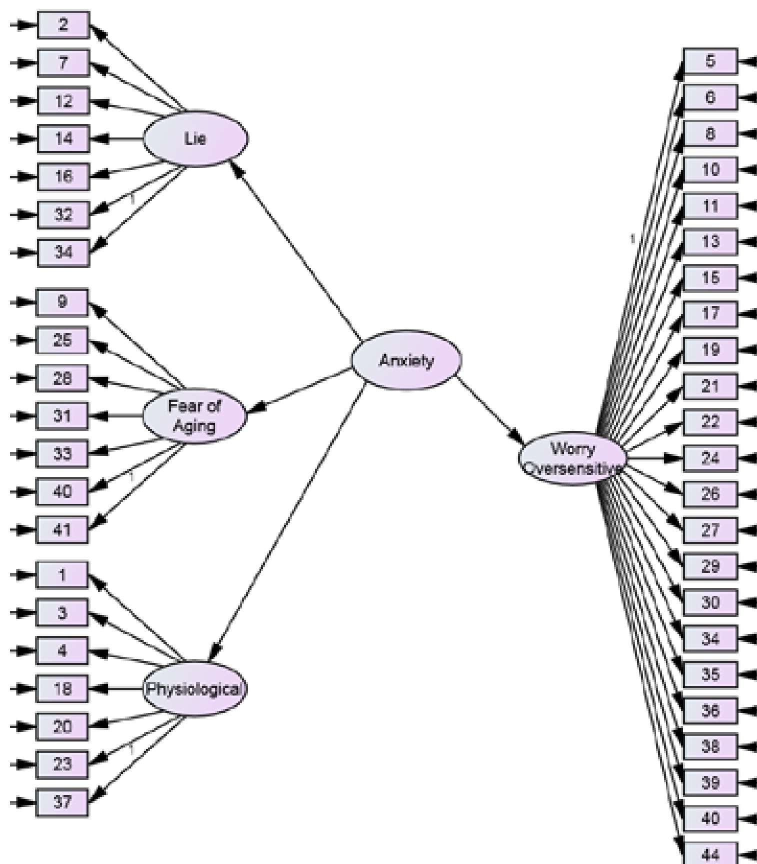

Figure 1.
AMAS-E as a higher-order model with the complete item set (AMAS1)

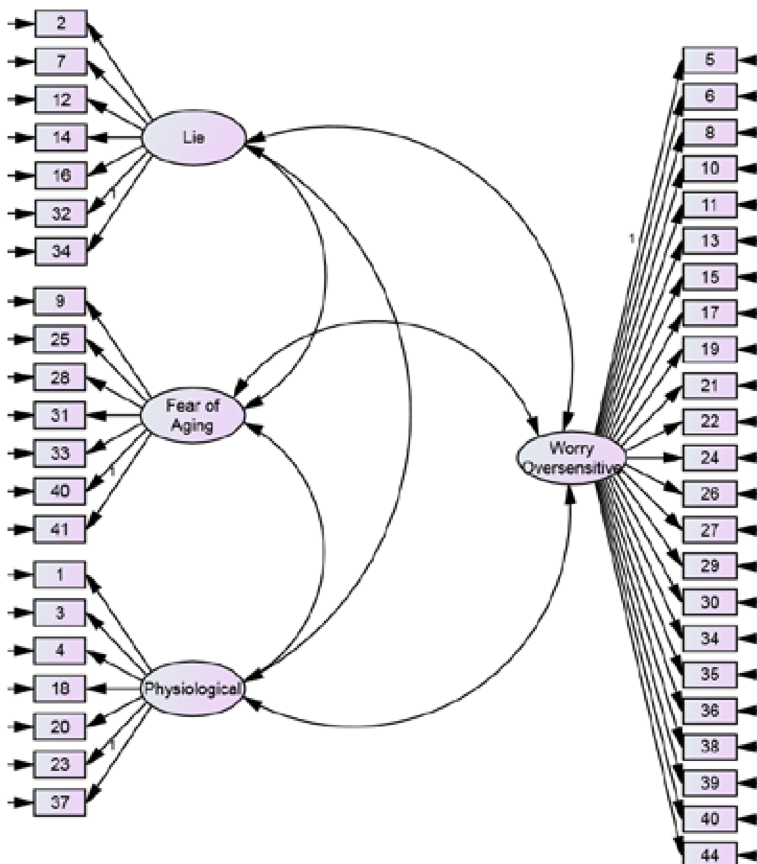

Figure 2.
Correlated AMAS-E model (AMAS2)

AMAS1:

A four factor structure represented by a higher order factor of latent anxiety was created. The complete item set was used and the original item placement on subscales (factors) was retained (Reynolds et al., 2003), see Figure 1.

AMAS2:

The same four factors and item placement as AMAS1 were predicted to be correlated, see Figure 2.

AMAS3:

A revised correlated model with the lie scale removed.

Statistical Analysis

Item total correlations, internal consistency, and convergent validity were undertaken using SPSS and AMOS version 23.

Sample Size

Structural equation modelling (SEM) requires large sample sizes to generate a level of power necessary for the analysis and ensure accuracy of fit indices and parameter estimates, particularly when the model is complex (MacCallum, Widaman, Zhang, & Hong, 1999). A null hypothesis was specified that the root mean squared error of approximation (RMSEA) was 0.05 or less (i.e. close fit) and an alternative hypothesis that the RMSEA was 0.08 (mediocre fit). The power analysis for the test of close fit of the RMSEA to the population with the present sample of 203 participants and model complexity (898 Df; $p < .05$) yielded power of >.99% (Preacher & Coffman, 2006).

Missing Data

Missing data within this sample was small and only accounted for 6%. A significant Little's test further suggested that data were missing completely at random (MCAR) and therefore the use of the maximum likelihood method in SEM was appropriate (T. A Brown, 2006). Pairwise exclusion was used in SPSS where available.

Evaluation of Model Fit

The fit statistics chosen for this study were sensitive to model misspecification and provided information pertaining to the fit of a measurement model within the sample and an estimate of the model's fit within the population (Beck, Brown, Steer, & Weissman, 1991). Goodness of fit was assessed using the X2 test of exact fit, the comparative-fit index (CFI), and the Tucker-Lewis index (TLI). Both the CFI and TLI are indicators of model fit derived from a comparison between the hypothesised model and a null model in which all observed variables are uncorrelated. Both indices yield a coefficient with values ranging from 0 to 1, with values greater than .90 suggesting adequate fit, and those exceeding .95 suggest the model is a good fit (Hu & Bentler, 1998). The CFI and TLI are not systematically related to sample size (Fan, Thompson, & Wang, 1999), and the TLI appropriately rewards model parsimony (Cheung & Rensvold, 2002). The root mean square error of approximation (RMSEA) was also used as an indicator of how well the model may hold in the population if the covariance matrix of the population was available. A RMSEA of <.05 is considered a close fit, .05 -.08 indicates reasonable fit, .08 to .10 indicate mediocre fit, and >.1 indicate poor fit (Hu & Bentler, 1998). Unlike the CFI and TLI, the RMSEA is not affected by model complexity (Cheung & Rensvold, 2002) and is minimally affected by sample size (Fan et al., 1999).

Results

Internal consistency

The total anxiety scale of the AMAS-E showed good internal consistency ($\alpha = .88$), however the internal consistency of the subscales was variable (see Table 3.).

The physiological subscale showed low internal consistency ($\alpha = 0.52$), whereas the lie ($\alpha = 0.71$) and worry/oversensitivity ($\alpha = 0.88$) and the fear of aging ($\alpha = 0.76$) subscales showed good levels of internal consistency.

Normality of Data

Evaluation of total scores on the AMAS-E showed data were marginally negatively skewed (-.302) and slightly kurtotic (1.429), and the Kolmogorov-Smirnov test was significant. However, as item level analysis suggested the majority of item responses were normally distributed, and as skew and kurtosis were minimal, the use of parametric statistics can be justified.

Convergent Validity

Moderate positive correlations were observed between the HADS anxiety subscale and both the AMAS-E total and AMAS-E worry/oversensitivity subscales (.62 and .71; $p < .01$ respectively; see Table 4.). The fear of ageing subscale and the physiological subscales showed weak relationships with the HADS anxiety total subscale (.42 and .35 respectively; $p < .01$). A strong positive correlation was observed between the worry/oversensitivity subscale and the AMAS-E total score (.90; $p < .01$). The lie scale showed little relationship with any subscale the HADS or AMAS-E (-.07 to .05; $p > .05$).

Table 3.

Descriptive Statistics and Internal Consistency Coefficients for the AMAS-E

Subscale	N	M	SD	α	AMAS-E Interpretation of anxiety level
Worry/Oversensitivity	167	6.36	5.40	.88	Normal
Physiological Anxiety	184	2.00	1.99	.52	Normal
Fear of Aging	183	2.61	2.13	.76	Normal
Lie	180	2.61	1.98	.71	Normal
Total Anxiety	160	10.44	7.53	.88	Normal

Table 4

Correlation Matrix Showing Convergent Validity between the AMAS-E and HADS

	HADS		AMAS-E				
	Anxiety	Depression	Total	Worry/Oversensitivity	Physiological	Fear of Aging	Lie
HADS							
Anxiety	1						
Depression	.56*	1					
AMAS							
Total	.56*	.30*	1				
Worry/ Oversensitivity	.63*	.31*	.93*	1			
Physiological	.25*	.26*	.70*	.52*	1		
Fear of aging	.40*	.23*	.73*	.56*	.35*	1	
Lie	.05	-.01	.14	.11	.12	.21*	1

N.B: * p <.01

Confirmatory Factor Analysis

The AMAS1 and AMAS2 models both exhibited similar fit (see Table 5.). Reasonable RMSEA fit indices but low TLI and CFI were observed for both models. A major issue with both models was the low relationship between the Lie scale and the other subscales. All correlations for the Lie scale with other scale were either negative or virtually zero. The latent factor correlations for the AMAS2 ranged between r=-.004 to 0.52. On the basis of these low correlations and the low factor loading in AMAS1, a third model (AMAS3) was specified with the Lie scale being removed. (Table 3). Even with the Lie scale removed the latent factor correlations on AMAS2 between the remaining factors did not change. The removal of the Lie scale did not improve the model fit, but from purely a statistical and theoretical point its removal was warranted. For the AMAS1 and AMAS 2 the average factor loading was $\lambda = 0.51$ and for AMAS 3 the average loading was $\lambda = 0.49$.

Discussion

The internal consistency of AMAS-E total as measured by Cronbach's α was good, however variability was observed at subscale level. The Worry/ Oversensitivity, Fear of Aging, and Lie subscales showed good internal consistency, however poor internal consistency was observed for the Physiological Anxiety subscale. The homogeneity of some items may have overinflated some of the Cronbach's α on the AMAS-E. The reliability of the AMAS-E in older adult populations is good and demonstrates that true score estimation for three of the four factors is attainable.

Factor structure

The factor structure reported by Lowe and Reynolds (2000, 2006) was not strongly supported in this sample. The specification of AMAS1 and AMAS2 did not provide a clear picture of whether the AMAS-E is best explained by a higher order model (AMAS1) or a fully correlated model (AMAS2). In essence, the presence of moderate to strong factor loadings at the higher order (AMAS1; Table 6) are indicative of the strength of the correlations at the lower order (AMAS2; Table 7). On the basis of the seemingly contradictory fit statistics e.g. the RMSEA suggested acceptable fit, and low CFI and TLI suggested poorer fit, one might reject both of these models. However the divergence in the fit statistics might be explained by the magnitude of the factor loadings in each model. The trialled models found moderate factor loadings. According to Heene, Hilbert, Ziegler and Buhner, (2011) lower fit indices may be expected when there are low factor loadings in a specified model. Thus there can be divergence between the low RMSEA (good fit) and low CFI (poor fit).

Approximately half of the items on the AMAS-E showed weak relationships with their respective factors, or were problematic for other reasons. For example: (a) repetition of content, e.g. three of the seven items on the physiological scale pertained to tiredness, and three of seven items on the fear of ageing subscale related to dementia; (b) difficult wording for a dichotomous response format; (c) poor relationship with the respective construct; (d) inclusion of worry topics; (e) inclusion of topics relating to work. A second group were inappropriately placed, e.g. physiological sensations (e.g. tension, restlessness, nervous energy, and keyed up) on the worry/oversensitivity subscale rather than on the physiological scale. A number of older adults included comments to the researcher about their problems constraining answers into a dichotomous format. Furthermore, dichotomous formats tend to cause an acquiescence bias (Saris, Revilla, Krosnick, & Shaeffer, 2010) and this could be exacerbated in older adults who may present with a degree of cognitive impairment.

Removal of the Lie Scale

One important finding from this study is that the inclusion of the Lie scale in the AMAS-E is problematic on the theoretical as well as statistical grounds. From a theoretical perspective the Lie scale includes items on social desirability

Table 5.

Goodness of Fit Indices for Competing Structural Models of the AMAS-E

Model	Df	X^2	TLI	CFI	RMSEA (90%CI)	Mean Factor Loading
AMAS 1	898	1546.11**	.72	.75	.059 (.054 - .064)	.51
AMAS 2	896	1545.69**	.72	.75	.059 (.054 - .064)	.51
AMAS 3	626	1209.99**	.70	.73	.067 (.062 - .073)	.49

AMAS1 NB: All factor loadings were significant except for A20, between Lie and Latent Anxiety, furthermore the second order factor loading was .08 for lie and latent anxiety. On the basis of this we correlated the factors and observed that the relationship between the anxiety factors and the lie scale was negative to low, that we removed the lie scale entirely.

Table 6.

Factor loadings between subscales of the AMAS1 and the hypothesised higher order factor of latent anxiety

	Latent Anxiety
Worry/Oversensitivity	1.04
Physiological Anxiety	.50
Fear of Aging	.44.
Lie	.08

Table 7.

Correlations between factors on AMAS2 model

	Worry/Oversensitivity	Physiological Anxiety	Fear of Aging	Lie
Worry/Oversensitivity	1			
Physiological Anxiety	.52 (.53)	1		
Fear of Aging	.46 (.46)	.22 (.22)	1	
Lie	.08	-.00	.06	1

Values in brackets are the latent correlations with the Lie scale removed

(e.g. I am always kind) that represent age-appropriate social values, and do not elicit responses on suppression of anxiety. There is no evidence to suggest that this is causative of a low anxiety score, for example that people high on this scale would then conceal their anxiety. The inclusion of the Lie scale can not be justified on statistical grounds either, given the low second-order loading and the extremely low latent factor correlations with other subscales. Whilst the removal of the Lie scale did not increase the fit of the model, it is a more theoretically justified structure that is worthy of further examination.

Convergent validity

The worry/oversensitivity subscale accounted for the most variance in scores, and had a very strong significant relationship with the total anxiety score (.93). It was also the longest subscale on the AMAS-E which may have overinflated the relationship with total anxiety compared to the other subscales. The physiological anxiety and fear of aging subscales had moderate significant relationships with the total anxiety scores (.70 and .73 respectively). The lie scale did not have a significant relationship with observed scores on the AMAS-E and was considered redundant.

The AMAS-E total score showed moderate convergence with the HADS anxiety (.56) and a weak relationship with the HADS depression scales (.30). AMAS-E worry/oversensitivity subscale showed a stronger relationship to the HADS anxiety subscale compared to the AMAS-E total score (.63 and .56 respectively) suggesting this may be a more effective measure of anxiety than the total score. The physiological anxiety and fear of aging subscales showed the weakest relationships with the HADS anxiety scale (.35 and .40 respectively), and interestingly the physiological subscale showed a nearly identical relationship to depression when compared to anxiety (.26 and .25 respectively). Potentially the high number of fatigue symptoms may have contributed to this. The lie scale had no relationship to anxiety or depression scores on the HADS.

Although the overlap between measures of anxiety and depression has been well documented (T. A. Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Clark, Steer, & Beck, 1994; Wolitzky-Taylor et al., 2010), in this sample the HADS depression subscales showed a stronger relationship with the physiological anxiety subscale on the AMAS-E compared to the HADS anxiety subscale. This is indicative of poor discriminant validity of the AMAS-E, as somatic anxiety is considered to reflect pure anxiety within the tripartite model rather than the common negative affect factor (Clark et al., 1994).

Limitations

The choice to exclude older adults aged over 80 means that the scale may not confidently be used in this population. Furthermore, the use of cognitive screening would have enabled further information on the validity of the scale in older adults, and potentially enable the explanation of variance in responses and evaluate the applicability of the AMAS-E to people with cognitive impairment. The sampled organisations consisted of predominantly New Zealand European women of middle to high socioeconomic status who were involved in community groups that valued active engagement in the community. Consequently the generalisability of findings to ethnic minority groups including Maori, and people with lower socioeconomic status was limited. Furthermore, the difference between the factor structure of responses on the AMAS-E between men and women was beyond the scope of the study due to the small sample size.

Summary of findings for the AMAS-E

The factor structure of the AMAS-E previously reported by Lowe and Reynolds (2000; 2006) was not strongly supported in an older adult sample, and a revision of the AMAS-E to remove the Lie scale while not improving model fit provides a more theoretically defensible measure. The removal of underperforming items may lead to an unacceptably small pool of items and consequent construct underrepresentation. In summary, the present study found limited validity evidence for the AMAS-E for older adults in its present format, and as such the use of the AMAS-E in older adult cohorts is cautioned.

Conflict of interest declaration:

None

Description of authors' roles

M. Roberts designed the study, collected and analysed the data, and wrote the paper. P. Merrick supervised the overall study and supported interpretation of the results and contributed to writing the paper. R. Fletcher contributed to the design of the study, choice and interpretation of statistical analysis.

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