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Editorial

John Fitzgerald

The successful functioning of the Journal depends on a surprisingly large group of people. While the editor is the fairly 'public face' of the Journal there are people in the National Office who assist with communications (Helen Weststrate) and manuscript management (Vicki Hume). I am grateful to the members of the Society's National Executive and the journal's editorial board who provide much needed encouragement and advice. The Journal has been assisted by a number of reviewers over the last twelve months, sometimes more than once.

Lex McDonald
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Obtaining reviews for submitted manuscripts is the most difficult/frustrating part of the editing process, and I am grateful to those who volunteer their time to undertake this important task.

After eight years in the editing role this is my final issue. I am handing the position over to Prof Marc Wilson (Victoria University of Wellington). Prof Wilson is an excellent teacher and researcher, a first-class writer, and expert communicator of psychological knowledge. I know he is also a very busy man, in high demand both within his University and outside. To keep our journal strong we need to support it as a credible outlet for the broad range of research being undertaken around Aotearoa New Zealand, and work as a community to ensure the editor and editorial processes receive the support required.

Best wishes,

John Fitzgerald PhD
Massey University (Wellington campus)

Comorbidities Between Mental and Physical Health Problems: An Analysis of the New Zealand Health Survey data

Helen Lockett^{1,2}, Angela Jury³, Charito Tuason³, Jennifer Lai³, and David Fergusson⁴

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This study used New Zealand Health Survey (NZHS) data to understand the comorbidities between internalising disorders (anxiety, depression, and bipolar disorder) and long-term physical health conditions. The 2015/16 NZHS included 13,719 adults living in the community. Around 20% of participants self-reported having an internalising disorder sometime in their lifetime. Odd ratios (ORs) were adjusted for age, gender, ethnicity, and socioeconomic status. Having an internalising disorder increased the odds of stroke (adjusted OR = 2.26, $p < .001$), cardiovascular disease (adjusted OR = 1.79, $p < .001$), chronic pain (adjusted OR = 2.03, $p < .001$), arthritis (adjusted OR = 1.72, $p < .001$), asthma (adjusted OR = 1.63, $p < .001$), and high cholesterol (adjusted OR = 1.50, $p < .001$). Findings highlight the importance of routine screening and assessment of physical health conditions among people diagnosed with mental health problems, and vice versa.

Keywords: comorbidity; mental health; chronic health conditions; anxiety disorders; depression; bipolar disorder

It is well established that serious mental health problems are associated with a shortened life expectancy and greater likelihood of physical illnesses, such as respiratory diseases, diabetes, and cardiovascular disease (Baxter et al., 2016; Cunningham, Sarfati, Peterson, Stanley, & Collings, 2014; Galletly et al., 2016; Te Pou o te Whakaaro Nui, 2014). This is also the case for mild to moderate mental health problems, such as anxiety, depression, and bipolar disorder, which are commonly referred to as internalising disorders. Around 3 in 5 adults with mental health problems report having one or more long-term physical health problems (Australian Health Policy Collaboration, 2018; Druss & Walker, 2011). Longitudinal research indicates that depression increases the odds of developing cardiovascular disease (Charlson et al., 2013) and diabetes (Mezuk, Eaton, Albrecht, & Golden, 2008). Moreover, the risk of mortality related to cancer and cardiovascular disease is higher among people who have accessed mental health services (Cunningham et al., 2014). The estimated cost of premature mortality associated with comorbidities between serious mental problems and physical health (including opioid dependence) is NZ\$6.2 billion (Royal Australian and New Zealand College of Psychiatrists, 2016).

To address this issue regarding comorbidities and health inequity, New Zealand national policies were introduced in 2012 that identified the need to prioritise the physical health needs of people with experience of mental health problems and addiction. These policies include *Rising to the Challenge: The mental health and addiction service development plan 2012–2017* (Ministry of Health, 2012) and *Blueprint II: How things need to be* (Mental Health Commission, 2012). The analysis of national data is required to better inform clinical practice and monitor progress in addressing the comorbidities between mental and physical health conditions (Liu et al., 2017).

Currently, the availability of up-to-date national data on comorbidities between mental and physical health is limited. The most recent and comprehensive analysis of mental health problems, addiction, and physical health comorbidities in the population is *Te Rau Hinengaro: The New Zealand Mental Health Survey* (Oakley Browne, Wells, & Scott, 2006), which was undertaken more than 10 years ago. Results indicated that meeting the diagnostic criteria for an anxiety or mood disorder was associated with a higher risk of chronic pain, cardiovascular disease, high blood pressure, respiratory conditions, and diabetes compared to having no mental health problems (Oakley Browne et al., 2006). The study also showed around 1 in 4 people with a physical health problem experienced a mental health problem (including substance use problems) (Oakley Browne et al., 2006).

To address the need for up-to-date national data on comorbidities, the New Zealand Health Survey (NZHS) provides a potentially useful dataset worth further examination. The NZHS collects self-reported data each year on the lifetime prevalence of common mental health problems and physical health conditions from approximately 13,000 adults in the general population (Ministry of Health, 2016b). The potential of this dataset for monitoring the comorbidities between mental health and physical health conditions has not been explored to date.

Against this background, this analysis aimed to use data from the NZHS to examine the risk of long-term physical health conditions among adults with mental health problems, whilst taking into account sociodemographic factors. It was hypothesised that the NZHS data would demonstrate comorbidities consistent with the international literature.

Methods

Study design and setting

This investigation was carried out using data from the 2015/16 NZHS. The NZHS examined long-term physical health conditions (e.g., diabetes, cardiovascular disease, chronic pain, and high blood pressure), health status, healthcare utilisation, health risk and protective factors, and sociodemographic variables. The survey had a multi-stage, stratified, probability-proportional-to-size sampling design. The questionnaire was administered face-to-face with computer assistance to adults aged 15 years and over living in the community (Ministry of Health, 2016a). Data collection occurred between July 2015 and June 2016.

Ethical approval for the 2015/16 NZHS was granted by the New Zealand Health and Disability Multi-Region Ethics Committee. Te Pou o te Whakaaro Nui (Te Pou) was granted access to the NZHS data through the Statistics New Zealand Confidentialised Unit Record File (CURF) programme.

Measures

Measures from the 2015/16 NZHS were used in the analysis. The lifetime prevalence of common internalising disorders was indicated by people's self-report of ever being told by their doctor that they had depression, bipolar disorder (sometimes called manic depression), or an anxiety disorder (this includes panic attacks, phobia, post-traumatic stress disorder, and obsessive-compulsive disorder). People who self-reported having one or more of these mental health problems were identified as having an internalising disorder.

A total of eight long-term physical health conditions were examined. People were identified as having diabetes, stroke (excluding mini-strokes and transient ischaemic attacks), other cardiovascular disease (including ischaemic heart disease, heart failure, angina, and/or hospitalisation for heart attack), chronic pain, or arthritis (including rheumatoid arthritis and/or osteoarthritis) if they self-reported being diagnosed by a doctor with these conditions. People were classified as having asthma, high blood pressure (excluding pregnant women), or high blood cholesterol if they self-reported being diagnosed by a doctor and were currently taking medication or treatment for these conditions.

Statistical methods

In the first stage of the analysis, the number of people with and without internalising disorders was examined, along with weighted proportions (%), and population estimations. Sampling weights were applied in all analyses to account for the NZHS sampling design. This also ensured estimates calculated from the data were representative of the target population (Ministry of Health, 2016a). The sociodemographic characteristics of respondents with and without internalising disorders were examined using chi-square tests of association to determine if the two groups differed with respect to their gender, age, ethnicity, and socioeconomic status.

In the second stage of the analysis, chi-square tests were conducted to determine whether there was a significant association between each long-term physical health condition

and having an internalising disorder. Odds ratios (OR) were calculated through logistic regression analysis to examine the strength of the associations. An OR greater than one suggests a person with an internalising disorder has an increased likelihood of having a long-term physical health condition compared to a person without an internalising disorder.

Multiple logistic regression analyses were conducted to examine the extent to which having an internalising disorder increased the odds of having each long-term physical health condition whilst controlling for sociodemographic covariates. In the multiple logistic regression model, the independent variable was the lifetime prevalence of having an internalising disorder and the dependent variable was each long-term physical health condition. From this model, it was possible to obtain estimates of the covariate adjusted association (adjusted OR) between having an internalising disorder and a long-term physical health condition.

All analyses were performed using Stata version 12, which has appropriate procedures for incorporating the sampling weights used in the analysis.

Results

Internalising disorders

Out of the 13,719 NZHS respondents, 2,957 people reported having been diagnosed by a doctor, sometime in their life, as having anxiety, depression, and/or bipolar disorder. As shown in Table 1, people who reported having an internalising disorder sometime in their life were estimated to comprise 18.8% of adults in the general population, representing approximately 702,000 adults in New Zealand.

Table 1. Number of Adults in the 2015/16 New Zealand Health Survey (NZHS) with an Internalising Disorder

Internalising disorder	Number of adults	Weighted (%) ^a	Estimated number of adults in the NZ population
Depression	2,455	15.4	575,000
Anxiety	1,477	9.5	354,000
Bipolar	168	0.9	35,400
Any disorder	2,957 ^b	18.8	702,000
None	10,762	81.2	3,026,000

Note. NZ = New Zealand. ^aSampling weights were used in the analysis to account for the sampling design of the New Zealand Health Survey. ^bPeople diagnosed with more than one internalising disorder were only counted

Sociodemographic characteristics

The sample was categorised into two comparison groups: adults with an internalising disorder and adults without. The sociodemographic characteristics of the groups are summarised in Table 2. The groups significantly differed in the proportion of females ($p < .001$), Europeans ($p < .001$), Pasifika peoples ($p < .001$), Asian peoples ($p < .001$), and mean age ($p < .001$).

Table 2. Sociodemographic Characteristics of Adults in the 2015/16 New Zealand Health Survey (N=13,719)

Sociodemographic characteristic	Adults with an internalising disorder ^a	Adults without an internalising disorder ^a	p ^b
<i>Proportion (%)</i>			
Female	64.3	48.4	<.001
Māori	13.6	12.8	.273 ns
Pasifika	2.9	6.7	<.001
Asian	3.9	14.0	<.001
European/Other	89.3	74.0	<.001
<i>Means</i>			
NZDep2013 ^c	5.6	5.5	.251 ns
Age (years)	46.9	44.9	<.001

Note. ^aThese columns presents the weighted proportion of adults with the sociodemographic characteristics in the two groups. ^bChi-square tests were used to assess if there was a significant association between the sociodemographic measure and the internalising disorder group. ^cNZDep2013 refers to the New Zealand Index of Deprivation 2013.

Long-term physical health conditions

Internalising disorders were associated with higher odds of each long-term physical health condition, with the exception of diabetes and high blood pressure. The findings show people with a lifetime prevalence of an internalising disorder were twice as likely to experience chronic pain compared to people without an internalising disorder, OR = 2.09, 95% CI [1.87, 2.34], p < .001 (see Figure 1). The odds of having asthma, OR = 1.83, 95% CI [1.59, 2.11], p < .001, or a stroke, OR = 1.83, 95% CI [1.30, 2.57], p < .001, were almost twice as high in relation to lifetime prevalence of an internalising disorder.

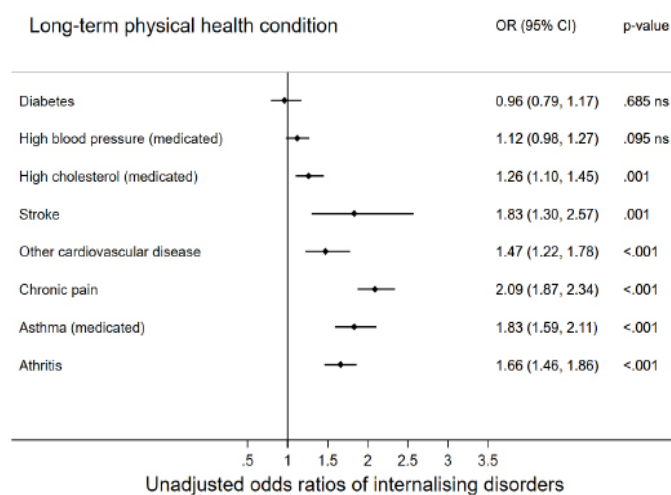


Figure 1. Unadjusted associations between internalising disorders and long-term physical health conditions (N=13,719).

Note. OR = an odd ratio greater than one suggests that a person with an internalising disorder is more likely to experience the long-term physical health condition compared to a person without an internalising disorder; CI: confidence interval. Other cardiovascular diseases included ischaemic heart disease, heart failure, heart attack or angina. Arthritis included rheumatoid arthritis and osteoarthritis.

Adjustment for sociodemographic characteristics

The main finding from the multiple logistic regression analyses showed that, whilst controlling for gender, age, ethnicity, and socioeconomic status, the association between internalising disorders and long-term physical health conditions remained significant and largely unchanged (see Figure 2). Diabetes and high blood pressure remained not significant. The highest odds were for stroke, where people with an internalising disorder were more than twice as likely to have experienced a stroke compared to those without an internalising disorder, adjusted OR = 2.26, 95% CI [1.57, 3.27], p < .001. Similarly, the odds of chronic pain remained twice as high in relation to lifetime prevalence of an internalising disorder, adjusted OR = 2.03, 95% CI [1.80, 2.29], p < .001. The adjusted association for asthma was slightly lower, adjusted OR = 1.63, 95% CI [1.41, 1.88], p < .001.

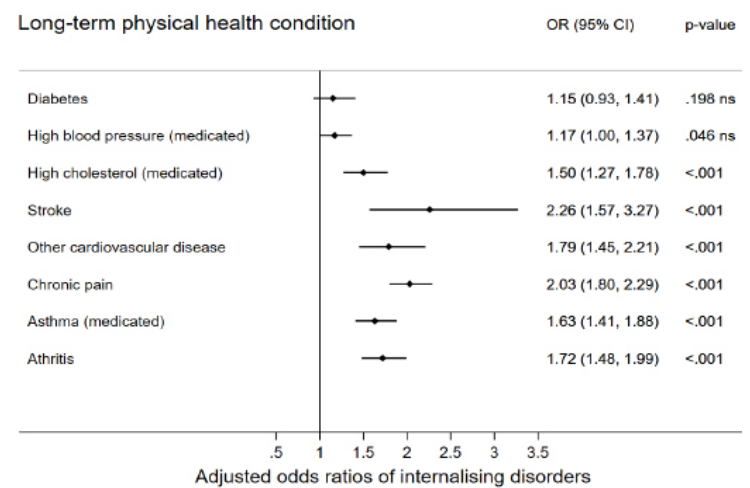


Figure 2. Adjusted associations between internalising disorders and long-term physical health conditions (N= 13,719).

Note. OR = an odd ratio greater than one suggests that a person with an internalising disorder is more likely to experience the long-term physical health condition compared to a person without an internalising disorder; CI: confidence interval. Other cardiovascular disease included ischaemic heart disease, heart failure, heart attack or angina. Arthritis included rheumatoid arthritis and osteoarthritis.

Sensitivity analysis

To address the possibility that the risk of long-term physical health conditions differed between anxiety, depression, and bipolar disorders, each internalising disorder was examined individually. Overall, the sensitivity analysis indicated the results were similar for each individual internalising disorder. The main difference was that anxiety was significantly associated with high blood pressure, adjusted OR = 1.39, 95% CI [1.14, 1.70], p = .001. While many of the associations between bipolar disorder and long-term physical health conditions were approaching significance, bipolar disorder was only significantly associated with chronic pain, adjusted OR = 2.30, 95% CI [1.49, 3.55], p < .001. However, only 1% of people reported having bipolar disorder, meaning the study had insufficient power to detect associations that exist for this particular internalising disorder.

Discussion

Using data from the 2015/16 NZHS, the associations between internalising disorders and long-term physical health conditions were examined whilst controlling for sociodemographic factors that included age, gender, ethnicity and socioeconomic status. Findings demonstrated that the lifetime prevalence of internalising disorders was associated with an increased risk of long-term physical health conditions, particularly stroke, other cardiovascular disease, chronic pain, arthritis, and asthma. These associations are discussed below in relation to current New Zealand and international literature.

Stroke and other cardiovascular disease

People with an internalising disorder had an increased risk of stroke and cardiovascular disease compared to those without an internalising disorder. Similarly, *Te Rau Hinengaro* (Oakley Browne et al., 2006) showed a higher prevalence of stroke and other cardiovascular disease among people who had experienced mental health problems in the past 12 months (10.2% compared to 7.5% respectively).

The current study indicated the risk of stroke was two times higher in relation to lifetime prevalence of an internalising disorder, after controlling for sociodemographic factors. This finding is higher than that reported in systematic reviews of longitudinal cohort studies that controlled for a history of stroke at baseline, in which the risk of stroke was 24–64% higher for people with anxiety or depression when compared to those without (Barlinn et al., 2015; Dong, Zhang, Tong, & Qin, 2012; Pérez-Piñar et al., 2017); and higher (74%) for bipolar disorder (Prieto et al., 2014). Given the cross-sectional study design of the NZHS, it is possible the odds ratios identified overestimate the risk compared to longitudinal studies, since the baseline prevalence of mental health problems in people diagnosed with stroke was not controlled for.

The risk of other cardiovascular disease was 79% higher (OR = 1.79) among people with experience of an internalising disorder compared to those without. Earlier systematic reviews of longitudinal studies found the risk of cardiovascular disease was 26% higher among people with anxiety (Roest, Martens, de Jonge, & Denollet, 2010), and 56–64% higher among people with depression after taking into account a history of cardiovascular disease and other risk factors (Charlson et al., 2013; Wulsin & Singal, 2003). There appears to be a dose response relationship with a higher risk associated with clinically diagnosed depression. For example, Van der Kooy et al. (2007) found the risk of cardiovascular disease was more than twice as high for major depression.

Chronic pain

The odds of experiencing chronic pain was two times higher among people with internalising disorders. *Te Rau Hinengaro* (Oakley Browne et al., 2006) also showed a higher prevalence of chronic pain (which included arthritis) among people with mental health problems compared to those without (52% and 35% respectively). The risk of chronic pain appears to be particularly high for people diagnosed with bipolar disorder. A large-scale meta-analysis provided some

evidence to suggest people with bipolar disorder are more than twice as likely to experience chronic pain compared to the general population (Stubbs et al., 2015). However, prospective longitudinal studies are lacking and the relationship between mental health and chronic pain appears to be bi-directional. For depression this may partly reflect shared biological pathways and neurotransmitters (Bair, Robinson, Katon, & Kroenke, 2003).

Arthritis

Internalising disorders were associated with 72% higher odds of arthritis (OR = 1.72; including rheumatoid arthritis and/or osteoarthritis). This finding corroborates with a previous population-based longitudinal study that found people with depression were 65% more likely to have rheumatoid arthritis compared to people without depression (Lu et al., 2016). The study also found there was a 69% increased risk of depression among people with arthritis.

Asthma

People with an internalising disorder were found to have 63% higher odds of asthma compared to those without an internalising disorder (OR = 1.63). *Te Rau Hinengaro* (Oakley Browne et al., 2006) also found a higher prevalence of respiratory conditions (including asthma) among people with mental health problems in the general population compared to those without (23% and 17% respectively). An earlier systematic review of prospective studies (Gao et al., 2015) found depression increased the risk of asthma by 43%, and a smaller risk (23%) of asthma associated with depression based on the findings of two studies (after controlling for depression at baseline).

Diabetes

Finding that internalising disorders were not significantly associated with diabetes was not expected based on previous research. A prior systematic review of longitudinal studies provided evidence to suggest depression increases the risk of type 2 diabetes by 60% (Mezuk et al., 2008). In addition, a systematic review of studies with various designs by Vancampfort et al. (2015) found bipolar disorder was associated with a 98% increased risk of type 2 diabetes. The results of this analysis of the NZHS did not differ when anxiety, depression, and bipolar disorder were examined separately. To further investigate this finding, the previous three years of NZHS data were examined in post hoc analyses. The analyses indicated a significantly higher risk of diabetes among adults with internalising disorders in each of the previous three years, adjusted OR = 1.37–1.68, $p < .01$. This highlights the limitation of using only one year of data and suggests the comorbidity between diabetes and internalising disorders needs further examination and monitoring.

Implications

The findings of the current study are in line with those of *Te Rau Hinengaro* (Oakley Browne et al., 2006) and the wider international literature in which mental health problems are associated with higher risks of cardiovascular disease (Charlson et al., 2013), stroke (Barlinn et al., 2015; Pérez-Piñar et al.,

2017), arthritis (Lu et al., 2016), chronic pain (Stubbs et al., 2015), and asthma (Gao et al., 2015). The findings are also comparable to the higher risk of physical health conditions reported in *Australia's Mental and Physical Health Tracker 2018* (Australian Health Policy Collaboration, 2018). Therefore, the NZHS may be a useful source of routinely collected data for monitoring the comorbidity of mental health problems and physical health conditions over time to inform clinical practice.

These comorbidities highlight the importance of assessing and responding to both the physical and mental health needs of people (De Hert et al., 2011). Routine screening and assessment is important given the risk of poorer health outcomes and premature mortality associated with mental health problems. This is important for people accessing primary health care as well as those accessing specialist mental health and addiction services. For example, a recent large-scale New Zealand study indicated a higher risk of premature mortality among people accessing specialist mental health and addiction services compared to the general population (Cunningham et al., 2014). In particular, the risk of cardiovascular causes of death was 69% higher among people accessing specialist mental health and addiction services compared to the general population (Cunningham et al., 2014). A higher risk of premature death from cancer amongst people with mental health problems has also been shown in New Zealand (Cunningham et al., 2014). Previous research suggests comorbidities may reflect the effect of depression on inflammatory mediators, neuroendocrine and neurotransmitter systems, and oxidative stress, as well as the mediating effects of individual-level risk factors, such as smoking, poor nutrition, and lack of physical activity (Barlinn et al., 2015; Cunningham et al., 2014; Gao et al., 2015; Maes, Kubera, Obuchowiczwa, Goehler, & Brzeszcz, 2011). It is also important to consider the cardiometabolic effects of psychotropic medications, and for clinicians to explain, monitor, and help people manage these physical health side-effects (Cunningham et al., 2014).

Improving the physical health of people with mental health problems requires integrated health service delivery and interventions at multiple levels (Liu et al., 2017; World Health Organization, 2017). To support this approach, Equally Well is a collaboration of New Zealand organisations working together to take action at multiple levels of the service delivery system (Te Pou o te Whakaaro Nui, 2014). Equally Well collaboratives have also been established in Australia and the UK. The collaboratives include mental health and addiction organisations, as well as, primary health organisations, which have a key role in offering routine screening and assessments. It is also important to ensure people with mental health problems have good access to primary health services. In an earlier NZHS analysis, Lockett, Lai, Tuason, Jury, and Fergusson (2018) showed that despite having greater health needs, people with mental health problems experience greater challenges accessing primary health services due to transport and costs.

Regarding workforce development, all health workers should be aware of the comorbidities between mental and physical health problems, and have the knowledge and skills to respond effectively to people (World Health Organization,

2017). The mental health services workforce should have the knowledge and skills needed to screen for physical health problems, identify deterioration in physical health, and ensure people have access to appropriate care (World Health Organization, 2017). The World Health Organization (WHO) noted that “whatever model is used, the outcome must be the same: care for both physical and mental health is available for each individual” (WHO, 2017 p. 24).

Limitations

Several limitations need to be considered when interpreting the findings. The diagnoses of internalising disorders and physical health conditions were based on self-reported data. It is likely some people had undiagnosed mental health problems within the sample, as many people do not seek treatment for mental health problems, particularly Māori and Pasifika peoples (Horwood & Fergusson, 1998). Therefore, the prevalence of internalising disorders in the general population may have been underestimated, as well as the risk associated with physical health conditions. In comparison, *Te Rau Hinengaro* (Oakley Browne et al., 2006) assessed mental health problems using the Composite International Diagnostic Interview (CIDI 3.0), a diagnostic screening tool. The lifetime prevalence of anxiety disorders was 25%, and mood disorders was 20%, which is higher than in the current study. Despite this limitation, data from the NZHS was able to detect a significant association between mental health problems and most physical health conditions in line with previous research.

The NZHS is a cross-sectional survey and therefore the direction of relationship between variables cannot be determined. The WHO highlights the relationship between mental health and physical health problems is often bi-directional and complex (WHO, 2017). As a result, the odds ratios reported in the current study may have been overestimated. In addition, the study only examined one year of NZHS data. This may have contributed to the lack of relationship between internalising disorders and diabetes being detected, which was present in previous years. The use of multiple years of data would assist in addressing variation between individual years.

The mental health problems examined in the current study included anxiety, depression, and bipolar disorder. Other serious mental health problems are also of interest, including psychosis and schizophrenia. However, the NZHS does not routinely gather this information. Nevertheless, previous research has shown people diagnosed with schizophrenia have high levels of physical health comorbidities (Te Pou o te Whakaaro Nui, 2014), in particular an increased risk of cardiovascular morbidity and mortality compared to the general population (Cunningham et al., 2014; De Hert et al., 2011). The inclusion of psychosis or schizophrenia in future surveys of this type may therefore be beneficial.

Other factors such as childhood sexual abuse and trauma may also increase the risk of both internalising disorders and physical health conditions, however these were not examined (Afifi et al., 2016; Fergusson, McLeod, & Horwood, 2013). It will also be useful to control for smoking and other health behaviours in future research.

Conclusion

This analysis of NZHS data shows the utility of using routinely collected data for examining comorbidities between mental health and physical health conditions. The results indicate people who experience anxiety, depression, and/or bipolar disorders often have co-occurring physical health conditions. Continued examination of national data can help monitor the prevalence of comorbidities and progress in addressing these health equity issues. This information should also be of interest to clinicians working across primary and specialist health services. Findings highlight the importance of screening and assessment of physical health conditions among people diagnosed with mental health problems, and routinely screening for mental health problems in people with long-term physical health conditions.

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Declaration of interests

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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Is Social Media Use for Networking Positive or Negative? Offline Social Capital and Internet Addiction as Mediators for the Relationship between Social Media Use and Mental Health

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The augmentation and displacement hypotheses generated two mediators for the relationship between social media use and mental health. A representative online sample of 1157 New Zealanders (stratified on age, gender, and region) were measured on social media use for networking, offline social capital, internet addiction, anxiety, and depression. Results showed that social media use for networking's relationship with anxiety and depression was mediated by both offline social capital and internet addiction. Anxiety and depression were lower when mediated by offline social capital, and higher when mediated by internet addiction. Applied to everyday social life, this suggests that when someone uses social media to build on pre-existing offline social capital, their mental health is "augmented". However, if their online social connections are unrelated to their offline social capital, this might be associated with an internet addiction where their offline social life is "displaced" by over-reliance on brittle online connections.

Keywords: social media, social networking, social capital, internet addiction, anxiety, depression, mental health

Social media has become a pervasive force in many daily lives. According to Facebook's latest report in June 2017, the platform had 1.32 billion daily active users and 2.01 billion monthly active users (Facebook, 2017). Social media is an equally dominant force in New Zealand society, with 88% of New Zealanders online visiting a social media site in any given month (The Nielson Company, 2016). According to the Nielson Company (2016), 3.1 Million New Zealanders (81% of the population above 10 years old), own a personal mobile device, while 3.4 Million (88% of the population above 10 years old) use the internet in any given week. A key question asked in the current literature is whether social media positively or negatively impacts the mental health of its users. Currently, there are conflicting answers to this question (Huang, 2010; Huang 2012). However, some of these contradictions might be explained by looking at how people use social media in the context of their online and offline relationships, and how such internet use might be associated with harmful addiction.

Positive and Negative effects of Social Media Use

There is currently a lack of consensus in the literature as to whether social media has a positive or negative effect on the wellbeing of its users. Some early research claimed the internet to be a negative force in people's lives, stating that it was associated with reductions in a person's social circle and general communication with family members (Kraut et al., 1998). Kraut et al. (1998) also found that internet use was associated with increases in depression and loneliness. However Kraut et al.'s (2002) follow up study on the same sample found that the negative effects had later mostly disappeared, with depression even showing a decrease in the second time period. In a separate study, reported in the same paper, Kraut et al. (2002) found that using the internet for

communication and general social involvement was associated with positive effects. In general, use of the internet predicted positive outcomes for extraverts and people with higher levels of social support and predicted negative outcomes for introverts and people with lower levels of social support. This has been described as "the rich getting richer and the poor getting poorer".

Although over a decade has passed since Kraut et al.'s seminal studies, there is still complexity and paradox present in the literature that recent meta-analyses have highlighted. Huang (2010) found a significant relationship between internet use and decreased overall wellbeing. Although the effect size was small, the measure of wellbeing used encompassed a wide range of factors like depression, self-esteem, and loneliness. However, two years later in a subsequent meta-analysis, Huang (2012) did not replicate the relationship between internet use and psychological wellbeing, and called for extra attention to be paid to issues in measurement and the effects other variables may have. There is the additional caveat that most published findings are based on cross-sectional (correlational) studies, and very few are based on longitudinal or experimental studies. The current study is also limited to cross-sectional data, and therefore focuses on a mediational model to at least provide some guidance as to what might be a plausible account of the relationship between social media use and mental health.

Since these seminal findings were published, several studies have supported the theory that the use of social media can negatively impact on mental health (e.g., Sidani et al., 2016; Vannucci, Flannery, & Ohannessian, 2017). However, in line with the findings of Kraut et al. (2002), social media use has a positive effect when people follow fewer strangers (Lup, Trub, & Rosenthal, 2015) and receive positive feedback from

others (Valkenburg, Peter, & Schouten, 2006). These findings can be explained by the augmentation hypothesis, while the literature that claims social media has a negative effect may be explained by the displacement hypothesis (Huang, 2010). These hypotheses should be treated as over-arching explanatory accounts of the relationship between social media use and mental health. Augmentation and displacement should not be interpreted as measures, as they have been operationalized in the literature through different constructs and measures.

The Augmentation and Displacement Hypotheses

Considering the augmentation and displacement hypotheses in tandem provides a pathway for explaining some of the contradictions present in the literature. The augmentation hypothesis states that use of the internet builds on and adds to existing face to face relationships, and may improve the giving and receiving of social support, resulting in better mental health for the user. However, the displacement hypothesis states that use of the internet, especially in connecting with people online, displaces face to face social relationships and the quality of social support given and received. This reduces the number and quality of existing friendships and results in negative effects for the user (Huang, 2010). Although these theories appear to be in direct conflict with one another, this can be resolved by looking at possible mediator variables (Huang, 2012).

Ahn and Shin (2013) found that the relationship between offline communication and wellbeing was mediated by both connectedness and *avoidance of social isolation*. However, the relationship between social use of media and wellbeing was mediated by connectedness alone. This demonstrates that the use of social media for communication facilitates connectedness with others, while face to face communication can facilitate both connectedness and *avoidance of social isolation*. These findings help explain both the augmentation and displacement hypotheses. When someone is seeking connectedness (especially shy people, see Baker & Oswald, 2010), use of the internet can boost social capital offline (i.e., the value of face to face relationships). However, if they are trying to avoid social isolation, use of the internet may instead displace existing offline social relationships by filling up time with brittle and shallow online connections with people who are largely strangers, and failing to develop better social skills. Displacement may also occur when an individual uses the internet excessively, and develops an internet addiction that may then further take time away from face to face relationships (e.g., offline social capital) and positive social interactions. The present paper attempts to demonstrate that the augmentation and displacement hypotheses can be combined through testing the mediators 'offline social capital' and 'internet addiction', focusing specifically on the potentially problematic variable of social media use for networking.

Offline Social Capital and Internet Addiction

It is a well-established finding in the literature that an increase in offline social connections is associated with improvements in mental health (Kawachi & Berkman, 2001; Silva, McKenzie, Harpham, & Huttly, 2005). Thus, it makes

sense that the use of online social media platforms would lead to improvements in mental health when it facilitates the development of the user's social capital offline, as well as the giving and receiving of social support. For instance, Manago et al. (2012) found that the undergraduate students who maintained higher proportions of past social connections (e.g. high school friendships on Facebook) were more likely to feel more social support. Use of the internet specifically for maintaining social connections also shows improvements in mental health. In a survey conducted by Bessiere, Kiesler, Kraut and Boneva (2008), using the internet to communicate with friends and family was associated with reductions in depression after a 6 month period. The same study found that using the internet for gaining information and consuming entertainment had no effect on levels of depression. Therefore, in accord with the augmentation hypothesis, we hypothesize that social media use for networking that facilitates offline social networks should be negatively associated with symptoms of anxiety and depression.

The detrimental effect of internet addiction is an equally established finding. Almost two decades ago, Young and Rogers (1998) found a relationship between depression and pathological internet use. Since then multiple studies have highlighted the wide range of detrimental effects internet addiction may have. Kim et al. (2006) conducted a survey on Korean high school students, finding 1.6% of the students to be internet addicts and 38% to be possible internet addicts. The internet addicted group showed the highest levels of both depression and suicidal ideation. Correlational studies have also found a positive relationship between internet addiction and depression, anxiety and stress (Akin & Iskender, 2011). Excessive internet use may be the result of an individual being lonely and lacking social skills (Kim, LaRose, & Peng, 2009). This excessive use may in turn lead to the development of an internet addiction, resulting in further detrimental effects.

This study will test whether the variables internet addiction and offline social capital mediate the link between social media use for networking and anxiety and depression. This builds on previous studies and further connects and operationalizes the augmentation and displacement hypotheses. In accord with the augmentation hypothesis, we anticipate that social media use for networking will be associated with decreased levels of anxiety and depression when mediated through offline social capital; but following the displacement hypothesis, we anticipate elevated anxiety and depression when this is mediated through internet addiction.

Methods

Sample

Analyses were conducted on New Zealand data ($n = 1157$, 56% female) from a much larger multinational study, the 'Worldwide Digital Influence Survey' (Liu, Milojev, Gil de Zúñiga, & Zhang, 2018). The first wave of the study was fielded online between September 14 and 24, 2015, by Nielsen, a popular media polling company based in the United States that curates a worldwide, online panel with more than 10 million potential participants (see Gil de Zúñiga & Liu, 2017 for

details). Nielsen used stratified quota sampling techniques to create samples whose demographics closely matched those reported by official census agencies in each country for age, gender, and region. Because of the complexity of the meaning of ethnicity in a global context, data on ethnicity were not available. The average age of the New Zealand sample was 49.54 years old ($SD = 17.32$). 22.9% of the participants lived in a rural area, while 77.1% lived in an urban area; 88.6% of the participants reported that they use the internet 7 days a week. The average amount of time spent online per day was 5.47 hours ($SD = 4.46$).

Materials and Procedures

Participants were asked to respond to 7-point Likert-type scales (1 = Never, 2 = Rarely, 3 = Somewhat Rarely, 4 = Occasionally, 5 = Somewhat Frequently, 6 = Frequently and 7 = All the time) for the following measures (except where other scale labels are described):

Social media use for networking

This variable refers to the degree to which the participants use social media for the specific purpose of connecting with others. It was constructed by combining five items following the stem question: "People also use social media for a variety of things. Listed below are some activities you may, or may not have engaged in. Please tell us how often you have used social media in the past 3 (three) months for the following: "To stay in touch with friends and family", "To meet new people who share my interests", "To contact people I wouldn't meet otherwise", "To find people to solve problems in my community", "To connect community members to each other". This variable was derived from a more general measure of social media social capital (Gil de Zuniga, Barnidge, & Scherman, 2017) but we removed items unrelated to connecting relationally with others to get a focused measure of internet use for social networking. This measure had a Cronbach's alpha coefficient of .86.

Anxiety

The Generalized Anxiety Disorder scale (GAD) (Spitzer, Kroenke, Williams, & Löwe, 2006) was used to get a measure of symptoms of anxiety: it is constructed from seven items ("Feeling nervous, anxious, or on edge", "Not being able to stop or control worrying", "Worrying too much about different things", "Having trouble relaxing", "Being so restless that it's hard to sit still", "Becoming easily annoyed or irritable" and "Feeling afraid as if something awful might happen"). This measure had a Cronbach's alpha coefficient of .94.

Depression

This variable relates to the level of depressive symptoms experienced by the participant. It was constructed from two items ("Having little interest or pleasure in doing things" and "Feeling down, depressed, or hopeless") drawn from the Patient Health Questionnaire-4 (PHQ-4) (Löwe et al., 2010) with a Cronbach's alpha coefficient of .85.

Offline social capital

This variable refers to the participant's connection to the people in their community. It is constructed from five items

("People in my community feel like family to me", "I think people in my community share values", "In my community, we talk to each other about community problems", "I think people in my community feel connected to each other" and "In my community, people help each other when there is a problem"). Participants were asked to rate how much they agreed with each statement (1 = Disagree Completely, 2 = Disagree, 3 = Disagree a Little, 4 = Neutral, 5 = Agree a Little, 6 = Agree, 7 = Agree Completely). This measure had a Cronbach's alpha coefficient of .91.

Internet addiction

This variable refers to how much the participant believes they are addicted to the internet. It is constructed from a single item ("I am addicted to the internet") in which participants were asked to rate how much they agreed with the statement (1 = Disagree Completely, 2 = Disagree, 3 = Disagree a Little, 4 = Neutral, 5 = Agree a Little, 6 = Agree, 7 = Agree Completely).

Control variable

In addition to the main variables, we also included 'social media use for news' as a control variable to rule out the effect of non-social networking social media use. This variable relates to the participant using social media for the purpose of gaining news information. It is constructed from three 'social media use' items ("To stay informed about current events and public affairs", "To stay informed about my local community" and "To get news about current events from mainstream media (e.g., professional news services)", drawn from work by Gil de Zúñiga, Jung, and Valenzuela (2012). This measure had a Cronbach's alpha coefficient of .87. It was constructed as a control variable only. This control variable was included as a covariate when predicting the mediators (the internet addiction and offline social capital) and the outcomes (anxiety in Model 1 and depression in Model 2) of social media use for networking.

Results

Descriptive statistics and the correlation matrix for all variables are presented in Table 1.

Table 1
Descriptive Information and Correlations for the Analysed Variables

	α	M	SD	1	2	3	4	5
1. Anxiety	.94	3.02	1.33	1				
2. Depression	.85	2.76	1.45	.77**	1			
3. Internet Addiction	—	3.04	1.83	.25**	.25**	1		
4. Offline Social Capital	.91	3.79	1.28	-.06*	-.12**	-.01	1	
5. Social Media Use for Networking	.86	3.08	1.33	.20**	.14**	.34**	.13**	1
6. Social Media Use for News	.87	3.63	1.59	.18**	.12**	.26**	.09**	.75**

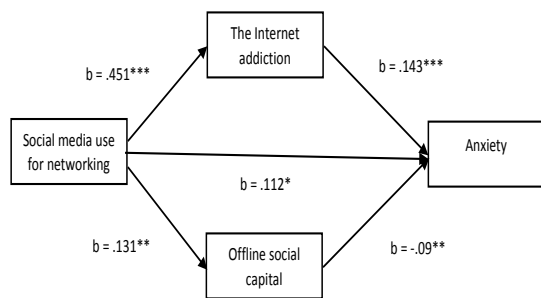
Note. * $p < .05$ (2-tailed), ** $p < .01$ (2-tailed)

To test the augmentation and replacement hypotheses, a series of multiple mediation analysis was performed using PROCESS, a statistical package developed by Hayes (2012). In determining the mediation effects, we followed Baron & Kenny's (1986) three criteria; (1) there must be a significant relationship between the independent variable and the dependent variable, (2) there must be a significant relationship

between the independent variable and the mediating variable, and (3) the mediator must be a significant predictor of the outcome variable in an equation including both the mediator and the independent variable. Finally, a Sobel test was then performed to test whether each of these mediation effects was statistically significant (Sobel, 1982). Our analyses were conducted based on the mean scores of the variables.

Model 1: A multiple mediation analysis predicting anxiety symptoms

Figure 1. Social media use for networking and anxiety, mediated through internet addiction and offline social capital controlling for social media use for news. * $p < .05$, ** $p < .01$, *** $p < .001$.

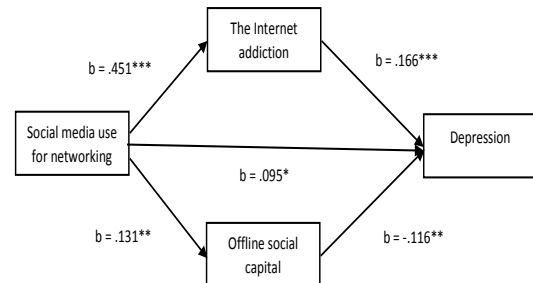


In Step 1 of the multiple mediation model¹, social media use for networking was found to significantly and positively predict anxiety, $b = .164$, $t(.044) = 3.726$, $p < .001$, after controlling for social media use for news [$b = .053$, $t(.037) = 1.428$, $p > .05$]. Step 2 showed that the regressions of social media use for networking on both mediators, internet addiction [$b = .451$, $t(.058) = 7.82$, $p < .001$] and offline social capital [$b = .131$, $t(.043) = 3.085$, $p < .01$], were also significant after controlling for social media use for news [$b = .019$, $t(.048) = .389$, $p > .05$ and $b = -.008$, $t(.036) = -.219$, $p > .05$, respectively]. In Step 3, Internet addiction [$b = .143$, $t(.022) = 6.46$, $p < .001$] and offline social capital [$b = -.09$, $t(.03) = -3.01$, $p < .01$] significantly predicted anxiety, whilst the direct regression effect of social media use for networking on anxiety was reduced, $b = .112$, $t(.045) = 2.501$, $p < .05$ (see Figure 1). Results remained significant after controlling for social media use for news [$b = .049$, $t(.036) = 1.366$, $p > .05$]. Finally, a Sobel test was conducted and found a positive partial mediation effect of internet addiction ($b = .065$, $Z(.013) = 4.96$, $p < .001$) and a negative partial mediation effect of offline social capital ($b = -.012$, $Z(.006) = -2.1$, $p < .05$). In conclusion, these findings supported both hypotheses, that social media use for networking is positively associated with anxiety when mediated by internet addiction (the displacement hypothesis), and conversely, is negatively linked with anxiety when mediated through social capital offline (the augmentation hypothesis).

¹ All path coefficients reported are unstandardized, so caution should be used before interpreting these in terms of effect sizes. However, in crudely general terms, the path coefficients represented modest to small sized effects

Model 2: A multiple mediation analysis predicting symptoms of depression

Figure 2. Social media use for networking and depression, mediated through internet addiction and offline social capital controlling for social media use for news. * $p < .05$, ** $p < .01$, *** $p < .001$.



Next, we examined the mediational roles of internet addiction and offline social capital on the link between social media use for networking and symptoms of depression. Step 1 of the multiple mediation model yielded a significant regression of social media use for networking [$b = .154$, $t(.045) = 3.39$, $p < .001$] on depression, even after controlling for social media use for news [$b = .035$, $t(.038) = .908$, $p > .05$]. In Step 2, social media use for networking significantly predicted both Internet addiction [$b = .451$, $t(.058) = 7.82$, $p < .001$] and offline social capital [$b = .131$, $t(.043) = 3.08$, $p < .01$], after controlling for social media use for news [$b = .019$, $t(.048) = .389$, $p > .05$ and $b = -.008$, $t(.036) = -.219$, $p > .05$ respectively]. Finally, Step 3 showed that internet addiction [$b = .166$, $t(.023) = 7.33$, $p < .001$] and offline social capital [$b = -.116$, $t(.031) = -3.76$, $p < .001$] predicted depression, while the regression coefficient of social media for networking substantially decreased [$b = .095$, $t(.046) = 2.08$, $p < .05$] indicating partial mediation. These results remained significant after controlling for social media use for news [$b = .049$, $t(.036) = 1.366$, $p > .05$]. Finally, a Sobel test showed a positive mediation effect of internet addiction [$b = .075$, $Z(.014) = 5.32$, $p < .001$] and a negative mediation effect of offline social capital [$b = -.015$, $Z(.007) = -2.34$, $p < .05$]. In accord with Model 1, Model 2 supported both the displacement and augmentation hypotheses; social media use for networking was positively linked to depression when mediated by Internet addiction, and conversely, was negatively associated with depression when mediated by social capital offline (i.e., face to face relationships).

Discussion

Currently debate exists in the literature over whether social media use has a positive or negative effect on individual wellbeing. The augmentation hypothesis states that using the internet builds existing social capital offline and the giving and receiving of social support, and that this is associated with positive effects for the user. The displacement hypothesis opposes this, stating that internet use diminishes offline social connectedness (i.e. social capital), which is associated with negative effects for the user. Addressing these two competing views, this study aimed to test a mediational model where the effect of social media use on well-being is contingent on intervening processes (Huang, 2012).

The main contribution of the present study was to provide evidence that social media use for social networking was associated with higher or lower levels of anxiety and depression symptoms depending on the mediational pathway it evoked. Our first analyses showed that social media use for social networking had indirect effects on both depression and anxiety in the negative direction if mediated by internet addiction. There may be a set of tendencies where social media use for social networking is associated with excessive internet use, and more symptoms of depression and anxiety. These findings seem to be well explained by the displacement hypothesis, that is, the positive experiences that an individual user gains from social media networking possibly drive him or her to develop an excessive love for the internet that takes away from time for social interactions offline and/or reduces social support from these interactions; these are then connected to higher levels of symptoms for depression and anxiety (Ahn & Shin, 2013).

However, these are statistical relationships that must be treated with caution, as our study also demonstrated that the networking uses of social media are associated with lower depression and anxiety when their relationship is mediated through offline social capital. This is in line with the augmentation hypothesis that internet use might have positive effects on an individual's well-being because it can enhance his or her social connectedness (Huang, 2012).

Because the data presented here are correlational, the mediational analyses reported should be treated as plausible interpretations of statistical patterns, not as evidence of causal relationships. For example, it is very easy to imagine an alternative model where it is symptoms of anxiety or depression that lead a person to feel their internet use is becoming an addiction. In terms of the raw correlation matrix reported, there was no relationship between internet addiction and offline social capital, as one might expect if the displacement hypothesis were treated as providing a causal account of patterns observed. Internet addiction is *not* adequate as a proxy measure for displacing face-to-face social relationships, but rather could be part of an online syndrome where the *subjective experience of the internet* (interpreted by participants as "addiction") is associated with disturbances to their mental health. Hence, augmentation and displacement should be considered as over-arching explanatory frameworks for understanding the possible relationship between social media usages and mental health, not as specifically measured constructs in the context of the current study.

Conclusion

The current study suggests that both augmentation and displacement may occur through the use of social media for networking. Internet addiction and offline social capital may play important roles as mediators that determine whether social media use for networking produces positive or negative effects on mental health. It is possible that the effects of social media use for networking on mental health depend on the particular user's ability to avoid the addictive side of it (O'Keeffe & Clarke-Pearson, 2011; Song, Larose, Eastin, & Lin, 2004; Young & Rogers, 1998). However, it is worth noting that

consistent with Huang (2010), the direct paths between social media use for networking and slightly lower mental health remained significant even after mediation. Overall, the size of path coefficients tended to be small.

Despite the utility of these findings, it is important to note that the current study contains several limitations. First, though internet addiction yielded significant mediational effects for both depression and anxiety, it was measured with only a single item. Therefore, for future studies it is important to replicate the model with a better measure of internet addiction. Second, while our models were tested with a relatively powerful statistical analysis on a large representative sample, any causal inferences should be avoided as the analyses were conducted based on a cross-sectional data. Further studies may consider using quasi-experimental or longitudinal designs to test the causal effects of social media use on the users' anxiety and depression.

The findings of this study do appear to have wider implications for society. Education could be provided to people about the addictive effect of networking using social media. People could be encouraged to instead be mindful of the importance of their offline connections, and use social media as a tool to improve their existing social capital. This might be an especially important message for older adults whose use of social media is increasing (despite them growing up without this technology, see Madden, 2010). This paper also highlights a need for support services (akin to alcohol and drug services) to adapt, and provide treatment for internet related addictions, especially as internet usage continues to expand (Grubbs, Stauner, Exline, Pargament, & Lindberg, 2015).

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Early childhood educators' and parents' perceptions of bullying in preschool

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Early childhood educators' (ECEs) and parents' perceptions of bullying may contribute to young children's (3-5 years) use of these behaviours. However, there is currently a lack of qualitative research exploring and comparing ECEs' and parents' perceptions of young children's capability to engage in bullying and the types of common bullying behaviours observed in early childhood contexts. Ninety three ECEs and seventy five parents in New Zealand responded to a set of open-ended questions about bullying in early childhood. Caregivers reported that young children are capable of engaging in bullying, however, these behaviours may not always be intentional. Some caregivers indicated that they were hesitant to label children as bullies because of the challenges discriminating between normative patterns of social development in the early years. Results are discussed in terms of practical and educational implications for ECEs and parents.

Keywords: social development, early childhood educators, qualitative study on bullying, parents, bullying

Although bullying among school-age children has become a pervasive international concern, relatively few studies have examined bullying behaviours in preschool-age children (3- to 5-years old). Bullying is typically defined as "aggressive behaviour or intentional 'harm doing,' which is carried out repeatedly and over time in an interpersonal relationship characterised by an imbalance of power" (Olweus, 1993, p. 8-9). This definition includes three main criteria: intentional aggression, repetition of harmful behaviour, and an imbalance of power. There has been controversy around applying this definition to early childhood because it does not take into consideration the fluid nature of younger children's social skills and developmental abilities such as emotional regulation, self-control, social and cognitive abilities, and perspective taking skills (Coie & Dodge, 1998; Kochenderfer & Ladd 1996; Monks, Ortega Ruiz, & Torrado Val, 2002). As a result, researchers and practitioners have been hesitant to label young children as 'bullies' because of the inherent difficulties in applying the traditional definition of bullying consistently (Hanish, Kochenderfer-Ladd, Fabes, Martin, & Dennings, 2004).

A particular dilemma for researchers and practitioners in applying the concept of bullying in early childhood concerns young children's intentional actions (Cameron & Kovac, 2016; Hanish et al, 2004; Kochenderfer & Ladd, 1996; Monks et al, 2002; Vaillancourt et al, 2008). Because of the immaturity of young children, they have often been considered too young to have the capacity to intentionally harm others and recognise their power over another. Consequently, preschool-age children's aggression and bullying-like behaviours have often been considered as a developmental stage involving rough and tumble play which is "a normal part of growing up" (Sawyer, Mishna, Pepler, & Wiener, 2011, p. 1797). These challenges have led some researchers to warn against using too narrow a definition of bullying because experiences of the phenomena are different at an individual level and for different age groups (Vaillancourt et al, 2008; Volk, Veenstra, & Espelage, 2017). However, if the definition is too narrow, there is a risk that certain behaviours will go unnoticed and bullying behaviours will not receive the attention and intervention that they

require.

Advantages and disadvantages of using the term "bullying"

There are advantages and disadvantages of labelling young children's behaviours as bullying and labelling children as bullies. Researchers have identified that young children's use of aggression may serve proactive (i.e., deliberate behaviour that is used to obtain an object, outcome, or self-serving goal) and reactive (i.e., hostile behaviour used in response to a perceived threat) functions (Ostrov, Murray-Close, Godleski, & Hart, 2013). Roseth and Pellegrini (2010) identified that bullies generally use proactive aggression to formulate instrumental goals (i.e. to intimidate a peer or dominate a social relationship) and choose aggressive behaviours to achieve these social goals and power. Proactive aggression can be perceived as more serious than reactive aggression because there is evidence of malicious intent and premeditation whereby the bully targets a weaker peer (Vlachou, Andreou, Botsoglou, & Didaskalou, 2011). Thus, an understanding of the function of young children's behaviour allows researchers and practitioners to more accurately distinguish between aggressive and bullying behaviours and label them accordingly.

In contrast, aggression during early childhood is considered more common than any other developmental period (Kochenderfer & Ladd, 1996) and there is the risk of labelling all aggressive behaviours as bullying when the behaviour may simply be the result of immaturity, poor self-regulation, or reactivity rather than malicious intent. Conceptually the term bullying is subjective (Mishna, Scarcello, Pepler, & Wiener, 2005) and several findings suggest that preschool bullies exhibit social characteristics that differ to those found in non-bullies (Vlachou et al, 2011). Applying the bully label to behaviour and young children incorrectly can lead to stigmatising effects for some children, however, there is a need to acknowledge that bullying is distinct from general aggression and both these behaviours can be identified during early childhood.

Although caution is warranted in labelling young children as *bullies* using Olweus' (1993) traditional definition of bullying, evidence is mounting that clearly indicates the existence of bullying-like behaviours in early childhood (Alsaker & Gutzwiller-Helfenfinger, 2010; Alsaker & Nägele, 2008; Repo & Sajaniemi, 2015). Kirves & Sajaniemi (2012) applied this traditional definition of bullying in their study of three to six year old children and found approximately 13% of children in early childhood settings had been involved in bullying incidents and this rate was similar to levels of bullying among school-age children. Bullying in preschool has also been shown to predict negative short-term and long-term problems such as peer rejection, school avoidance, academic performance, social adjustment, and detrimental mental health outcomes (Kochenderfer & Ladd, 1996; Vlachou et al, 2011). This suggests that bullying is an important phenomenon that requires attention in the early years when children are beginning to interact with peers and experiment with different social behaviours. In addition, whilst there is research on individual, environmental, and ecological factors associated with bullying and bullying interventions in primary and secondary educational settings, much less is known about parents' and educators' perspectives of bullying in early childhood and comparisons between these two groups are relatively uncommon.

Caregiver's perceptions of bullying during early childhood

Caregiver's perceptions towards bullying have been shown to be a significant risk factor for young children's engagement in bullying. Research has shown that some parents and educators view bullying behaviours used by preschool-age children as a normal part of child development (Harcourt, Jasperse, & Green 2014; Sawyer, et al, 2011) which may lead to a lack of awareness and intervention in these behaviours (Humphrey & Crisp, 2008). It has been argued that because of the challenges in discriminating between normative patterns in the development of aggression in the early years and the development of ongoing, intentional bullying behaviours in which power is used aggressively, young children should not be labelled as bullies because of the stigmatising effects and negative connotations associated with the term. For instance, Farrell (2010) found that teachers from three early childhood settings in Australia were reluctant to label young children as bullies or victims, instead opting for terms such as "inappropriate" or "unacceptable" behaviour.

A major challenge in understanding caregiver's perceptions of bullying concerns the question of how to define bullying at such a young age. When asked to define bullying, educators and parents usually report it as physical violence and disobedience and believe these to be the most serious form of bullying (Mishna 2004; Sawyer et al, 2011). More recently, exclusion and conditional threats received higher ratings as bullying behaviours, possibly indicating a societal shift in perspective of what constitutes bullying behaviour in young children (Cameron & Kovac, 2016). Despite the inconsistencies in behaviours identified as bullying, Goryl, Neilsen-Hewett, and Sweller (2013) found that teachers believe that young children are capable of bullying and that incidences of bullying can be

identified in early childhood contexts. Indeed, the biggest challenge for researchers exploring this phenomenon is the subjective nature of the term and identifying the nuances of bullying behaviours, particularly in the early childhood context when these behaviours emerge. To date, research exploring ECEs' and parents' perceptions of bullying in early childhood contexts has relied on quantitative methods (e.g. Cameron & Kovac 2017; Goryl et al, 2013). This study aims to refine our understanding of ECEs' and parents' perceptions of bullying by employing a qualitative measure, allowing a more detailed examination of the nuances of bullying behaviours used during this developmental period.

The current study

Although researchers have started to explore caregiver's perceptions of bullying in early childhood, descriptive, qualitative research comparing the differences between ECEs' and parents' perceptions about whether young children are capable of bullying is largely absent from the research literature. Given that early relationships with caregivers play an important role in guiding young children's social competence and behaviour, it is imperative that research address both ECEs' and parents' perceptions in an attempt to guide them towards a common understanding of the nature and definition of the phenomenon. The purpose of this study was to explore and compare the perceptions of ECEs and parents with respect to (1) whether they believed young children were capable of bullying, and (2) the types of behaviours they believed constituted bullying during this developmental period.

Method

The current study is part of a larger mixed-methods research project exploring ECEs' and parents' perceptions of young children's social development.

Participants

Participants were 93 ECEs and 75 parents of children between the ages of three and five years. All early childhood services in New Zealand were invited to participate in the study ($N = 4638$), however, over half of these services shared the same email address and only services with different addresses were contacted ($n = 2457$). The list of services was obtained from the government website (www.educationcounts.gov.nz) and include community and privately owned settings such as casual education and care, Kindergarten, play centre, hospital-based, education-care, home-based, Te Kōhanga Reo, and correspondence settings.

Among ECEs, 98% of participants were female, ranging in age from 19 to 68 years ($M = 42.6$; $SD = 10.9$). Participants held a range of positions within their services including registered teachers (38%), head teachers (36%), and centre managers (20%), with the remainder consisting of three nannies, two students, and one unqualified teacher. The majority of parents who completed the survey were also female (99%), ranging in age from 20 to 50 years ($M = 34.9$; $SD = 6.42$). Additional information pertaining to participant's age, gender, ethnicity, and educational background is presented in Table 1.

Table 1. Age, gender, ethnicity, and educational background of parents and ECEs

	Age	Gender (%)		Ethnicity (%)					Education				
	Mean (SD)	Female	Male	European	Māori	Pacific Peoples	Asian	Other	Bachelor	≥Masters	Dip./Cert.	Completing Dip./Cert.	Other
ECEs	42.6 (10.9)	98	2	81	11	3	2	3	80	3	16	1	0
Parents	34.9 (6.4)	99	1	92	0	1	3	4	60	13	20	4	3

Measure

Participants responded to a series of closed and open-ended questions about (a) their demographics (see Table 1), (b) observed frequency of aggression and prosocial behaviours used by young children, (c) their normative beliefs about aggression, (d) their perceptions of, and confidence levels in identifying and managing bullying behaviours used by young children, and (e) whether they believe young children are capable of bullying and if so, to describe common bullying behaviours observed in the early childhood centre, home or other social settings. This paper will focus on participant's responses to open-ended questions related to section e of the survey.

Procedure

Approval from the University Human Ethics Review Committee was obtained prior to the commencement of the study. An email invitation with the Qualtrics survey web link embedded was sent out to all listed early childhood services in New Zealand. Early childhood services were asked to distribute the invitation to ECEs and parents of children between the ages of three and five years. Parents were also invited to participate through advertisements posted on online media platforms such as Plunket NZ.

The survey instrument contained a combination of closed- and open-ended questions covering a wide range of aspects of aggression and bullying. The first section of the survey included a cover letter explaining the purpose and procedures for completion of each section of the survey and a statement of informed consent. Informed consent was obtained via the participant's submission of their responses. The online format of the survey ensured that no personal identifying information was collected from participants and that the anonymity of participants was protected. Personal information was limited to gender, age, ethnicity, ECE or parent status, and educational background.

Data analysis

Participant's qualitative responses were analysed using content analysis and by categorising the data according to frequency and major themes. ECE's and parent's qualitative responses were read and reread and initial categories were developed to identify common recurring themes related to perceptions of young children's bullying capability and common bullying behaviours observed in early childhood contexts. These categories were influenced by the research and survey items as well as previous research (e.g. Goryl et al, 2013; Mishna 2004; Sawyer et al, 2011). All major themes and categories were compared and discussed between two coders,

and constant comparisons led to the grouping of common concepts related to ECEs' and parents' perceptions of young children's bullying behaviours. This process continued until consensus was achieved and no additional new information was being provided from the data. Participant's responses were coded a final time to ensure full agreement was reached between the two coders. In the case where the participant's responses contained more than one theme, all relevant codes were applied.

Results

The results are organised into four sections. The first section describes findings relating to ECEs' and parents' beliefs about young children's capability to engage in bullying and the second section describes examples of bullying behaviours that are commonly observed by ECEs and parents in young children's social settings. The third section explores in more detail a subgroup of ECEs and parents who were unsure about using the term bullying to describe behaviours used by young children, while the final section reports the associations between ECEs' and parents' perceptions of bullying and the demographic variables age, educational background, and ECE's position within the service. Associations with gender and ethnicity were not examined because of uneven group sizes.

Bullying capability in the early years

Participants' perceptions of young children's bullying capabilities were categorised as either supporting or opposing young children's ability to use bullying behaviours, with the majority of ECEs (76%) and parents (72%) indicating that young children are capable of bullying. Participants were given the opportunity to explain their response and sub-categories related to the definition of bullying, age, social maturity, and environmental factors were identified. These sub-categories are supported by participants' responses and response frequencies are also reported to indicate the significance of each theme in the data.

Definition of bullying

ECEs ($n = 3$) and parents ($n = 6$) who indicated that young children are capable of bullying placed importance on understanding the intentions of young children's behaviours and acknowledged the role of power in bullying. Participants mentioned for example that "yes [young children] bully but it is mostly unintentional bullying" and stressed that young children do not understand what they are doing and the impact their behaviour may have on others. As participants mentioned:

Yes but I don't think they intentionally 'bully' others but only act in a way that they think is ordinary.

Yes [young children are capable of bullying] but I don't believe they realise what they are doing. They know they are upsetting the child but don't understand the impact this has on the other child.

Yes, they bully at this age, however, they may not have the ability to understand what they are doing and how to manage their feelings.

Yes, they are capable of these behaviours, but I don't believe that children of this age have a full understanding of what bullying is exactly as they are still developing an understanding of social behaviour and of what is appropriate and what is not.

Some behaviours could be considered bullying, but in my view, they are not delivered with the real intent to hurt another child.

Power imbalance and control were also acknowledged in a few ECE's ($n = 4$) responses in recognising young children's bullying capability. For example, participants said "I see some children gain a sense of control from being able to upset another child" and "bullying is often children trying to control and assert autonomy" suggesting that these behaviours are proactive and used by children to assert their power and dominance over other peers.

Of those participants who indicated that young children are not capable of bullying, four ECEs and three parents believed this was because young children did not have the social and emotional capacity to intentionally harm another child or that the behaviour was not ongoing. For example, one ECE stated "No [young children are not capable of bullying], I believe that bullying is a thought out reaction, the child wants to hurt another and sets out to do so" and "children of this age tend to act in the moment, in one-off situations. I see bullying as an ongoing behaviour that happens on a regular basis." Another ECE stated "I feel that bullying is too strong of a word to use with this age group... they are unable to process logic yet so I feel it is usually just an automatic response that causes their behaviour – such as fight or flight." One participant included reference to the repetition of behaviour in their response.

Age and social maturity

In many of the responses, ECEs and parents indicated that bullying behaviours differed for younger and older children. A number of participants mentioned:

Yes [young children are capable of bullying] but possibly more inadvertently for the younger ones.

Yes [they are capable of bullying] but I don't think they can bully in the same way as an older child does.

I see the bigger older children deliberately hurting the younger children.

Yes, young children can act as bullies but not comparable to the way a tween or teen or adult may bully.

Closer to five they can seem to bully in a more sophisticated fashion.

Other participants were reluctant to identify young

children's behaviour as bullying because of their lack of social and emotional maturity. For instance, a parent said, "they don't quite have the social maturity to handle situations properly so they may act out to get attention." This notion of social maturity also included social cognitive aspects and functions of children's behaviour as a number of participants mentioned:

I don't believe that children of this age are capable of malicious behaviour and thinking.

Lots of bullying behaviour is just impulsive and emotionally driven, without actually trying to hurt others.

Children at this age are still struggling with emotional impulses and their egocentrism.

Children in this age bracket are still somewhat impulsive, they are still learning and require guidance to support them to develop appropriate behaviours in social settings.

Some of these statements suggest that while ECEs and parents perceive young children as capable of bullying, these behaviours may be considered a part of a typical developmental phase during which "majority of children this age are simply testing out different social skills and behaviours." These responses also indicate that some ECEs and parents recognise the function of young children's behaviour.

Environmental factors

The strongest view adopted by ECEs ($n = 12$) and parents ($n = 10$) who indicated that young children are capable of bullying was the influence of environmental factors on children's behaviours. Participants, for example, rationalised young children's behaviour stating that they were simply modelling or "copying what they have seen or heard." More specifically, some ECEs and parents suggested that older siblings play an important role in young children's use of bullying behaviours whereby they "are mimicking behaviour that they have seen or have experienced from their siblings or in the media." Other participants stated:

I believe a lot of bullying behaviour is picked up from adults or interactions with older children.

In my experience [the bullies] are younger siblings who have learned this behaviour from others.

We see children modelling what they see from older siblings and peers.

I believe bullying at this age is a learned behaviour that had been witnessed and not dealt with appropriately.

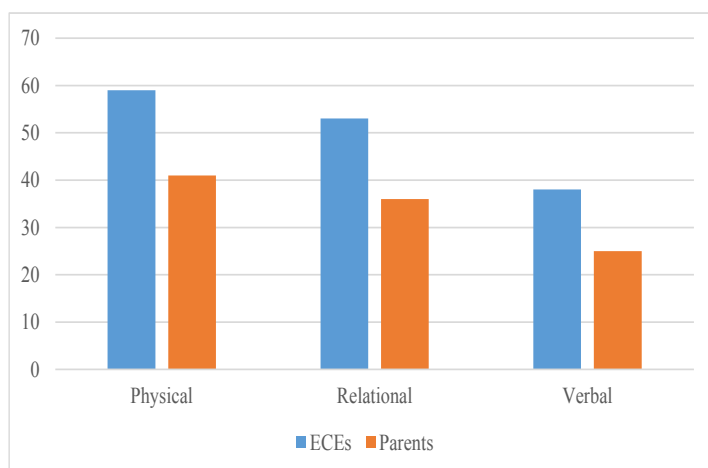
Most bullying behaviours are learnt. A child could be copying this behaviour from elsewhere, it could be their social norm culturally...without an awareness that it isn't ok behaviour because it's their norm.

Common bullying behaviours observed in the early years

ECEs and parents provided examples of common bullying behaviours that they had observed in young children's social settings and these were categorised as physical, relational, and verbal aggression. Of the 93 ECEs, eight described behaviours that were only relational, one provided examples that only included physical behaviours, and the remaining 84 responses

described examples of common bullying behaviours that included more than one form of aggression. In contrast, of the 75 parents, 13 described examples of common bullying behaviours that were only physical. Nine described only relational behaviours, three described only verbal behaviours, and the remaining 50 responses described commonly bullying behaviours that included more than one form of aggression. Figure 1 shows that the most common examples of bullying described by ECEs and parents were physical aggression, followed by relational and verbal aggression.

Figure 1. Examples of Common Bullying Behaviours Described by ECEs and Parents



ECE's and parent's description of common relational bullying observed in young children highlight the exclusive nature of these behaviours. For example, relational bullying was described as excluding others from play or "rejecting another child because of the way he looks," using "I'm not your friend" and "you can't come to my birthday party" type comments and telling other children not to be friends with a child. One ECE described relational bullying as "emotional blackmail by sulking until another child does what they want," while a parent depicted this form of bullying as "inconsistent socialisation – holding all the power of when I say I'll play with you and when I won't – so being unpredictable and controlling the situation" indicating a level of proactive malicious intent. Descriptions of common physical and verbal bullying behaviours appeared to be less sophisticated and manipulative. Examples of physical bullying included hitting, snatching toys, shoving, pushing, pinching, breaking or ruining another child's creation, and using "standover tactics" to show dominance. Verbal bullying included name-calling, swearing, teasing, screaming and shouting, "saying others are naughty," saying hurtful things like "he's a baby" or "saying a boy is wearing girls clothes." Despite the differences in the forms of bullying behaviour described by ECEs and parents, all these behaviours were examples of bullying behaviours observed in the early childhood setting, home, or other social settings such as playgrounds.

When describing examples of bullying observed in young children, some ECEs ($n = 13$) and parents ($n = 4$) also commented on the function of children's bullying, highlighting the developmental (in)appropriateness of the behaviour. For instance, an ECE and parent stated that physical behaviours

are a common example of bullying "because they [children] don't know how to deal with their frustration" and the "typical push and shove behaviour is common in this age and stage of development." Moreover, ECEs' and parents' perception of the function of the child's behaviour seems to influence how serious they perceive the behaviour. A parent mentioned: "hitting/pushing is often an impulsive decision and due to children learning conflict management/impulse control whereas the exclusion/friendship plays are more hurtful and more serious because it is premeditated."

Labelling young children as bullies

A major theme that was identified from the caregiver's responses was the (in) appropriateness of using the term bullying when describing behaviours used in early childhood. Although the majority of ECEs and parents indicated that young children are capable of engaging in bullying behaviours during early childhood, many raised concern about labelling young children as *bullies*. One ECE stated, "I believe that children are capable of demonstrating bullying behaviour, however, I don't believe that at this age they can be labelled as bullies." Those caregivers who were concerned about using the label suggested that it was difficult to discriminate between normative patterns of behavioural development and intentional aggressive behaviour. For example, an ECE stated that "I don't believe children of this age have a full understanding of what bullying is exactly... to make a conscious decision to be 'bullies'." The challenge discriminating between age appropriate and inappropriate social behaviours was also raised by an ECE who stated that "I don't think I would label them as that [bullies] but I guess I would consider the same behaviour in older children to be bullying" suggesting caregiver's expectations and interpretation of common inappropriate social behaviours during this developmental period may influence their perceptions of whether young children are capable of being bullies and whether the bully label can be appropriately applied.

ECEs and parents who are "unsure" about bullying

Given the considerable number of ECEs ($n = 12$) and parents ($n = 9$) who indicated that they were unsure whether young children were capable of bullying, further exploration of this subgroup seemed necessary. A common theme in these responses was related to some of the challenges in ascertaining whether young children's aggression is intentional and/or whether their behaviours are influenced by factors outside of their control such as environment and modelling. That is when a child lacks the understanding about why they are engaging in bullying-like behaviours or the behaviours are learned through modelling or exposure to adverse environments, there is some reluctance to label these behaviours as bullying. For instance, participants stated:

I believe that children aged between three and five years are capable of demonstrating bullying like behaviour, however, I don't believe they can be labelled as bullies. I don't believe that children of this age have a full understanding of what bullying is... they are still developing an understanding of social behaviour.

I believe that children of this age exhibit behaviours that

are often strongly linked to their environment and experiences that they have had. Often it is around the ability to self-regulate their behaviours which needs to be learnt and if this hasn't been modelled, children resort to hurting others and bullying.

These statements suggest that some caregivers may feel it is inappropriate to identify young children's aggressive behaviour as bullying because their environment and experiences have not provided them with the opportunity to learn appropriate behaviour and this is of no fault of the child. This is reinforced by another ECE's response that children "need to learn and be taught acceptable behaviour as opposed to being labelled naughty or a bully and it is the adults place to encourage these [acceptable] skills." These statements reflect the hesitancy that ECEs and parents experience in deciding whether young children are capable of engaging in bullying behaviours and labelling young children as *bullies*. This challenge may be due to the difficulties in understanding the motives that underlie young children's behaviour during this developmental period and the reasons why they choose to engage in these behaviours.

Perceptions of bullying and demographic variables

Bivariate correlations were used to explore the relationship between ECEs' and parents' perceptions of bullying and age. Fisher Exact Test was used to explore the association between ECEs' and parents' perceptions of bullying and the demographic variables level of education and ECE role in the service. A significant correlation was found between ECEs' perceptions of bullying capability and their age ($r = -.21, p = .04$), indicating that older ECEs were more likely to suggest that children were not capable of bullying compared to younger ECEs. No significant correlations were found between parents' perceptions about bullying capability and their age ($r = -.14, p = .23$). For both ECEs and parents, no significant differences were found between perceptions of bullying capability and level of education and the ECE's role in the service (all $ps > .05$).

Discussion

Findings from this study contribute to a small but growing body of evidence that examines ECEs' and parents' perceptions of young children's bullying capability and the types of behaviours that constitute bullying during this developmental period. Findings suggest that the majority of ECEs and parents believe that preschool-age children are capable of engaging in bullying behaviours and these behaviours are primarily in the form of physical, relational, and verbal aggression. However, it is also important to note that approximately 13% of caregivers indicated that they were unsure about whether young children are capable of bullying, revealing a potential lack of understanding and knowledge about the phenomenon. Of particular interest was the finding that bullying behaviours were viewed differently depending on the age of the child, leading to a reluctance to label behaviours as 'bullying' in younger children.

Caregiver's awareness of bullying represents a crucial factor in understanding the socio-ecological influence on young children's bullying behaviours. Although 74% of caregivers indicated that children between the ages of three

and five are capable of engaging in bullying behaviours, responses differed considerably in terms of what constitutes bullying behaviours. Caregiver's responses indicated that their definition of bullying, the child's age, social maturity, and environmental factors influence how they characterise bullying behaviours and whether the label *bully* can be appropriately applied to this developmental period. It is important for caregivers to recognise that their views and perceptions of bullying can have an impact on the way they respond to these behaviours (Mishna et al, 2005). This study builds on previous research (e.g. Goryl et al, 2013) by identifying an additional subgroup of caregivers who were unsure about whether young children were capable of bullying. There were some similarities between caregivers who indicated that young children were not capable of bullying and those who were unsure as to whether young children could bully. Consistent with other literature, caregivers' responses suggest that some behaviours related to bullying can be considered normative rough and tumble play during this developmental period (Cameron & Kovac, 2016; Harcourt et al, 2014; Sawyer et al, 2011) and may be a result of lack of self-regulation and social skills rather than malicious, intentional behaviour. This was particularly evident in older ECEs who were more likely to indicate that young children were not capable of engaging in bullying. This finding may correspond to these ECEs having a greater understanding of the traditional definition of bullying (Olweus, 1993) and applying this definition to young children's aggressive behaviours. More experienced ECEs may be more aware of discriminating between normative and non-normative patterns in the development of aggression in the early years, thus influencing their perceptions of bullying-like behaviours. In contrast, caregivers who perceive young children as not capable of bullying may downplay the significance of these behaviours and believe that attention towards bullying behaviours is unwarranted (Cameron & Kovac, 2016; Craig & Pepler, 1997; Sawyer et al, 2011), potentially leading to a lack of intervention and response to bullying (Hurd & Gettinger, 2011; Mishna et al, 2005; Kochenderfer-Ladd & Pelletier, 2008). These findings underlie the value of addressing caregiver's uncertainty and negative perceptions about young children's capability to engage in bullying to ensure ECEs and parents are aware of the existence of bullying and the short and long-term consequences associated with these behaviours (Kochenderfer & Ladd, 1996; Vlachou et al, 2011).

Majority of ECEs and parents made few references to key criteria traditionally used to define bullying. This finding puts into question the traditional definition of bullying as applied to the early childhood context, particularly if caregivers do not apply it when judging young children's bullying-like behaviours. Those caregivers who did make reference to traditional criteria emphasised that bullying behaviours indicate power over another and while intentionality was raised, it was with reference to unintentional bullying behaviours because of children's lack of cognitive awareness during this developmental period. Some caregivers mentioned that proactive aggressive behaviours were considered bullying because they were premeditated and thought through, whereas bullying behaviours that young children learnt through modelling were considered normative and

less concerning. Only one participant referred to repetition in her interpretation of bullying and this lack of attention to frequency is consistent with previous studies of parents (Mishna, 2004; Mishna et al, 2005; Sawyer et al, 2011). These findings suggest that understanding the functions and motives of young children's behaviours may help caregivers distinguish between typical developmentally appropriate behaviours and acts of bullying, particularly in terms of the intentionality of the behaviours. That is, not all aggressive behaviours are delivered with the intention to cause harm and this was particularly evident in this study where caregivers interpreted bullying capability based on the different stages of development and age of the child. Aggressive behaviours identified in five year olds were perceived as bullying whereas similar behaviours used by three year olds were more likely to be dismissed as a normal part of young children's social development because children are still learning about acceptable and unacceptable social behaviours during this developmental period. In this case, bullying-like behaviours used by older children may be perceived as more serious because they have the cognitive capacity to engage in behaviour with intent to cause harm and have had more opportunities to learn appropriate social skills. The complexity in determining whether a behaviour is malicious or developmentally appropriate has led some researchers to use terms such as unjustified aggression (Monks et al, 2002) and precursory bullying (Levine & Tamburrino, 2014) when distinguishing between bullying and bullying-like behaviours used in early childhood.

The difficulty in classifying young children's negative behaviours as bullying may also relate to the caregiver's hesitancy to label young children as bullies. A common theme in ECEs' and parents' responses was that while they acknowledged that young children are capable of engaging in bullying behaviours, they were reluctant to label children as bullies because of the challenges in determining whether these behaviours are developmentally appropriate learning experiences or used to intentionally cause malicious harm. This is consistent with previous research which found that ECEs prefer to classify bullying-like behaviours as negative, inappropriate, or unacceptable because of the negative connotation associated with the term that may stick with the children beyond the early years and the intentionality implied (Goryl et al, 2013). Those caregivers who indicated that they were unsure as to whether young children were capable of engaging in bullying were hesitant to use this term because they believed that children were modelling similar behaviours that they had seen in their environment. These findings suggest that caregiver's conceptualisation of bullying progresses and changes as a function of children's age, social cognitive skills, and experiences. Additional research is needed to understand how preschool bullying differs from bullying used by older children to determine when these behaviours become developmentally inappropriate and unacceptable.

While bullying is likely to differ among younger and older children, ECEs and parents suggest that preschool-age children engage in both direct and indirect forms of bullying. Majority of ECEs described bullying behaviours as a combination of physical, relational, and verbal aggression. In contrast, a greater proportion of parents described bullying as only

physical or relational. Other researchers have found that ECEs and parents were more likely to label physical aggression as bullying and considered this form of bullying more serious and worthy of intervention than relational and verbal aggression (Alsaker & Gutzwiller-Helfenfiner, 2010; Sawyer et al, 2011). The observed differences in ECE and parent responses may relate to the different social environments they observe children. One would expect that the types of aggressive behaviours young children use in early childhood settings versus the home environment differ and the thresholds for what is perceived as acceptable and unacceptable in each of these contexts also differs. Indeed, some parents did highlight the influence of siblings on young children's use of bullying-like behaviours and this form of modelling was considered typical in the home context.

Implications

The results of this study hold important implications for understanding bullying, specifically with regard to the early childhood developmental period. The varying ECE and parent responses about what constitutes bullying behaviour in preschool-age children reinforces the subjective nature of the term which may influence the way in which bullying-like behaviours receive attention and intervention (Humphrey & Crisp, 2008; Hurd & Gettinger, 2011; Kochenderfer-Ladd & Pelletier, 2008). ECEs' and parents' responses also indicated the ways in which their perceptions are inconsistent with traditional definitions of bullying as they are presented in the literature. Consistent with other research (e.g. Mishna, 2004; Mishna et al, 2005; Sawyer et al, 2011) ECEs and parents did not acknowledge the repetitive nature of bullying behaviours in their responses, suggesting that there is a need to educate caregivers about the potential negative impact of repetitive bullying-like behaviours (Mishna et al, 2005).

It is crucial to guide ECEs and parents towards a common understanding of the nature of bullying as it is used by preschool-age children. ECEs and parents described physical aggression as the most common form of bullying observed during early childhood. Of particular importance is the number of responses that suggested that relational aggression was a common behaviour observed in preschool-age children, however, did not constitute bullying. It is necessary to emphasise the different forms of bullying-like behaviours that young children use during early childhood and the negative consequences associated with these. In order to do this, ECEs and parents should be given the opportunity to discuss bullying-like behaviours that they have observed and may be uncertain about. This may help ECEs and parents recognise discrepancies in their perceptions and the varying ways in which they respond to these behaviours.

A considerable number of caregivers were concerned about labelling young children as bullies because of the negative connotation associated with the term. While it is important not to stigmatise children from a young age, it is important that caregivers recognise bullying behaviours as they emerge in early childhood. Early childhood is a critical time when young children learn prosocial and non-social behaviours, thus, ECEs and parents should use children's display of negative behaviours as an opportunity to teach

them alternative, more appropriate ways, to respond to social conflict before it escalates to more serious bullying-like behaviours. Therefore, it is imperative to equip ECEs and parents with the knowledge and strategies to guide young children's social behaviours.

Strengths, limitations and suggestions for future research

This study provides a comprehensive exploration of ECEs' and parents' perceptions of bullying, contributing to growing literature examining the nature of bullying within multiple contexts. A real strength of this study was the substantial sample size and use of qualitative methods to understand and compare ECEs' and parents' perceptions of bullying and their beliefs about young children's capability to engage in bullying.

However, there are a number of limitations that should be taken into consideration. Firstly, ECEs and parents were not given a definition of bullying and this may explain the variability in their responses. Given the challenges associated with defining bullying in early childhood, it is recommended that future research explore the point at which aggressive behaviour turns into bullying and whether this differs according to age, gender, and the social contexts in which young children spend most of their time. To do this, researchers will need to engage young children in conversations about the motives behind their behaviour rather than relying on an observer's subjective judgement.

Although consistent with previous studies (e.g. Cameron & Kovac, 2016) and typical of the gender distribution in this profession (Richardson & Watt, 2006), males were not well represented in this study and most participants were NZ European. It is recommended that future research recruit more participants from other ethnic groups such as Māori because cultural factors have been shown to have a significant influence on perceptions of bullying (Harcourt et al, 2014; Hilton et al, 2010). Similarly, it is important to explore factors that have influenced caregivers' perceptions of bullying to determine where these beliefs come from and when they become entrenched. A recommendation for future research is to identify whether caregivers differentiate between aggression and bullying by presenting them with the same behaviours labelled as bullying. A better understanding of caregivers' perceptions will help inform professional development and education to ensure a common understanding of bullying in the early years is formed.

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This manuscript is an original work that has not been submitted to nor published anywhere else.

Compliance with ethical standards

Disclosure of potential conflict of interest

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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The Moderating Effect of Need for Affiliation on Conformity in Response to Group Reactions

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Building on the work of Heerdink et al. (2013), this research assessed the relationship between group reactions and conformity, with feelings of acceptance/rejection proposed to mediate and the need for affiliation to moderate the effect. The direct relationship between the need for affiliation and conformity was also examined. There was a direct relationship between group reactions and cognitive conformity. Furthermore, there was a relationship between group reactions and feelings of acceptance/rejection and between acceptance/rejection and affective and behavioural conformity. Full mediation of acceptance/rejection was not present between group reaction and cognitive conformity. Finally, there was a partial effect for need for affiliation on conformity; however, the moderating effect of need for affiliation was inconsistent.

Keywords: conformity, need for affiliation, group reactions, acceptance/rejection

Imagine as vividly as possible that you and several friends decide to go on a vacation together. After some discussion, the group decides to go to a ski resort. Once realising how expensive flights are, you propose to change plans and take a road trip to the next city. Your friends respond as if they are disappointed, even angry. Take a moment to try to picture everything in your 'mind's eye'. Imagine how you might feel in the situation. Does this negative emotional response lead you to conform to the group, or do you leave the group?

Conformity is a rational process, where individuals construct a norm based on other people's behaviour to determine what is appropriate or right for themselves (Asch, 1952). Conformity occurs when the pressure for uniformity influences individuals to change their behaviours, opinions, or perceptions to become closer to the group norm (Cialdini & Goldstein, 2004). Although the literature on the decision-making processes involved in conformity is vast, comparatively little is known about emotional and motivational influences on those processes. The present study, therefore, aims to contribute to our understanding of this area by looking at the effects of group reactions and feelings of acceptance and rejection on conformity, as well as whether the need for affiliation moderates the relationship between group reactions and feelings of acceptance/rejection.

Emotions in Groups

In recent years there has been an increasing awareness of emotions having interpersonal consequences and functions (Cote, 2005; Elfenbein, 2007; Fischer & Manstead, 2008; Hareli & Rafaeli, 2008; Lazarus, 1991; van Kleef, 2009). Emotions expressed by groups or individuals may influence the behaviours, emotions, and thoughts of other groups and individuals through inferential or affective processes (e.g., liking or emotional contagion; Hess & Bourgeois, 2010; van Kleef, 2009; van Kleef, De Dreu, & Manstead, 2010; see also Molden, Lucas, Gardner, Dean, & Knowles, 2009). Regarding inferential processes, observers often infer information about people's attitudes, feelings, behavioural intentions, and relational orientation based on their emotional expressions (DeWall, 2010; Keltner & Haidt, 1999). For instance, sadness becomes apparent when an individual experiences irrevocable

loss and has little coping potential (Smith, Haynes, Lazarus, & Pope, 1993). Therefore, observers of sadness may infer that the expresser is in need of support, which may lead the observer to offer support (Clarke, Pataki, & Carver, 1996). In addition, when a person is the focus of an angry expression, they may infer that they are to blame and did something wrong, which in turn may inform behaviour (van Kleef, 2009).

Evidence suggests that expressions of emotions can also have an interpersonal influence by provoking affective reactions in observers, and therefore affect their behaviour (Chow, Tiedens, & Goven, 2008; van Kleef, 2009). Emotions can transmit directly to the observer from the expresser by emotional-contagion processes that involve afferent feedback (i.e., physiological feedback from either facial, postural or vocal shifts), imitation, and mirror-neuron activity (van Kleef, 2009). On the other hand, emotional expressions can also affect interpersonal liking and impressions (van Kleef, 2009). One study found that working teams with an angry manager also became angry themselves and acquired a negative impression of the manager, while teams with a happy manager became happy and developed a positive impression of the manager (Sy, Cote, & Saavedra, 2005). Additional studies found that negotiators whose colleagues expressed anger became angry themselves, disliked the colleague and were less willing to meet again. However, people whose colleague expressed happiness became happy and liked the other, and were more satisfied and willing to meet again (van Kleef, De Dreu, & Manstead, 2004; van Kleef, De Dreu, & Manstead, 2004b).

Heerdink, van Kleef, Homan, and Fischer (2013) conducted a series of five studies on social influence and emotions in groups, including the interpersonal effects of emotions in relation to conformity and deviance. In this series of studies, the authors investigated the relationship between majority emotions and feelings of acceptance and rejection by a deviant group member. In one study, Heerdink et al. (2013) used a vignette approach to examine the idea that emotional expressions are indicators of an individual's inclusionary status. Participants imagined themselves in a group where the majority reacted with anger, disappointment, happiness or no emotion to their deviant opinion. Results indicated that

in a situation where a person disagrees with the majority, participants felt more rejected if the group expressed anger. However, deviant group members felt more accepted if the group exhibited happiness.

In another study, Heerdink et al. (2013) explored situations in which the majority's emotions can pressure deviant group members to conform by prompting feelings of acceptance and rejection. The role of perceived cooperativeness was investigated by asking participants to recall a situation where their opinion had differed from those of the group and to report the emotions that were expressed by the majority. Following this, participants were asked to what extent they felt pressure to conform to the situation. Heerdink et al. (2013) preferred this method compared to asking participants whether they actually conformed, given that individuals are generally disinclined to overtly disclose their conformity. Interestingly, evidence suggests that individuals distort their memories of acting with conformity to make it look as if they initially agreed (Griffin & Buehler, 1993). Heerdink et al. (2013) also examined whether the effects of the majority emotions on conformity pressure were facilitated by perceived rejection. The results of this study replicated the finding that the majority's emotions are related to the extent to which individuals feel accepted or rejected. In addition, this study indicated that in situations that were perceived as cooperative, higher conformity pressure was experienced to the extent that less happiness and more anger was expressed, and this correlation was mediated by feelings of rejection. In situations that were perceived as competitive, a similar mediating effect was not found, which is consistent with the idea that conformity is not a meaningful way of showing good group membership in a competitive setting (Heerdink et al., 2013).

Although the aforementioned evidence suggests that emotions influence conformity in interpersonal relationships, individual differences in the motivations to conform should also be considered. One significant issue that Heerdink et al. (2013) suggest require future research is the idea of teasing apart the motivational processes that may underlie the behavioural conformity effect observed. As participants adapted their behaviour because they felt rejected, Heerdink et al. (2013) note the possibility that their participants were driven by a desire to affiliate.

Need for Affiliation as a Moderator of Conformity

To extend from the study conducted by Heerdink et al. (2013), the present study examined the moderating role of need for affiliation (Leary, 2010). The need for affiliation is powerful and pervasive, and it motivates the way in which individuals form positive and lasting interpersonal relationships (Leary, 2010; Steinal et al., 2010). As early as 1967, McGhee and Teevan argued that a high desire for affiliation to referent groups may be associated with greater conformity; however, this relationship has seldom been clearly demonstrated. Rose, Shoham, Kahle, and Batra (1994) found that socially oriented people exhibited a greater need for affiliation, which was consistent with the empirical findings of Homer and Kahle (1988) and Rotter (1966). Furthermore, Rose et al. (1994) found that people with a high need for group affiliation tend to conform more and that conformity

and high group identification were positively related. Rose et al. reasoned that people with strong group identification may be more reliant on others and are therefore more likely to conform to gain approval. In contrast to these findings, numerous other studies found no significant relationship between need for affiliation and conformity (Crutchfield, 1955; Samelson, 1957). These inconsistencies in past literature make it problematic to draw conclusions as to whether or not there is, in fact, a relationship between need for affiliation and one's desire to conform.

The Current Study: Aims and Hypotheses

Although the effects of conformity in group behaviour are clearly important to understand, the brief review above indicates that there are a number of outstanding and unresolved issues. The aim of the present research is to add to our current understanding of the emotional and motivational processes involved in conformity, and to contribute to the resolution of some of the conflicting findings that have been noted. Our approach was to begin by partially replicating the study by Heerdink et al. (2013) to determine whether there was an effect of group reactions on conformity. We first wanted confirm the relationship between group reactions and acceptance/rejection. It was hypothesised that participants would feel more accepted if the group responds with happiness, whereas individuals would feel rejected if the group responds with either negative or neutral emotion.

Next, we were interested in determining if the relationship between group reactions and conformity is mediated by feelings of acceptance and rejection. We hypothesised that the relationship between group reactions and conformity would be mediated by feelings of acceptance and rejection. We hypothesised that participants who felt greater rejection would feel more pressure to conform compared to those who felt accepted in an effort to regain standing in the group. Furthermore, we sought to explore whether the need for affiliation moderated the relationship between group reactions and feelings of acceptance and rejection. It was hypothesised that need for affiliation will moderate the effect of group reactions on feelings of acceptance/rejection, with those participants reporting a high (versus low) need for affiliation feeling greater pressure to conform after experiencing rejection.

Finally, we wanted to assess whether there was a direct relationship between the need for affiliation and conformity. As mentioned, several studies (e.g., Hardy, 1957; McGhee & Teevan, 1967; Rose et al., 1994; Schacter, 1951) have found that conformity is positively correlated with a high need for affiliation, whereas other studies have found no significant relationship (Crutchfield, 1955; Samelson, 1957). Therefore, the relationship between need for affiliation requires clarification.

Methods

Design

The design of this study was partially based on the research of Heerdink et al. (2013). We first looked at the

effect of group reactions on conformity. Group reaction had four conditions (i.e., anger, happiness, disappointment, and neutral). Feelings of acceptance and rejection were proposed to mediate the relationship between group reaction and conformity. Conformity was evaluated using three separate measures: affective (feelings of pressure), cognitive (abiding by the majority), and behavioural (leaving the group). Need for affiliation was proposed to moderate the effect of group reactions on feelings of acceptance and rejection. Finally, a test was conducted to address the inconsistencies regarding the relationship between need for affiliation and conformity (see Figure 1 for an illustration for the proposed relationships among the variables).

Participants were first asked to read a vignette that described a group situation in which the group's emotional response was manipulated (Heerdink et al., 2013). In the vignette, participants were asked to try to imagine as vividly as possible the situation described, imagining that they are in the scenario and how might they feel in the situation. The participant and three close friends had an issue with another friend and had come together to discuss and decide what they should do. All three friends shared the similar ideas, whereas the participant had a conflicting idea. The vignette ended with 'when it is your turn to tell your friends your idea, they don't immediately agree with you.....' followed by 'they then stared blankly with no sign of emotion whatsoever' (neutral/

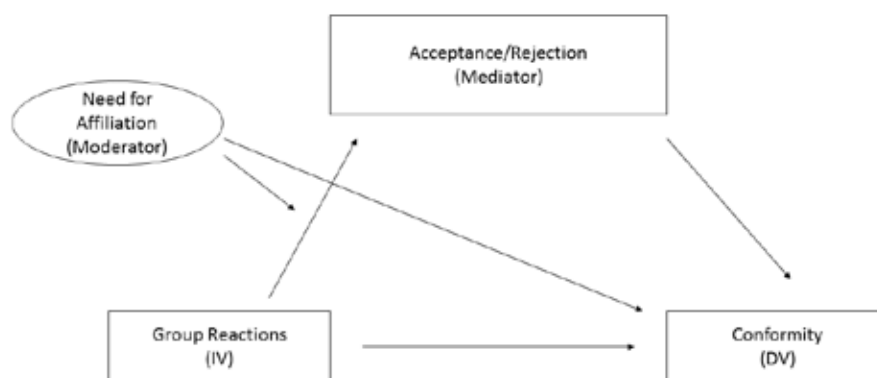


Figure 1. Proposed relationships among group reactions, conformity, acceptance/rejection, and need for affiliation.

Participants

A total of 216 undergraduate participants from a New Zealand university took part in this study, and 181 of the 216 questionnaires were fully completed and were able to be used for analysis. Out of the 181 participants, 163 identified as women and 17 as males. One participant preferred not to say. The sample consisted of 128 who identified as New Zealand/European, 17 as Maori, 1 as Samoan, 3 as Cook Islander Maori, 3 as Tongan, 1 identified as Chinese, 2 as Indian, and 26 identified as other. The average age of participants was 27.63 ($SD = 10.86$). The minimum age of participants was 17 and the maximum was 68.

Materials and Procedure

This study consisted of an online questionnaire, and employed materials similar to those used by Heerdink et al. (2013) including a similar vignette, acceptance/rejection scale, a question on conforming versus leaving the group, and a question on conformity pressure. In addition, the Interpersonal Orientation Scale (IOS; Hill, 1987) was administered. A manipulation check was included at the end of the questionnaire before the demographic items. Demographic items queried participants' gender, ethnicity, and age.

no emotion condition), 'they then looked toward the ground, shaking their heads, clearly disappointed' (disappointment condition), 'they then smile and nod, clearly happy' (happy condition), or 'then they frowned, looking clearly angry' (anger condition). Participants were randomly assigned to one of the four emotional conditions mentioned above, two of which were negative emotions (i.e., anger and disappointment).

The acceptance/rejection scale (Heerdink et al., 2013) measured the extent to which participants felt accepted versus rejected. The scale consists of four items; 'I feel rejected due to the group's reaction,' 'the group's reaction makes me feel alone,' 'the group's reaction makes me feel happy,' and 'I feel supported due to the group's reaction'. The latter two items are reverse coded. The items are scored on a 4-point scale (1= strongly disagree, 2= disagree, 3= agree, and 4= strongly agree). Higher scores on the acceptance/rejection scale indicate greater feelings of rejection. For the current study, the acceptance/rejection scale showed an overall Cronbach's alpha of $\alpha = .84$, which indicates excellent internal consistency.

The three conformity items were all measured using a 7-point scale (Heerdink et al., 2013). The cognitive conformity item asked participants to indicate the extent to which they would 'conform to the group, while disregarding your own thought or idea (abide my majority)' and the item regarding

leaving the group (behavioural conformity) asked participants whether they would 'attempt to find other friends whose reasoning is similar to your own'. Options ranged from 'definitely not conform to the group' to 'definitely conform to the group'. For the affective conformity question, participants were asked to 'please indicate to what extent you felt pressure to be in agreement with the group', and responses ranged from 'absolutely no pressure' to 'an extreme amount of pressure'.

The IOS (Hill, 1987) was developed to focus on four aspects assumed to correlate with affiliation motivation: positive stimulation, attention, emotional support, and social comparison. The positive stimulation subscale (9 items; $\alpha = .85$) reflects social reward; an example item is 'I get satisfaction out of contact with others more than most people realise'. The attention component (6 items; $\alpha = .84$) reflects the social motive of attention seeking; an example is 'I like to be around people when I can be center of attention'. Emotional support (6 items; $\alpha = .89$) reflects the capacity for affiliation to decrease the experience of negative emotions related to fear-provoking or stressful situations. A sample item is 'If I feel unhappy or kind of depressed, I usually try to be around other people to make me feel better'. Finally, the social comparison dimension (5 items; $\alpha = .73$) includes seeking information about self-relevant issues when objective criteria for evaluation are not available. An example is 'I find that I often look to certain other people to see how I compare to others'. Each item was assessed on a 4-point scale ranging from 'strongly disagree' to 'strongly agree'.

Finally, to check whether participants perceived the intended emotional response, at the end of the questionnaire participants were asked to indicate which emotion was present in their scenario: A) Happiness, B) Anger, C) Disappointment, or D) Neutral (no emotion).

The questionnaire was approximately 15 minutes long. As a Koha or offer of reciprocity, participants who fully completed the questionnaire were eligible to enter the draw to win a \$100 gift voucher.

Results

Manipulation Check

A chi-square test of independence was used to determine whether the manipulation of the group's reaction had been successfully perceived by participants. The manipulation check indicated that what people perceived the group reaction to be was significantly different from what was expected, $\chi(N = 181) = 24.34, p < .01$ (refer to Table 1). Each of the four conditions had roughly the same number of participants. Interestingly, participants in the angry condition were more likely to have observed disappointment. Participants in the happy condition were more likely to have equally perceived both disappointment and neutral emotion. Participants in the disappointment condition observed the portrayed emotion correctly for the most part. Furthermore, participants in the neutral condition often observed disappointment. Nevertheless, given that the other measures may detect effects of the manipulation to which our check was not sensitive, we continued with the remainder of the analyses.

Table 1

Manipulation Check of Perceived and Actual Group Reactions

Condition	Anger	Happy	Disappointment	Neutral	Total
Anger	5	3	23	17	48
Happy	1	8	16	16	41
Disappointment	2	0	31	18	51
Neutral	5	0	20	16	41
Total	13	11	90	67	181

Group Reactions on Conformity

Affective conformity

A one-way between groups analysis of variance (ANOVA) was conducted to explore the of impact of groups reactions on feelings of conformity pressure. There was no significant effect ($F(3, 177) = 0.27, p = .85$, partial $\eta^2 = .01$; see Table 2), as each of the conditions' means are approximately the same.

Cognitive conformity

A one-way between groups ANOVA was conducted to explore the impact of group reactions on cognitive conformity. There was a significance difference ($F(3, 177) = 5.48, p = .001$, partial $\eta^2 = .09$) for participants abiding by the majority. Post-hoc comparisons using the Tukey HSD test indicated that the difference was between the happy condition and each of the others ($ps < .03$). All other comparisons were nonsignificant, $ps > .85$. The significant effect can also be seen in Table 2. Individuals in the happy condition tended to disregard their opinion less compared to each of the additional conditions.

Table 2

Means (M) and Standard Deviations (SD) of Conformity Measures by Group Reactions

Group Reaction	Affective M(SD)	Cognitive M(SD)	Behavioural M(SD)
Anger	3.62 (1.66)	4.83 (1.59)	4.25 (1.93)
Happy	3.49 (1.83)	3.78 (1.73)	4.29 (1.93)
Disappointment	3.47 (1.73)	5.02 (1.39)	4.55 (1.68)
Neutral	3.76 (1.59)	4.76 (1.55)	4.1 (2.06)
Total	3.58 (1.69)	4.63 (1.62)	4.31 (1.88)

Behavioural conformity

In relation to behavioural conformity, a one-way ANOVA was conducted to examine whether there was an impact of group reactions on behavioural conformity. There was no significant effect on participants intentions to leave the group, $F(3, 177) = 0.46, p = .71$, partial $\eta^2 = .01$.

In sum, the present study concluded that group reactions did not affect feelings of pressure or intentions of leaving the group. However, there was a cognitive change; individuals in the happy condition tended to disregard their opinion less compared to each of the additional conditions. We therefore used Baron and Kenny's (1986) procedure to assess whether acceptance/rejection mediates the effect of group reaction on cognitive conformity.

Group Reactions on Acceptance/Rejection

To test whether there was a relationship between group reactions and feelings of acceptance/rejection, a one-way between groups ANOVA was conducted. Group reactions did have a significant effect on participants' feelings of acceptance and rejection, $F(3, 177) = 13.55, p < .001, \text{partial } \eta^2 = .19$.

The significant difference was again found in the happy condition (see Table 3). Post hoc Tukey HSD comparisons demonstrated that participants in the happy condition scored lower on rejection than those in the other conditions ($ps < .001$), and differences between each of the other conditions were nonsignificant ($ps > .92$).

Table 3

Means (M) and Standard Deviations (SD) Acceptance/rejection scores by Group Reaction Conditions

Group Reaction Condition	M(SD)
Anger	3.05(0.55)
Happy	2.46(0.60)
Disappointment	3.08(0.59)
Neutral	3.12(0.43)
Total	2.94(0.60)

Acceptance/Rejection Mediating the Effect Between Group Reactions and Cognitive Conformity

A general linear model with a categorical variable (i.e., group reaction) and a continuous moderator¹ (i.e., acceptance/rejection) was used to evaluate the third step of Baron and Kenny's (1986) procedure, which was to determine whether feelings of acceptance/rejection mediated the effect of group reactions on cognitive conformity (i.e., disregarding one's opinion in favour of the group).

A marginally nonsignificant effect was found for feelings of acceptance/rejection ($F(1, 176) = 3.66, p = .06, \text{partial } \eta^2 = .02$) on cognitive conformity. The effect for group reaction was still present, ($F(3, 176) = 6.78, p < .001, \text{partial } \eta^2 = .10$), which indicates full mediation is not applicable.

Acceptance/rejection on affective conformity. Despite the fact that mediation of acceptance/rejection was not present between group reactions and both affective and behavioural conformity, we were still interested in examining whether feelings of acceptance/rejection predict the additional two conformity measures.

Simple regression was used to examine if feelings of acceptance/rejection predict whether individuals felt pressure to conform to the group. Results indicate that there was a relationship between feelings of acceptance/rejection and pressure to conform, $b = 1.14, t(179) = 5.92, p < .001, \text{partial } \eta^2 = .16$. The effect size for acceptance/rejection influencing conformity is large and in the positive direction. This illustrates that as feelings of rejection increase so does conformity pressure.

Acceptance/rejection on behavioural conformity

Simple regression was used to examine if acceptance/rejection predicts intentions to leave the group.

¹ All continuous variables were centred prior to inclusion as moderators in the model.

Results indicated a small, negative effect on intentions to leave the group, $b = -.59, t(179) = -2.56, p = .01, \text{partial } \eta^2 = .04$. As rejection increased, intentions of leaving the group declined.

IOS Moderating the Effect Between Group Reactions and Acceptance/Rejection

IOS general. A series of general linear models with the IOS scales included individually as a continuous variables were used to explore if IOS general and its subscales moderated the effect of group reaction on feelings of acceptance/rejection.

Results indicate that IOS as a whole did moderate the effect of group reactions, $F(1, 171) = 3.40, p = .02, \text{partial } \eta^2 = .06$. The effect was found for participants in the disappointment condition ($b = .51, t(179) = 2.02, p = .05, \text{partial } \eta^2 = .02$), but not in the remaining conditions ($ps > .11$). Results indicated a small, positive effect that suggests that individuals in the disappointment condition with higher need for affiliation were more likely to experience feelings of rejection, compared to each of the other conditions (see Table 4).

With regard to the emotional support and positive stimulation dimensions, mediation was not present. The effect of the mediation was largely driven by the social comparison subscale, $F(3, 171) = 6.11, p = .001, \text{partial } \eta^2 = .10$, and was again present in the disappointment condition, $b = .73, t(177) = 4.00, p < .001, \text{partial } \eta^2 = .09$. Participants in the disappointment condition who scored higher in social comparison tended to feel more rejected. No effects were observed in the other conditions, $ps > .77$.

The relationship between attention and group reactions was marginally nonsignificant ($F(3, 173) = 2.64, p = .051, \text{partial } \eta^2 = .04$), with a small to moderate effect size. The marginal difference was driven by the angry condition, ($b = -.34, t(177) = -1.68, p = .10, \text{partial } \eta^2 = 0.02$) which again was marginally nonsignificant. All other comparisons were nonsignificant, $ps > .84$.

In brief, the present study concluded that the IOS general did interact with the group reaction condition on acceptance/rejection. The effect was largely driven by the social comparison subscale and to some extent the attention subscale, and existed primarily in the disappointment condition.

Table 4

Means (M) and Standard Deviations (SD) of IOS and Subscales by Group Reaction Conditions

Condition M(SD)	IOS	Emotional support	Attention	Positive Simulation	Social Comparison
Anger	2.69(0.40)	2.18(0.64)	2.39(0.62)	2.88(0.54)	2.75(0.43)
Happy	2.57(0.33)	2.00(0.59)	2.26(0.64)	2.71(0.47)	2.80(0.52)
Disappointment	2.59(0.46)	2.04(0.67)	2.23(0.59)	2.78(0.53)	2.75(0.60)
Neutral	2.69(0.43)	2.12(0.61)	2.53(0.52)	2.78(0.51)	2.81(0.58)

Relationship between the Need for Affiliation and Conformity Measures

Finally, the relationship between need for affiliation (as measured by the IOS) and the three conformity measures (i.e., cognitive conformity, behavioural conformity and affective conformity) was investigated using the Pearson correlation

coefficient.

As shown in Table 5, there was a weak positive relationship between the IOS general and affective conformity, indicating that high levels of need for affiliation were associated with high feelings of pressure to conform. Furthermore, a weak positive correlation was found between the attention subscale and affective conformity, which shows that higher scores on attention were associated with higher feelings of conformity pressure. Interestingly, a weak negative relationship was found between the social comparison subscale and cognitive conformity, demonstrating that high levels of social comparison are related to lower levels of conforming to the group, while disregarding one's own thought. The final significant relationship that was present was a weak to moderate positive correlation between social comparison and affective conformity, which shows that higher scores on social comparison were associated with greater pressure to conform.

Table 5

Pearson Correlations Between Need for Affiliation (IOS) and Conformity

Measures	Cognitive	Behavioural	Affective
IOS	-.12	-.07	.15*
IOS_ES	-.04	.01	-.02
IOS_Attention	-.12	-.11	.15*
IOS_POSSTIm	-.05	-.08	.11
IOS_SocCom	-.20**	-.04	.26***

N = 181. IOS = Interpersonal Orientation Scale. * $p < .05$ ** $p < .01$. *** $p < .001$.

Discussion

The aim of the present experimental study was first to partially replicate the study conducted by Heerdink et al. (2013), to determine whether there was an effect of group reactions on conformity. The second objective was to determine whether there was an effect of group reactions on feelings of acceptance/rejection. From this, we were interested in examining if the relationship between group reaction and conformity was mediated by feelings of acceptance/rejection. The third aim was to explore whether the need for affiliation mediates the relationship between group reactions and acceptance/rejection. The final aim was to investigate whether there was a direct relationship between the need for affiliation and conformity.

Key findings suggest that there was no direct relationship between group reactions and affective or behavioural conformity. There was, however, a relationship between group reactions and cognitive conformity. Furthermore, results indicated there was a relationship between group reactions and participants' feelings of acceptance/rejection and between conformity pressure and behavioural conformity. However, acceptance/rejection did not mediate the effect of group reaction on cognitive conformity. The relationship between group reaction and acceptance/rejection was moderated by the (general) need for affiliation. It is important to note that a moderating effect for social comparison was found and a marginally nonsignificant interaction was found for attention. Finally, results indicated that there was a direct relationship between some elements of need for affiliation and conformity.

Manipulation Check

In the present study, the manipulation check replicated from Heerdink et al. (2013) showed inconsistent findings. Out of the four conditions, the disappointment condition was the only condition to be observed correctly by the majority of participants. In contrast to this finding, the manipulation check conducted by Heerdink et al. (2013) confirmed that the majority reaction was perceived correctly. Given that the present study's manipulation check was employed slightly differently, this could be a possible reason for the inconsistencies in the findings. For instance, at the completion of the experiment Heerdink et al. (2013) asked participants to demonstrate to what extent the group had reacted with anger, enthusiasm and disappointment (from 1 = not at all to 7 = very much). The present study added an additional reaction (i.e., neutral) and at the completion of the questionnaire asked participants to demonstrate which emotion was present in the above vignette, which was presented in a multiple choice format. In the present study's vignette, the group reactions were projected in a rather explicit manner, and one possibility is that participants inferred that it was an intentionally misleading question. For instance, at the end of the vignette participants in happy condition were told that the group members then 'smile and nod, clearly happy.' Clearly, a happy emotional response was demonstrated, yet the majority of participants still choose either disappointment or neutral.

Perhaps a more realistic interpretation pertains to the ambiguous wording of the question (i.e., "Please indicate which emotion was present in the above scenario"). It is unclear whether this refers to the emotion expressed by the group members, the emotional reaction of the participant, the emotion initially expressed to the group by the participant, or some combination of the above. This ambiguity may have affected participants' responses to the manipulation check item, despite the manipulation itself having the intended effect. An individually administered debriefing, or perhaps additional follow-up questions given to a subset of participants might have clarified the interpretation of this item. Unfortunately, this was not possible due to the anonymous and online nature of the data collection.

Group Reactions on Conformity

There were a number of inconsistencies between the results of the present study and those of Heerdink et al. (2013). One explanation could be due to the cultural identity of participants. Heerdink and colleagues (2013) did not specify the ethnicity of their participants; however, their study was conducted in the Netherlands, which is generally considered an individualistic culture (Triandis, 1994). Collectivist cultures tend to define themselves as members of a group and subordinate their personal goals to the group's goals (Mills & Clark, 1982). On the other hand, individuals from an individualistic culture value individual achievement, self-reliance and personal goals (Fong & Wyer, 2003; Kim & Markus, 1999; Markus & Kitayama, 1991; Triandis, 2001). People from individualistic cultures often have greater skill when it comes to entering and leaving new social groups, and they make acquaintances easily (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988).

Although the majority of participants in the present study

identified as NZ European, there is a considerable influence of Maori and Pacific Island culture on New Zealand society (Houkamau & Sibley, 2010). Maori have strong connections with whanau (family) and iwi (tribe; Houkamau & Sibley, 2010). Furthermore, Pere (1979, 1988) noticed that whanaugatanga (i.e., the mutual responsibilities and relationships with group members) provide individuals with a sense of identity. Durie (1994) mentions that the Western ideal of independence and 'standing on your own two feet' is seen as maladaptive by Maori people, while interdependence, connectedness, and emphasis on whanau is actively encouraged. Unfortunately, sample sizes in the present research prevented further analyses to determine whether participants' ethnicity moderated the observed effects; however, it is possible that either a more collectivistic orientation or a greater cultural heterogeneity accounts for some of the variability in the data (Jetten, Postmes, & McAuliffe, 2002; Oh, 2013).

Group Reactions on Acceptance/Rejection

It was hypothesised that participants would feel more accepted if the group responds with happiness, whereas participants would feel more rejected if the group responds with either anger, disappointment, or a neutral emotion. In this study, results suggest that participants in the happy condition reported fewer feelings of rejection (i.e., feeling more accepted). This finding is consistent with Heerdink et al. (2013), who found that after an angry reaction, participants reported feeling more rejected, whereas after a happy response, participants felt more accepted. Despite what Heerdink et al. (2013) found, various limitations were discussed regarding the methodology. For example, the use of a vignette gave more experimental control but may be criticised for drawing on naïve concepts about emotions (Parkinson & Manstead, 1993), rather than actual reactions to emotional expression.

Furthermore, additional studies suggest that individuals who receive an angry expression tend to experience a threat to their need to belong (Baumeister & Leary, 1995). This is highly unpleasant and motivates one's behaviour to improve the level of acceptance in the group (Williams, 2007). Hollander (1960) argues that by conforming to the group norm, the deviant individual can show that they are a 'good' group member, which increases the likelihood of acceptance (Steinel et al., 2010; Van Kleef, Steinel, Van Knippenberg, Hogg, & Svensson, 2007).

Acceptance/Rejection Mediating an Effect between Group Reactions and Cognitive Conformity

Our study found a marginally nonsignificant effect for acceptance/rejection and cognitive conformity while controlling for group reactions. The effect for group reactions on cognitive conformity was still present, which indicates that full mediation is not possible. The small effect size for acceptance/rejection suggests that even partial mediation is unlikely. On the contrary, Heerdink et al. (2013) indicated that in situations that were perceived as more supportive, higher conformity pressure was experienced when anger was expressed. Interestingly, they found that this relationship was mediated by feelings of rejection; though in situations perceived as more competitive this mediation was not found

(Heerdink et al., 2013).

Acceptance/Rejection on Affective Conformity and Behavioural conformity

For both the additional conformity measures (e.g., affective and behavioural conformity), it was hypothesised that participants who felt greater rejection would conform more compared to those who felt more accepted, despite the lack of mediation of group responses.

The results for affective conformity indicate that the higher feelings of rejection an individual felt, the more pressure they felt to conform. In relation to the effect of acceptance/rejection on behavioural conformity, results suggest that there is an effect of acceptance/rejection on behavioural conformity (i.e., intentions of leaving the group): as feelings of rejection increase, intentions of leaving the group decline. That is, participants who feel accepted are more likely to leave the group.

Results from Heerdink et al. (2013) suggest that the majority's emotional expression influence feelings of acceptance or rejection. These feelings of acceptance/rejection can influence how an individual relates to conformity pressures or impede behavioural conformity. According to Heerdink et al. (2013), when the majority expresses happiness in response to deviance, the deviant individual feels accepted and in turn, is not likely to change their behaviour and is expected to persist in deviance. On the other hand, if the majority expresses anger, the deviant individual feels rejected and therefore will most likely be motivated to re-establish their sense of belonging in the group by conforming (Heerdink et al., 2013). The consequence of behavioural conformity is that the deviant individual's opinion is eliminated and by conforming the individual can demonstrate commitment to the group's goals and identity (Klein, Spears, & Reicher, 2007), which in turn can increase acceptance from the group (Hollander, 1960; Levine & Moreland, 1994). It could be argued that feelings of rejection elicit a response that participants want to remain in the group in hopes to gain acceptance and show commitment. However, when an individual has feelings of acceptance within the group, the desire to gain the favour of the group is lessened because acceptance is met and comfort is found.

Need for Affiliation Moderating the Effect Between Group Reactions and Acceptance/Rejection

The present study demonstrated an interaction between group reactions and feelings of acceptance/rejection, which may be moderated by the need for affiliation. The effect was largely driven by the social comparison subscale and in the disappointment condition. For those individuals in the disappointed condition, a greater need for affiliation was associated with greater feelings of rejection. These findings to some extent support the hypothesis that need for affiliation functions acts as a moderator between group reactions and acceptance/rejection. In addition, partial mediation was suggested with regard to the attention subscale. This study represents the first attempt to examine the moderating effects of need for affiliation on group reactions and acceptance/rejection. Although firm conclusions are difficult to draw based

on the current findings, past literature suggests that need for affiliation could be an important variable in determining whether an individual remains independent or conforms to group norms (McGhee & Teevan, 1967).

Need for Affiliation and Conformity

The present study partially supported the hypothesis that there is an association between need for affiliation and conformity. There was a correlation between feelings of need for affiliation (general) and affective conformity; therefore, greater feelings for need for affiliation were associated with higher levels of pressure to conform. Furthermore, findings suggest a correlation between the attention subscale and affective conformity, and a relationship was found between the social comparison subscale and both cognitive and affective conformity.

Past research has found inconsistencies in the relationship of need for affiliation and conformity. Several studies found that the need for affiliation is associated with conformity (Hardy, 1957; McGhee & Teevan, 1967; Rose et al., 1994; Schacter, 1951). However, additional studies suggest that there is no relationship between need for affiliation and conformity (Crutchfield, 1955; Samelson, 1957). One study by Hardy (1957), found that high need for affiliation groups conformed more under conditions of non-support than under conditions of support. The moderate need for affiliation group was found to conform under both conditions. However, the low need for affiliation group conformed more under conditions of support than non-support; though participants in the low group were considered to be responding more to the objective content compared to the social structure.

Based on Heerdink et al. (2013) results, individuals who have greater feelings of need for affiliation felt more rejected and feelings of rejection was associated with higher pressure to conform or changes in behaviours related to conformity. Contradictions are still present, and questions remain regarding the association between need for affiliation and conformity; however, the present study represents an important step in understanding the nuances of this relationship.

Limitations and Future Directions

There were several limitations to this study. First, the sample was obtained from a fairly demographically limited population as most participants were young adults, female and the majority identified as NZ European. Different results may have been obtained if the sample had included a similar male to female ratio, participants of more varied age, and with greater proportions of non-European ethnic identities. Gathering results from a diverse population ensures that results can be generalised to wider populations. It may be beneficial to include an equal female to male ratio and compare under which conformity measure females and males conform. It may also be worthwhile to examine whether there is a cultural difference between Maori and NZ European and the relationship of group reactions on conformity and feelings of acceptance and rejection.

An additional shortcoming of the present study was that the respondents were offered an incentive (koha) which involved a prize draw of a \$100 shopping voucher. This might

have had impacted the likelihood of true responses, as participants were more likely to complete the questionnaire with hopes of winning the prize draw and might not have been motivated to devote full cognitive resources to the task. The consequences of this lead to questions regarding the genuineness of participants' responses.

Additional enquiry into why there was only a cognitive change in conformity compared to a behavioural or affective change would also be valuable; for instance, whether an individual had an internal fear response regarding the consequences of leaving the group which prohibited them from actually leaving compared to simply considering it.

Summary and Conclusion

In summary, this study has explored the cognitive, affective, and behavioural components of conformity and feelings of acceptance and rejection in response to group reactions. Furthermore, research regarding the moderating effects of need for affiliation on conformity in response to group reactions were also evaluated.

There was no direct relationship between group reactions and affective or behavioural conformity. There was, however, a relationship between group reactions and cognitive conformity. Furthermore, a relationship was found between group reactions and participants' feelings of acceptance/rejection and between conformity pressure and behavioural conformity. Acceptance/rejection did not mediate the effect of group reaction on cognitive conformity, but the relationship between group reaction and acceptance/rejection was moderated by the (general) need for affiliation. A moderating effect for social comparison was found and a marginally nonsignificant interaction was found for attention. Finally, results indicated that there was a direct relationship between some elements of need for affiliation and conformity.

The results of the present study need to be cautiously interpreted. Nevertheless, the findings add to previous research and clarify the effects of group reactions on conformity and feelings of acceptance/rejection. It is hoped that the contributions of the present study encourage further research into the relationship of the need for affiliation and conformity.

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