Mental Health First Aid for Eating Disorders: 
the development of first aid guidelines 
and interventions for the public

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Abstract

Background

Eating disorders are a significant health issue. They commonly affect young women, create considerable disability and impose great burden on individuals, their family and community. Despite the availability of effective treatments, very few people with a diagnosable eating disorder seek appropriate treatment and public knowledge of symptoms and their effects is poor. If the considerable burden caused by eating disorders is to be reduced, interventions that increase the public’s knowledge, and the likelihood of help-seeking by individuals with eating disorders, are needed. Interventions that target the social network appear to be the most promising because of the important role family and friends can play in recognising an eating disorder, reducing stigmatising attitudes and facilitating engagement with treatment.

One promising community-based intervention is mental health first aid training. Mental health first aid is defined as the help provided to a person developing a mental health problem or experiencing a mental health crisis. The first aid is given until appropriate professional treatment is received, or the crisis resolves. Mental health first aid training courses provide information to the public about how to assist those with mental illness to seek appropriate help, and are known to be effective in increasing mental health literacy, the provision of assistance, and in decreasing stigmatising attitudes. The development of mental health first aid interventions for eating disorders provides a promising avenue for increasing appropriate help-seeking and ultimately decreasing the burden they cause.
This research aimed to establish which strategies should be used by members of the public when providing mental health first aid for eating disorders, and to explore how providing interventions, which describe and encourage the provision of appropriate mental health first aid strategies, affects mental health literacy and help-seeking behaviours.

**Method**

This research involved three separate studies. The first was a Delphi consensus study, which used three different expert panels consisting of 14 consumers, 24 carers and 27 clinicians, to develop a guideline document describing how members of the public can best provide mental health first aid to someone who is developing or experiencing an eating disorder.

The second study was an online evaluation of the usefulness and impact of the previously developed guideline document, on web-users’ first aid behaviours. This involved providing web-users who downloaded the document with two consecutive, self-report questionnaires, to assess how the information had been received and utilised.

The third study was an uncontrolled evaluation trial of a mental health first aid training intervention, designed to teach young adults in contact with those at risk of developing an eating disorder, how to provide appropriate mental health first aid strategies for eating disorders. The evaluation, which aimed to assess the effectiveness of the training in changing knowledge, attitudes and behaviours towards eating disorders, involved a series of self-report questionnaires administered at baseline, post-training and six month follow-up.

**Results**
In the first study, 200 first aid strategies, from a total of 456 gleaned from a systematic literature search, were endorsed by 80% or more of expert participants as essential or important to the provision of mental health first aid for eating disorders. These strategies were used to develop the document *Eating Disorders: First aid guidelines*. The inclusion of experts from clinical, carer and consumer backgrounds ensured that the developed guidelines covered broad content pertinent to providing assistance specifically for eating disorders.

In the second study, 362 participants reported downloading the eating disorders guideline document over a 10 month period. These web-users ranged widely in age and country of residence, though a very large majority were women. The most common reason for accessing the guideline document was because of contact with individuals with eating disorders in the workplace. Ninety-six participants completed the second questionnaire and provided data about the utility and impact of the guidelines. This showed that web-users who access the guidelines pay careful attention to content and regard the information as helpful and relevant for the future. Twenty-two participants reported trying to assist someone with an eating disorder after reading the guidelines. Although it was found that only a small number of web-users changed their first aid behaviours, the guidelines appeared to play a role in increasing help-seeking in a number of instances where first aid was provided. The guidelines were also reported to be associated with more understanding and support, as offered by web-users providing first aid.

In the third study, 85 participants were presented with a four hour, single session, eating disorders mental health first aid training intervention. Of those, 73 participants completed the questionnaires at all time points. Results for the items assessing
knowledge showed that the training was associated with an immediate and sustained improvement in eating disorder problem recognition, knowledge of effective treatments and appropriate first aid strategies. However, changes to a number of other areas of knowledge were not maintained over time. Results for the items assessing attitudes towards eating disorders indicated that the sample at baseline were already very empathic and it was therefore difficult to produce any further change. Findings from measures of behavior suggested that there were not statistically significant changes over time, however, information provided in open-ended responses showed some limited evidence for a change in first aid behaviours, and an increase in appropriate help-seeking, albeit among a small number of participants. Of the 73 participants, 20 had provided assistance to someone with a suspected eating disorder, seven of whom reported that professional help had been sought as a result of their first aid interaction. Furthermore, many participants reported feeling more understanding and supportive towards individuals with eating disorders, as a result of the training, irrespective of whether they had an opportunity to provide mental health first aid. The results also provided no evidence that the training had a negative impact on the mental health of participants or the individuals they provided assistance to. Many of the findings from this third study concurred with those of previous mental health first aid training evaluations employing a six month follow-up period.

**Discussion**

This research established that there are appropriate mental health first aid strategies which members of the public can use when providing assistance to someone developing or experiencing an eating disorder. These strategies were used to create the document *Eating Disorders: First aid guidelines*. This research also established that
these guidelines can be usefully implemented and are associated with the provision of appropriate mental health first aid strategies to those with eating disorders and with subsequent, appropriate help-seeking. Although the third study provided some preliminary evidence that the training intervention was associated with increases in some aspects of mental health literacy, future research is needed to elucidate the optimal duration of the training to achieve sustained increases in knowledge and attitudes, and to assess whether statistically significant changes in first aid behaviour emerge over time. The current investigation, however, can confirm that the concept of mental health first aid can be usefully applied to improve mental health literacy and help-seeking behaviours for the eating disorders.
Declaration

This is to certify that:

i. The thesis comprises only my original work towards the PhD except where indicated in the Preface

ii. Due acknowledgement has been made in the text to all other material used

iii. The thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices

Laura Merilyn Hart
March, 2011
Preface

This thesis comprises the original work of the author. In all research studies, the author was the Principal Investigator, however, there were other contributors who must be acknowledged and who have been credited as co-authors where work has been published or presented.

The research study presented in Chapter 2.1: Development of guidelines on mental health first aid for eating disorders was published as: Hart, L. M., Jorm, A. F., Paxton, S. J., Kelly, C. M., & Kitchener, B. A. (2009). First aid for eating disorders. Eating Disorders: The Journal of Treatment & Prevention, 17(5), 357 - 384. This research was also presented at the 2009 Australian New Zealand Academy of Eating Disorders Conference, the 2009 Australasian Society for Psychiatric Research Conference, the 2010 International Conference on Eating Disorders and 2010 International Congress of Applied Psychology. These publications acknowledge the work of Professors Tony Jorm and Susan Paxton, who supervised the project, and co-authors Claire Kelly and Betty Kitchener, who provided Delphi method expertise during the working group drafting of questionnaires and the guideline document.

The research study presented in Chapter 2.2: Guidelines on Mental Health First Aid for Eating Disorders: An online evaluation of usefulness and impact on first aid comprises part of a body of work submitted for publication as: Hart, L. M., Jorm, A. F., Paxton, S. J., & Cvetkovski, S. Mental health first aid guidelines: an evaluation of impact following download from the world wide web. Early Intervention in Psychiatry. This research was also presented at the 2010 Australian New Zealand Academy of Eating Disorders conference. These publications acknowledge the work of Professors
Tony Jorm and Susan Paxton, who supervised the project, and co-author Stefan Cvetkovski who provided consultation on data management and statistical methods.

Although not directly represented in the research conducted as part of this thesis, the literature review completed in *Part 1. Background to research* gave rise to an associated systematic review which is to be published as: Hart, L. M., Granillo, M. T., Jorm, A. F., & Paxton, S. J. (In press). Unmet need for treatment in the eating disorders: A systematic review of eating disorder specific treatment seeking among community cases. *Clinical Psychology Review.*
I would like to acknowledge the contribution of my supervisors Professor Tony Jorm and Professor Susan Paxton for their assistance in the preparation of this thesis and the original research that underpins it. In addition to their professional research guidance, I would also like to acknowledge the profound impact their mentoring has had on my opportunities and experiences as a young researcher. I am very lucky to have had such a positive supervision experience and I sincerely thank them for their generosity of time and wisdom, for their expertise, and kind words of encouragement. I thank Susan in particular for sharing her insight and passion for the field of eating disorders with me, and for encouraging me to participate in its professional activities. I thank Tony especially for his tireless dedication, his depth of knowledge, pragmatism, benevolence and belief in my abilities.

I gratefully acknowledge the time and effort of all the participants involved in this research. For the experts who contributed their wisdom, the web-users their interest, and the students and staff their time to attend training and complete hours of questionnaires, I am very thankful. Without you, this research would not exist.

I would also like to thank Australian Rotary Health for their generosity in funding this research through the Ian Scott Scholarship program, and for providing me with opportunities as a young researcher to attend media training and Rotary events. I also thank The Butterfly Foundation for their contribution via the PhD Top-Up scholarship, which greatly improved the quality of the resources I was able to provide to participants.
I acknowledge also, Orygen Youth Health Research Centre, which has provided practical support and assistance throughout my studentship. In particular, I would like to thank Claire Kelly, Betty Kitchener, Julie Blasioli, Stefan Cvetkovski and Andrew Mackinnon for their time and contribution to this research, and the other the Mental Health Literacy PhD students for sitting through practice presentations of these data and listening to me when bemoaning the state of my research.

I’d like to thank my family and friends for their tolerance and understanding, especially Merilyn and Joan. Finally, I acknowledge the enormous contribution to this research made by my partner Patch, through his personal support, encouragement and humour, without which, I would have been lost.
Foreward

Eating disorders are a significant health issue and interventions that increase the public’s knowledge and likelihood of help-seeking, are needed. Mental health first aid interventions may be effective in achieving these goals. This project will evaluate interventions designed to develop knowledge of and skills in mental health first aid for eating disorders. It is presented in three parts.

The first part provides a background to the research by outlining the problem of eating disorders, which interventions are currently available to improve knowledge and help-seeking for eating disorders, and the current evidence to suggest that mental health first aid interventions may be effective in increasing mental health literacy and help-seeking behaviours. The second part provides a description of the three research studies conducted. It outlines the relevant literature, specific aims, research methods, results, findings and conclusions, of each study. The third part provides a discussion of the research project as whole, outlines the findings, what can be concluded from them, and what implications they have for future research and practice.
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1. Background to research
Chapter 1.1: The problem of eating disorders

“Eating Disorders are about everything going on in life - stress, coping, pain, anger, acceptance, validation, confusion, fear - cleverly (or not so cleverly) hidden behind phrases like "I'm just on a diet".”

- Something Fishy (website)
Eating disorders and disordered eating

Eating and exercise behaviours can be conceptualised as a continuum, from healthy to disordered (Shisslak, Crago, & Estes, 1995). A person who lies at the healthy end of the continuum enjoys food and eating, has a nutritionally balanced diet, will exercise for health or recreation, and will engage in these behaviours for reasons unrelated to negative feelings about self-worth, shame or guilt about body shape or weight (Falk, Sobal, Bisogni, Connors, & Devine, 2001).

A person in the middle of the continuum may have a diet that is not entirely nutritionally balanced but includes a wide range of foods, will desire to be a lower weight or be unhappy with some parts of their body, may restrict food groups or change their eating patterns to lose weight (i.e. go on a diet), may be slightly underweight, normal weight or slightly overweight, may exercise too little or too infrequently, but will generally have a relationship with eating and exercise that does not interfere with their ability to engage in positive relationships, work, school or family commitments (Patton, 1988; Polivy, 1987). Young adult women tend to fall somewhere in the middle of this continuum, in a region Rodin, Silberstein, & Striegel-Moore (1984) labelled “normative discontent”. The average woman that is, will feel ashamed of and displeased about her body and will engage in mildly disordered or restrained eating and exercising.

A person who lies at the disordered end of the continuum engages in unhealthy eating and exercise behaviours that are influenced by negative feelings about the self. A person at this end of the continuum may have an intense dissatisfaction with their body, due to an over valuation of weight or shape, which leads to feelings of shame about their appearance and to feelings of guilt about their eating behaviours. To ameliorate these negative feelings, or to enhance positive feelings of control and achievement, this
person engages in extreme weight-control efforts such as dieting, restricted eating, fasting, self-induced vomiting, misuse of laxatives, diuretics or other medications, or excessive exercise. In response to dietary restriction, the person may also feel compelled to binge eat, where a large amount of food, often with high calorie content, is consumed in short period of time. During a binge episode, the person may feel a loss of control over their eating and worry that they cannot stop. Alternatively, a person at this end of the continuum may engage solely in binge eating, without the weight-control behaviours, in order to soothe distressing feelings of low self-worth, shame or guilt (Ackard, Croll, & Kearney-Cooke, 2002; Palmer, 2005; Striegel-Moore & Cachelin, 2001).

At the very disordered end of the continuum lie those with a clinical eating disorder. According to the DSM-IV-TR the eating disorders diagnostic category refers to the class of psychological disturbances that are “characterized by severe disturbances in eating behaviour” (American Psychiatric Association, 2000, p. 583). The DSM-IV-TR provides two specific diagnoses: anorexia nervosa (anorexia), which is characterised by a refusal to maintain a minimally normal body weight, and bulimia nervosa (bulimia), which is characterised by repeated episodes of binge eating followed by inappropriate compensatory behaviours to control weight. A third diagnostic category, eating disorder not otherwise specified (EDNOS), is also provided for disorders that are clinically significant, but do not meet criteria for either anorexia or bulimia. Binge eating disorder, which is characterised by repeated binge episodes, marked distress about eating habits, but the absence of compensatory behaviours, is also currently listed as a provisional diagnosis under the EDNOS category. As binge eating disorder is to be recognised as a distinct diagnostic category in DSM-5 (American
Psychiatric Association, 2010), it will be treated in this thesis as a separate diagnosis to that of EDNOS.

**Prevalence of eating disorders**

Eating disorders are often thought of as low prevalence disorders. They are, however, common among young women and increasingly common among young adult men (Hay, Mond, Buttner, & Darby, 2008). Perhaps the most reliable estimates for prevalence of mental illnesses come from the World Mental Health Surveys Initiative, which involves individual nations conducting population-based mental health surveys, under the direction of the World Health Organisation (Kessler, Haro, Heeringa, Pennell, & Ustun, 2006). These large-scale investigations employ the Composite International Diagnostic Interview (CIDI); a diagnostic instrument that uses the criteria from both the DSM-IV and the ICD-10 (American Psychiatric Association, 2000; World Health Organization, 1994) to diagnose probable cases based on symptom profile (Kessler & Ustun, 2004). It is because of particular strengths in study design that these prevalence estimates are considered to be the gold standard; the surveys are always designed to include a nationally representative sample, they are conducted via face-to-face interviews, and they construct probable diagnoses based on a conservative and stringent set of criteria (Kessler, et al., 2006).

In the last decade, four national mental health surveys (conducted in the Netherlands, Germany, the United States and New Zealand), have reported on the prevalence, disability and mental health service use associated with the eating disorders. The percentage of adults estimated to experience an eating disorder, as reported in each of the studies, is shown in Table 1. While the CIDI national surveys suggest that the
eating disorders are relatively rare, it is important to note that these studies, with the exception of the American survey, only investigated cases who met the strict DSM-IV criteria for either anorexia or bulimia (Bijl, Ravelli, & van Zessen, 1998; Hudson, Hiripi, Pope, & Kessler, 2007; Jacobi, et al., 2004; Wells, et al., 2006); whereas a wealth of research investigating the prevalence, disability and mental health service use associated with a diagnosis of EDNOS, in fact paints a very different picture of the prevalence of the eating disorders.

Traditionally, ‘not otherwise specified’ categories have been used in psychiatric classification to represent a class of psychopathology that does not meet criteria for an established or emerging illness; a label for disorders which either lie beneath the threshold of a clinically significant presentation, or are atypical in their profile of symptoms and are therefore not classifiable under the major diagnoses (American Psychiatric Association, 2000). Because ‘not otherwise specified’ categories are generally considered of less clinical importance than the major diagnostic categories, they are often excluded by large and important research programs, such as the World Mental Health Surveys Initiative (Australian Bureau of Statistics, 1998, 2008). While for many psychiatric disorders this does not present a problem for understanding aetiology, epidemiology, identification, treatment, management or prevention; for the eating disorders, exclusion of the EDNOS category poses a substantial problem.
Table 1

Results from the four National Mental Health Surveys investigating eating disorders showing demographics and prevalence by disorder.

<table>
<thead>
<tr>
<th></th>
<th>Total sample size</th>
<th>Response rate</th>
<th>Age range</th>
<th>Prevalence&lt;sup&gt;B&lt;/sup&gt; Anorexia</th>
<th>Prevalence Bulimia</th>
<th>Prevalence Binge Eating Disorder</th>
<th>Prevalence Any Eating Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12month lifetime</td>
<td>12month lifetime</td>
<td>12month lifetime</td>
<td>12month lifetime</td>
</tr>
<tr>
<td>Netherlands (1998)&lt;sup&gt;A&lt;/sup&gt;</td>
<td>7,147</td>
<td>69.7%</td>
<td>18-64</td>
<td>&lt;0.1* 0.1</td>
<td>0.4 0.6</td>
<td>NA NA</td>
<td>0.4 0.7</td>
</tr>
<tr>
<td>Germany (2004)</td>
<td>4,181</td>
<td>87.6%</td>
<td>18-65</td>
<td>NA NA</td>
<td>NA NA</td>
<td>NA NA</td>
<td>0.3 0.8</td>
</tr>
<tr>
<td>New Zealand (2006)</td>
<td>12,992</td>
<td>73.3%</td>
<td>16+</td>
<td>&lt;0.1* 0.6</td>
<td>0.4 1.3</td>
<td>NA NA</td>
<td>0.5 1.7</td>
</tr>
<tr>
<td>United States (2007)</td>
<td>9,282</td>
<td>70.9%</td>
<td>18+</td>
<td>&lt;0.1* 0.6</td>
<td>0.3 1.0</td>
<td>2.1 4.5</td>
<td>4.2 5.1</td>
</tr>
</tbody>
</table>

A - Years shown are dates of publication, not dates of data collection
B - Prevalence is reported as a percentage of the surveyed population meeting CIDI diagnostic criteria
C - Not applicable because specific diagnostic category was not investigated or reported
* - No cases found
A burgeoning field of evidence has revealed that the diagnosis of EDNOS is the most common classification of eating pathology. EDNOS has been reported as representing a majority of cases in eating disorder specialty clinics (Bunnell, et al., 1990; Button, Benson, Nollett, & Palmer, 2005; Dalle Grave & Calugi, 2007; Rockert, Kaplan, & Olmsted, 2007), both private and community outpatient treatment centres (Martin, Williamson, & Thaw, 2000; Ricca, et al., 2001; Turner & Bryant-Waugh, 2004) and non-treatment seeking community samples (Bulik, Sullivan, & Kendler, 2000; Hudson, et al., 2007; Machado, Machado, Goncalves, & Hoek, 2007; Wade, Bergin, Tiggemann, Bulik, & Fairburn, 2006; Walters & Kendler, 1995). Furthermore, there is mounting evidence to suggest that a diagnosis of EDNOS does not simply represent a mild variant of the major diagnoses of anorexia or bulimia (Fairburn & Bohn, 2005; Garfinkel, Kennedy, & Kaplan, 1995; Thomas, Vartanian, & Brownell, 2009). Epidemiological studies that have investigated broader diagnostic criteria and measures of psychological distress, psychiatric co-morbidity and levels of psychosocial impairment, reveal that there is a large group of cases who are currently considered ‘sub-threshold’, but who none-the-less experience significant disability associated with their eating disorder symptoms (Button, et al., 2005; Dalle Grave & Calugi, 2007; Striegel-Moore, Dohm, et al., 2000; Walters & Kendler, 1995). For example, the DSM-IV criteria for bulimia requires that an individual binges and purges at least twice a week for a minimum period of 3 months (American Psychiatric Association, 2000), yet investigations of ‘not otherwise specified’ cases show that individuals who binge once a week are similar on most relevant clinical dimensions (G. T. Wilson & Eldredge, 1991). Another example is the women whose symptoms meet all the criteria for anorexia, yet are still menstruating. Currently, although ‘menstruating anorexia’ is more common than anorexia with amenorrhea (Wade, et
al., 2006; Walters & Kendler, 1995), these cases fall into the EDNOS category. Because large samples of women with ‘menstruating anorexia’ have been noted since the 1970s, the validity of the amenorrhea criterion for a diagnosis of anorexia has long been criticised by clinicians and researchers (Garner, Garfinkel, & O'Shaughnessy, 1985; Theander, 1970; Walters & Kendler, 1995). The additional complexity of how early onset anorexia should be defined, which often occurs prior to menarche, as well as the role of the birth control pill masking primary amenorrhea in women who are extremely underweight, have also been noted (M. Fisher, et al., 1995; Gilchrist, Ben-Tovim, Hay, Kalucey, & Walker, 1998; Madden, Morris, Zureynski, Kohn, & Elliot, 2009; Uyeda, Tyler, Pinzon, & Birmingham, 2002). Indeed, some studies have shown that by excluding the requirement for amenorrhea in anorexia, up to 50% more cases would meet the clinical criteria (Machado, et al., 2007; Wade, et al., 2006; Walters & Kendler, 1995).

Further evidence for the importance of EDNOS cases comes from cluster analysis studies, which have consistently shown that the symptom profiles of EDNOS cases reliably cluster as distinct subgroups, closely representing the associated major diagnoses, rather than as an homogenous sub-threshold class (Bulik, et al., 2000; Mizes & Sloan, 1998; Williamson, Gleaves, & Savin, 1992). This finding is supported by other research, which has shown that there are only small and non-significant differences in the average levels of psychopathology and psychosocial impairment when comparing those meeting criteria for the current and strict DSM-IV diagnostic groups and those who meet criteria for the relaxed DSM-IV categories that incorporate the large number of EDNOS cases (Dalle Grave & Calugi, 2007; Thomas, et al., 2009).
An accurate representation of the prevalence of eating disorders therefore needs to include the prevalence of the clinical diagnoses of anorexia, bulimia and binge eating disorder, as well as the prevalence of the various presentations of EDNOS (Kendler, 1990). Perhaps the largest investigation of EDNOS prevalence was conducted in the United States between 2001 and 2003. This ‘National Comorbidity Replication’ was the only project within the World Mental Health Survey Initiative to collect data on sub-threshold eating disorders. It involved a nationally representative face-to-face household survey of 9,282 adults aged 18 and over (Hudson, et al., 2007). According to this assessment, the 12-month prevalence of sub-threshold binge eating (episodes occurring at least twice a week for at least 3 months and not occurring during the course of anorexia, bulimia or binge eating disorder) was 0.6%, and the prevalence of any binge eating (any sub-threshold or clinical cases) was 2.1%. The lifetime prevalence was 2.8% and 4.5% respectively. This high rate of disordered eating accounts for the larger prevalence rates of the USA National Mental Health Survey in comparison to that found in other countries (see Table 1).

A limitation of this research however, is that it did not investigate any sub-threshold variants of anorexia. In other community samples, lifetime prevalence of ‘menstruating anorexia’ has been estimated to be as high as 3.7% (Walters & Kendler, 1995) and 4.3% (Wade, et al., 2006). It is also unclear how the requirement for participants to meet criteria of at least one other Axis I disorder before being randomly sampled to receive questions about eating pathology (Hudson, et al., 2007), might have reduced prevalence estimates. It is certainly possible for an individual to have a diagnosable eating disorder without the presence of any other co-morbid psychopathology (Braun, Sunday, & Halmi, 1994; Hudson, et al., 2007) and therefore this sampling method is certain to have missed existing cases.
In sum, although the most reliable estimates of mental illness prevalence suggest that eating disorders are low prevalence disorders, these are known underestimates, because they are based on the narrowly defined DSM-IV-TR diagnoses of anorexia and bulimia alone. Furthermore, investigations of the prevalence estimates of the diagnosis of EDNOS, including binge eating disorder, indicate that eating disorders are among the most common mental illnesses, especially in young women.

**Eating disorders in males**

It is accepted that fewer males experience eating disorders than females and a ratio of 10:1 is often cited (Fairburn & Harrison, 2003; Rosen, 2003; Striegel-Moore, Garvin, Dohm, & Rosenheck, 1999). However, gender ratios are known to differ across eating disorder diagnoses and across age groups. For instance, the gender ratio is known to be most discrepant for anorexia; estimates for lifetime prevalence range from 10:0.06 (Braun, Sunday, Huang, & Halmi, 1999) to 3:1 (Hudson, et al., 2007). The ratio is most egalitarian for binge eating disorder, with a ratio of 1.5:1 (Hudson, et al., 2007). The ratio for bulimia is 3:1 (Hudson, et al., 2007). Estimates are also known to be at their most discrepant in childhood and adolescence, and at their closest in adulthood (Hay, Loukas, & Philpott, 2005; Madden, et al., 2009). The most reliable prevalence estimates again come from the World Mental Health Survey Initiative, which suggest that the lifetime prevalence rates for anorexia in men is 0.3%, for bulimia 0.5%, for binge eating disorder 2.0% and any eating disorder 4% (Hudson, et al., 2007). However, these are known to be underestimates, especially because some research suggests that up to 90% of men with a diagnosable eating disorder fall into the EDNOS category (Hay, Loukas, et al., 2005). In addition, longitudinal Australian research has shown that parallel to an increase in eating disorder prevalence in
women, eating disorder behaviours in males are also on the rise, with binge eating the fastest growing symptom (Hay, et al., 2008).

**Age at onset**

Onset of an eating disorder before the age of 14 is rare. In Australia in 2005, the annual incidence for children aged between 5-13 years was estimated to be 1.4 per 100,000, with 2.8 per 100,000 reported in NSW, which is consistent with other estimates found in the United Kingdom and in Canada (Madden, et al., 2009). The median age of onset for the eating disorders lies between 18 and 21 years (Hudson, et al., 2007). The mean age of onset for anorexia is 18.9 years, for bulimia is 19.7 years and for binge eating disorder is 25.4 years (Hudson, et al., 2007). Ninety-five percent of cases of anorexia begin between the ages of 14 and 28 (Fosson, Knibbs, Bryantwaugh, & Lask, 1987; Oakley Browne, Wells, Scott, & McGee, 2006). For bulimia there is a broader onset range with 90% of cases beginning between the ages of 10 and 38 (Oakley Browne, Wells, Scott, et al., 2006). Eating disorders in males appear to have a later onset than in females (Braun, et al., 1994).

**Burden of disease**

Burden of disease estimates are a composite of years of life lost due to premature mortality and functional years lost due to impairment and disability (C. J. L. Murray, 1994). Unlike many other mental illnesses, which are not considered fatal, the eating disorders contribute to both mortality and morbidity. In addition to a complex range of physical complications, eating disorders are also associated with significant psychological, social, financial and community burden. Even very
conservative estimates indicate that the eating disorders cause substantial burden. In Australia, eating disorders were found to be the second biggest cause of disability among women aged 15-24, second only to depression and anxiety disorders in the mental illness category (Begg, et al., 2007)\(^1\). Eating disorders are generally assigned a disability weighting of 0.28, similar to that of heroin dependence, which is often weighted at 0.27 (Begg, et al., 2007; Stouthard, et al., 1997). Furthermore, the amount of disability estimated to be directly attributable to the eating disorders has increased since estimates were calculated in 1997 (Begg, et al., 2007; Mathers, Vos, Stevenson, & Begg, 2000).

**Physical illness: morbidity and mortality**

Because the effects of starvation, purging, bingeing and extreme exercise can be so deleterious to the body, eating disorders can cause damage to every physiological system and organ (M. Fisher, et al., 1995; Rome & Ammerman, 2003). It is perhaps not surprising that people with eating disorders score higher on measures of impaired physical functioning (e.g. SF-12 physical component summary) than those without an eating disorder (Mond, Hay, Rodgers, Owen, & Beumont, 2005). Although being extremely underweight and malnourished is most often associated with physical illness or impairment, individuals with bulimia and especially those with binge eating disorder are more likely to be overweight (defined as a BMI of $\geq 25$) or obese (defined as a BMI of $\geq 30$), than the general population (Cachelin, et al., 1999; Pike, Dohm, Striegel-Moore, Wilfley, & Fairburn, 2001; Striegel-Moore, Franko, et al., 2004). In

\(^1\) This burden of disease estimate is based on the narrow, major diagnoses of anorexia and bulimia, outlined in the DSM-IV. Estimates for bulimia are based on a prevalence rate of 0.7% among 14–17 year olds, a remission rate of 0.21, and an assumed age at onset of between 14 and 29 years with no increased risk of mortality. Estimates for anorexia are based on a prevalence rate of 0.5% among females older than 15 years, a remission rate of 0.11, and an assumed age at onset of between 14 and 29 years, with an increased annual risk of mortality of 0.59%. The incidence in males is assumed to be 10% of the rate in females.
addition, sub-threshold disorders, where binge eating frequency occurs less than twice per week or for a period of less than 6 months, have also been associated with an increase in BMI (Striegel-Moore, Dohm, et al., 2000). Although associated with a wide range of negative health implications, overweight and obesity are, in particular, associated with an increased risk of cardiovascular disease and Type II diabetes (Anderson, Kendall, & Jenkins, 2003).

Anorexia has the highest mortality rate of all psychiatric disorders. Up to 20% of those diagnosed die of complications associated with the disorder or by suicide (Agras, 2001; Herzog, et al., 2000; Sullivan, 1995). However, there are also known cases of death associated with bulimic behaviours; individuals with disordered eating are known to experience an increased incidence of malnutrition, dehydration and electrolyte imbalances, which increase the risk of cardiac arrhythmias and sudden death (Cooke & Sawyer, 2004; Uyeda, et al., 2002). Although specific mortality rates for individuals with bulimia, binge eating disorder and EDNOS are difficult to estimate, because death in people with eating disorders is rarely listed as caused by complications associated with their disorder, it is known that they are at higher risk of premature mortality than non-eating disordered populations (Button, Chadalavada, & Palmer, 2010).

**Psychological morbidity**

Individuals with eating disorders are more likely than the general population to score higher on measures of psychological distress (e.g. K10) and measures of impaired mental functioning (e.g. SF-12 mental component summary) (Mond, Rodgers, et al., 2004; Spitzer, et al., 1995). They are also much more likely to experience psychiatric disorders of any kind (Hudson, et al., 2007), including personality disorders (Sansone & Sansone, 2010; Wilfley, et al., 2000), but especially
depressive and anxiety disorders (Braun, et al., 1994; Fischer & le Grange, 2007; Godart, et al., 2003; Godt, 2008; Scott, McGee, Oakley Browne, & Wells, 2006). They are also more likely to engage in non-suicidal self-injury (Sansone & Sansone, 2006; Welch & Fairburn, 1996) and to attempt or complete suicide (Sansone & Levitt, 2002) compared to non-eating disordered populations.

Investigations of suicidal behaviours in individuals with bulimia estimate that 22% of outpatients, 39% of inpatients, and 54% of individuals with co-morbid alcohol misuse, attempt suicide (Sansone & Levitt, 2002). One study investigating health and psychiatric morbidity in general practice and obstetric patients found that, compared to patients without an eating disorder, patients with bulimia were 13 times more likely to report having suicidal thoughts on several or most days in the 2 weeks prior to survey (Johnson, Spitzer, & Williams, 2001). Investigations of psychological co-morbidity in individuals with EDNOS have found that, compared to their full-threshold counterparts (e.g., anorexia or bulimia meeting full DSM-IV-TR criteria), those with EDNOS have lower levels of eating disorder pathology but higher levels of psychiatric co-morbidity (Schmidt, et al., 2008). High levels of co-morbid psychopathology have also been associated with significant burden in those with binge eating disorder (Telch & Stice, 1998; Wilfley, Wilson, & Agras, 2003).

**Quality of life and psychosocial burden**

Investigations of functional impairment and quality of life in individuals with eating disorders have found that their illness can preclude the ability to work, engage in satisfying social relationships, and attain psychological and physical wellbeing. Not surprisingly, people with eating disorders score lower on measures of quality of life (e.g. WHOQOL) than non eating-disordered populations (Bijl & Ravelli, 2000a; Mond, et al., 2005; Padierna, Quintana, Arostegui, Gonzalez, & Horcajo, 2000). For
example, Mond, Hay, Rogers, Owen and Beumont (2005), assessed quality of life and functional impairment in community members with eating disorders. They found that individuals with an eating disorder showed significantly more impairment on measures of psychological health, social relationships and subjective quality of life, compared to non-eating disordered participants. When the researchers compared the individuals with eating disorders according to illness type, they found that those with anorexia binge-eating/purging type had the highest level of impairment in psychological health and mental functioning, whereas those with binge eating disorder had the most impairment in physical functioning and social relationships. Other community studies have confirmed this finding; binge eating disorder has been consistently associated with poor quality of life and impairment in social and occupational functioning (Hsu, et al., 2002; Rieger, Wilfley, Stein, Marino, & Crow, 2005). It is believed that the very high levels of comorbid psychopathology and the physical complications of being overweight, which are commonly experienced individuals with binge eating disorder, are the main sources of this disability (Striegel-Moore & Franko, 2008).

In a study that investigated the disability associated with bulimic behaviours in the community, purging behaviours alone were found to be associated with a nine-point decline on the mental component summary scale of the SF-12 (Mond, Rodgers, et al., 2004). Furthermore, binge and purge behaviours have been found to be associated with an average 3.3 and 3.6 days out of role, respectively, per month (Mond & Hay, 2007). Bulimia is also thought to be associated with poor impulse control (Welch & Fairburn, 1996) and has been associated with an increase in use of

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2 The SF-12 is calibrated to have a mean score of 50 on each scale and a standard deviation of 10 points (McHorney, Ware, & Raczek, 1993). Purging behaviour is therefore associated with (almost) a one standard deviation decline in functioning.
tobacco, alcohol and other drugs (Fischer & le Grange, 2007), stealing (Goldner, Geller, Birmingham, & Remick, 2000), promiscuity (Abraham, 1998), unwanted pregnancy (Gura, 2007) and abortion (Abraham, 1998). In addition, time spent ruminating on, organising and engaging in, binge and purge cycles, has been found to significantly disrupt social activity (Agras, 2001). Females with bulimia are more likely than females without an eating disorder to experience marital discord and divorce if their eating disorder is active while trying to maintain a relationship (Abraham, 1998).

Individuals meeting EDNOS criteria have been found to have equivalent scores on measures of psychological distress and psychosocial impairment, and to have increased levels of psychiatric comorbidity, compared to the other major diagnostic categories (Bulik, et al., 2000; Bunnell, et al., 1990; Mond, Hay, Rodgers, Owen, Crosby, et al., 2006; Mond, Hay, Rodgers, Owen, & Mitchell, 2006). Individuals with anorexia have been found to experience enduring difficulties in social relationships including social anxiety and high dependence on carers (Hsu, Crisp, & Harding, 1979). A study of carers of patients with anorexia found that they scored higher on measures of general psychological distress and on measures of care associated burden, than carers of patients with psychosis. This distress was found to be associated with their loved-one’s negative behaviours, with problems accessing health services, and with a sense of loss associated with their loved-ones’ illness. By comparison, the distress of the psychosis carers was solely associated with a sense of loss (Treasure, et al., 2001), suggesting that caring for someone with anorexia has widespread and complex implications on the relationship.

In addition to causing strain on adult relationships, eating disorders are also known to negatively affect the children of mothers with eating disorders. For
example, mothers with eating disorders are reported to have difficulty feeding infants and maintaining balanced nutrition in their children (Gura, 2007; Stein, Murray, Cooper, & Fairburn, 1996). Children of mothers with eating disorders are also known to have higher body image dissatisfaction, eating and weight disturbance and eating disorder psychopathology (Cooley, Toray, Wang, & Valdez, 2008).

**Financial and health service costs**

Because eating disorders cause widespread disability in the physical, psychological and social domains, they place a great burden on the health system and are associated with loss of economic productivity due to days out of role or due to stunted career development. Compared to the non-eating disordered population, those with eating disorders are more likely to be high users of health services (Striegel-Moore, et al., 2008) and less likely to achieve the same educational or occupational status (Jenkins, Hoste, Meyer, & Blissett, 2011). It is also important to note that current data on eating disorder cost-of-illness are underestimates of the true financial burden (Simon, et al., 2005).

As a severe mental illness, anorexia places a significant burden on the health system. Treating chronic anorexia is estimated to more costly than treating chronic schizophrenia (Striegel-Moore, Leslie, Petrill, Garvin, & Rosenheck, 2000), with one episode of inpatient care estimate to cost an average of $17,384 USD (Agras, 2001). One study estimated that in 1998, the annual cost of lost productivity and premature death caused by anorexia, on the Germany economy, was €130.5 million (Krauth, Buser, & Vogel, 2002). Service costs for bulimia, binge eating disorder and ENDOS are also considered to be substantial, especially where illnesses are chronic and severe (Simon, et al., 2005; Striegel-Moore, Dohm, et al., 2004). The annual cost of inability to work and premature death, caused by bulimia, was estimated to be €113.9 million.
in 1998 (Krauth, et al., 2002), however, there are yet to be any studies estimating productivity costs in EDNOS or binge eating disorder.

Eating disorders are also costly to families. In a Canadian study of 45 individuals with anorexia and 63 of their associated carers, 79% of the anorexia patients were reported to be financially dependent on their parents and 11% on their partners (Dimitropoulos, Carter, Schachter, & Woodside, 2008). This finding occurred despite the mean age of the group being 26 years (range 18-53). The carers in the study reported that their loved-ones required considerable financial support as most needed the costs covered for rent, therapy expenses, food and clothing. Furthermore, respondents who co-habited were found to spend, on average, 41.5 hours per week caring for their loved one (Dimitropoulos, et al., 2008).

In sum, eating disorders are an important cause of morbidity and mortality. They contribute substantially to the development of burden in the physical, psychological and social domains and pose a large financial cost on families, communities and health systems.

**Summary of Chapter 1.1**

Eating disorders are serious mental illnesses characterised by severe disruptions in eating and exercise behaviours. The major eating disorder diagnoses of anorexia and bulimia, as outlined by the DSM-IV-TR, have strict and narrow definitions, the relevance of which are often questioned. The prevalence of the eating disorders presents a complex picture; the number of cases who meet the narrowly defined DSM-IV-TR diagnoses are relatively small, yet the number of individuals in the community who currently experience significant psychological distress, psychosocial
impairment and disease burden associated with sub-threshold or ‘not otherwise specified’ syndromes, is much more common. Furthermore, although eating disorders are often characterised as a woman’s illness, men are not unaffected. Further research is needed in all areas of the eating disorders, especially to improve the understanding of EDNOS, its prevalence, prognosis and associated burden. What is apparent from the current literature, however, is that eating disorders are common, especially in young women, and are associated with a high level of physical, psychological, social and economic burden.
Chapter 1.2: Help-seeking behaviours in people with eating disorders

“If only a rather small proportion of people in need of help actually seek help, treatment and rehabilitation services are very imperfectly achieving their purpose”

- Richard Hartnoll (Epidemiologist)
Given that disordered eating and exercising cause significant personal and economic cost, effective interventions that reduce symptoms and their associated burden are imperative for individuals with eating disorders. Treatment interventions for the eating disorders vary widely from self-help manuals and nutritional counselling, through psychoeducation, psychotherapy and psychotropic medication, to inpatient treatment with involuntary re-feeding via a nasogastric tube. Despite the complex and wide ranging disability associated with eating disorders, there are effective interventions available through both treatment services and less structured self-help activities.

**Current evidence-based treatments for the eating disorders**

Because of the differential symptoms and their various medical consequences, as well as the possibility of independent aetiological factors, investigations of treatment efficacy tend to be conducted by diagnostic group and increasingly stratified by age.

**Anorexia**

Though the literature on which treatments are the most effective for anorexia remains largely inconclusive (Fairburn, 2005a; Haliburn & Hay, 2005; Hay, et al., 2003), there are numerous settings and approaches to treatment. These include: inpatient, day patient or outpatient treatment, forced refeeding, nutritional counselling, individual, group and family psychotherapy, behavioural therapy, psychotropic medication, satiety training, and self-help. Different treatments have different levels of efficacy and different levels of evidence.
Currently, there is no evidence to support the effectiveness of self-help or nutritional counselling alone in the treatment of anorexia (Perkins, Murphy, Schmidt, & Williams, 2006; Serfaty, Turkington, Heap, Ledsham, & Jolley, 1999). There is also insufficient research to support the use of antidepressants (Claudino, et al., 2006) or antipsychotics (Attia & Schroeder, 2005). There is however, increasing evidence to suggest that family-based therapy (FBT) (C. A. Fisher, Hetrick, & Rushford, 2010), and in particular the Maudsley model (le Grange & Eisler, 2009; Rhodes, Brown, & Madden, 2009), has good outcomes for patients with anorexia, though this has only been shown with adolescents (le Grange & Eisler, 2009; Paulson-Karlsson, Engstrom, & Nevonen, 2009). A trial of satiety training has also had good preliminary results (Bergh, Brodin, Lindberg, & Sodersten, 2002) though is yet to be replicated.

The clinical practice guidelines released by the National Institute for Clinical Excellence (NICE; United Kingdom), the American Psychiatric Association (APA) and the Royal Australia New Zealand College of Psychiatrists (RANZCP) all stipulate that a multifaceted approach to the treatment of anorexia is needed, with psychiatrists, primary care physicians and allied health professionals providing medical and nutritional monitoring in combination with psychotherapy (American Psychiatric Association, 2006; National Institute for Health and Clinical Excellence, 2004; The Royal Australian and New Zealand College of Psychiatrists, 2009). Research has also supported this approach as the most acceptable form of treatment for patients (Halmi, et al., 2005).

Despite the inconclusive nature of the treatment literature at present, there is evidence to suggest that current treatments can improve the quality of life for people with anorexia and can arrest the development of disease and disability associated with
the illness in around 30% of those diagnosed (Berkman, Lohr, & Bulik, 2007; Jenkins, et al., 2011).

**Bulimia**

Treatment guidelines for bulimia recommend that psychotherapy (in the form of Cognitive Behavioural (CBT) or Interpersonal (IPT) therapies), be used as the first step in treatment intervention and that antidepressant medication (selective serotonin reuptake inhibitors (SSRIs) in particular) be used in combination with psychotherapy, where psychotherapy alone has failed to produce clinically significant results (American Psychiatric Association, 2006; National Institute for Health and Clinical Excellence, 2004). A series of Cochrane reviews, which investigated the efficacy of antidepressants, psychotherapy and their combination (Bacaltchuk & Hay, 2003; Bacaltchuk, Hay, & Trefiglio, 2001; Hay, Bacaltchuk, & Stefano, 2004), supports the efficacy of these approaches. Self-help interventions such as manualised CBT programs have also been shown to be effective in reducing concerns about weight and shape, psychiatric symptomatology and interpersonal functioning, however, they are limited in utility for reducing frequency of binge eating and purging behaviours (Perkins, et al., 2006).

The effectiveness of current treatments for bulimia has been corroborated by numerous studies in an array of different settings; by 2005 over 40 randomised controlled trials investigating treatments for bulimia had been completed (Fairburn, 2005b). Furthermore, follow up studies show that treatment effects are long-lasting (≥ 5 years) for around 50% of patients (Fairburn, et al., 1995). The literature therefore suggests that evidence based treatment for bulimia is possible, and that the current methods of psychotherapy and psychotropic medication can result in positive outcomes that are robust and reliable.
Binge eating disorder

Psychotherapy and antidepressant medication have also been shown to be have lasting effects on the frequency of binge eating in those with binge eating disorder. However, these treatments appear to be less effective in achieving weight loss (De Zwaan, 2001; Hudson, Carter, & Pope, 1996). The combination of antidepressant medication and psychotherapy does not appear to reduce binge eating frequency above and beyond what is achieved by psychotherapy alone (Bacaltchuk, et al., 2001), though the combination does appear to be more effective in enhancing weight loss, than either therapy in isolation (Laederach-Hofmann, et al., 1999). Self-help treatments have also been found to be effective in reducing eating pathology (Vocks, et al., 2010) and these interventions have been suggested as a useful first line in developing therapeutic engagement (National Institute for Health and Clinical Excellence, 2004; Perkins, et al., 2006).

Although many medical (e.g. appetite suppressant medications) and even surgical weight-loss interventions (e.g. ‘lapband’ or laparoscopic adjustable gastric banding) have been investigated in the treatment of binge eating disorder (De Zwaan, 2001), there are as yet no indicated treatments and the literature remains inconclusive about their value for individuals with binge eating disorder (Jones-Corneille, et al., 2008; Niego, Kofman, Weiss, & Geliebter, 2007; Wolnerhanssen, et al., 2008). The use of surgical interventions for weight-loss in particular, remains controversial (McAlpine, et al., 2009; Toy, 2009).

Clinical practice guidelines for the treatment of binge eating disorder are less common than those developed for the treatment of anorexia or bulimia, however, those that have been published recommend the same approach to treatment as that shown to be effective for bulimia, with a mixture of CBT-based self-help,
psychotherapy and antidepressant medication being considered optimal (National Institute for Health and Clinical Excellence, 2004). The guidelines provided by the American National Institute of Mental Health and the American Psychiatric Association suggests appetite suppressant medication may also be prescribed (American Psychiatric Association, 2006; National Institute for Mental Health, 2007).

EDNOS

As yet there are few studies of therapeutic outcome for individuals with EDNOS and to date no specific treatments have been elucidated. Sub-threshold cases are however, often treated with the same methods that have been found effective in their full-threshold counterparts (Button, et al., 2005; Schmidt, et al., 2008).

The concept of help-seeking

Help-seeking has been defined as “any communication about a problem or troublesome event which is directed toward obtaining support, advice or assistance, in times of distress” (Gourash, 1978, p. 414). Because it often involves interactions with other people, help-seeking is conceptualised as a complex system of beliefs, knowledge, coping skills, interpersonal style and social relationships (Rickwood, Deane, Wilson, & Ciarrochi, 2005). Modes of help-seeking can be broken into formal and informal categories. Informal help-seeking involves support, advice or assistance from members of an individual’s social network, such as friends and family. Formal help-seeking involves making contact with individuals who have a recognised role and appropriate training in providing treatment, assistance or information. Formal help can be received from trained professionals such as doctors, teachers, youth,
social or mental health workers, or can involve modes of indirect contact such as counselling helplines or internet websites (Rickwood, et al., 2005).

Help-seeking is also often described as a pathway, which increases in its level of formality and invasiveness (Gourash, 1978). It is thought that an individual with a problem will generally initiate help-seeking at the level of the least invasive and easiest to procure. Increments in intervention difficulty and invasiveness will then increase as the individual’s level of distress about their symptoms increases (Cramer, 1999; Sheffield, Fiorenza, & Sofronoff, 2004). Help is rarely sought from formal sources alone; seeking informal help from social networks tends to precede and continue throughout formal help-seeking (Gourash, 1978).

**Informal help-seeking**

As in other mental illnesses, informal help-seeking tends to take place before formal help-seeking in individuals with eating disorders (Hepworth & Paxton, 2007). Turning to the social network is the most common mode of informal help-seeking and is especially prominent in adolescents and young adults, as up to 86% report they would to turn to a friend or family member first for assistance (Becker, Thomas, Franko, & Herzog; D. F. Meyer, 2005; Mission Australia, 2007, 2008; Mond, Marks, et al., 2007; Prouty, Protinsky, & Canady, 2002).

Most individuals with an eating disorder first seek informal help for weight loss before seeking help for eating pathology. This is true not only for those who are overweight, but also for the individuals who are within a normal weight range (Mond, Hay, Rodgers, & Owen, 2007). Help is often sought from commercial organisations, such as Jenny Craig or Weight Watchers (Mond, Hay, et al., 2007). It is perhaps not
surprising that of the clientele in non-medical weight loss centres, up to 25% are estimated to experience binge eating disorder (Castellini, et al., 2008).

Individuals with bulimia are more likely than individuals with other eating disorders to seek out self-help and alternative treatments, such as taking vitamins and minerals, or massage therapy (Mond, Hay, et al., 2007; Yager, Landsverk, & Edelstein, 1989). While self-help programs with a strong focus on guided CBT have been shown to be effective in reducing bulimic symptoms, lifestyle changes, such as taking vitamins and minerals, have not (Perkins, et al., 2006; Sysko & Walsh, 2008).

Psychoeducation is another form of informal help-seeking that is often used by individuals with eating disorders (D. F. Meyer, 2001). The internet is a particularly valuable source for locating health information (Cotten & Gupta, 2004; Leach, Christensen, Griffiths, Jorm, & Mackinnon, 2007; Rickwood, Deane, & Wilson, 2007), and is often reported to be of great use and comfort for those with a developing or established eating disorder (Gollings & Paxton, 2006). While there are many sites that provide evidence-based information about eating disorder symptoms and effective treatments, there are also many that promote disordered eating as a lifestyle (Lapinski, 2006). ‘Pro-ana’ (promotion of anorexia) and ‘pro-mia’ (promotion of bulimia) websites are of particular concern as they contain graphic information about weight-loss strategies and facilitate an extreme dieting sub-culture (Harshbarger, Ahlers-Schmidt, Mayans, Mayans, & Hawkins, 2009; Lapinski, 2006; Uca, 2004). Other sources of psychoeducation that are often used include the social network and information services such as those provided by consumer organisations. In an Australian community survey, at least 80% of respondents who met criteria for either full- or sub-threshold bulimia or binge eating disorder, reported talking to a friend
about their problem, or getting information about their problem or services available to them (Mond, Hay, et al., 2007).

Other sources of informal help-seeking, such as self-help groups or bibliotherapy, appear to be primarily utilised by those with bulimia and binge eating disorder (De Zwaan, 2001; Myers, Swan-Kremeier, Wonderlich, Lancaster, & Mitchell, 2004; Yager, et al., 1989). Though there are reports of individuals with anorexia seeking support from self-help groups, the majority appear to do so after already engaging in some formal method of treatment (Deeble, Crisp, Lacey, & Bhat, 1990).

The literature on informal help-seeking for eating disorders suggests that it is very common, though most often inappropriate. Interventions that are known to be ineffective, or even dangerous, are often engaged, yet interventions that are known to effective in reducing symptoms are rarely used.

**Formal treatment seeking**

**Pathways to care**

Long periods of time usually elapse before individuals make the decision to engage formal treatment (Oakley Browne, Wells, & McGee, 2006). This period of time is longer for females than for males (Braun, et al., 1999; Hay, Loukas, et al., 2005). The median delay between illness onset and receipt of treatment has been estimated at 15 years for anorexia and 10 years for bulimia (Oakley Browne, Wells, & McGee, 2006). Most individuals enter treatment via an initial consultation with a primary care physician; audits of health service use suggest that approximately half of eating disorder cases receiving treatment are diagnosed in primary care, 44% in
mental health services and 6% in speciality services (Hoek & van Hoeken, 2003; Striegel-Moore, et al., 2008). Although acute eating disorders often require inpatient treatment for medical stabilisation, the majority of patients who receive any form of treatment for their eating disorder do so in a community outpatient setting (Striegel-Moore, et al., 2005; Striegel-Moore, Leslie, et al., 2000).

**General treatment seeking**

Individuals with anorexia, bulimia or binge eating disorder are more likely to utilise general health care services than individuals without mental illness, but are equally likely to use services at the same rate as individuals with other psychiatric conditions, such as depression (Striegel-Moore, et al., 2005). In particular, individuals with eating disorders have more visits to primary care physicians, dentists, gastroenterology, gynaecology and fertility specialists than non-eating disordered individuals (Johnson, et al., 2001; Mond, Hay, et al., 2007; D. E. Stewart & Robinson, 2001). People with binge eating disorder who are overweight or obese, and individuals with anorexia who are severely underweight (BMI ≤ 16), are more likely than the general population, and more likely than individuals with bulimia, to receive inpatient care (Cachelin & Striegel-Moore, 2006; Striegel-Moore, et al., 2008). Those with anorexia are more likely to be referred on to specialist service providers by primary care physicians than those with bulimia or binge eating disorder (Hoek, 1991; Johnson, et al., 2001). Researchers suggest that this phenomenon may occur because the symptoms of anorexia manifest in a physical appearance that is overt and more easily recognisable than the physical symptoms of bulimia or binge eating disorder (Currin & Schmidt, 2005).

With reference to mental health care, those with eating disorders are more likely to utilise services than non-eating disordered populations, but less likely than
individuals with other mental illnesses, for any mental health problem. The Netherlands national mental health survey found that those with bulimia were two times more likely to seek mental health care in the 12 months before survey, than non eating disordered individuals (Bijl & Ravelli, 2000b). By comparison however, those with a diagnosable case of major depression, or generalised anxiety disorder were 6.31 and 3.34 times more likely than individuals without depression and anxiety to seek mental health care. Although the odds ratio for anorexia was not calculated, it is likely that it would have been well below that for schizophrenia and bipolar disorder, which had odds ratios of 7.0:1 and 6.8:1 respectively (Bijl & Ravelli, 2000b). Individuals with binge eating disorder appear the least likely of all the eating disorder groups to receive psychotherapy (Striegel-Moore, Dohm, et al., 2004).

**Eating disorder specific treatment seeking**

The service utilisation literature has revealed that the use of health care is elevated among people with eating disorders (Ogg, Millar, Pusztai, & Thom, 1997; Striegel-Moore, et al., 2008; Striegel-Moore, Dohm, et al., 2004), yet many in contact with services either fail to be diagnosed (Hay, Loukas, et al., 2005; Hay, Marley, & Lemar, 1998; Johnson, et al., 2001), or fail to engage with treatment once they are referred (L. Bell, 2001; Burket & Hodgin, 1993; Coker, Vize, Wade, & Cooper, 1993; Palmer, Gatward, Black, & Park, 2000).

Despite the complex and wide ranging burden associated with eating disorders and the benefits of receiving effective treatment, studies investigating community samples report that few individuals with eating disorders seek appropriate evidence-

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3 No cases of anorexia in the 12 months to survey were found. Odds ratios for health service use could therefore not be calculated.

4 Results reported are based on respondents who met criteria for only one Axis I disorder in the previous 12 months. Comorbid psychiatric diagnoses are associated with increased levels of help-seeking.
based treatment (Bijl & Ravelli, 2000b; Hudson, et al., 2007; Jacobi, et al., 2004; Oakley Browne, Wells, & McGee, 2006). A systematic review of the literature found a pooled prevalence of treatment seeking in 12 independent samples to be 23.2% (95% CI = 16.6, 31.4), indicating that a very low proportion of eating disorder cases in the community seek eating disorder specific treatment (Hart, Granillo, Jorm, & Paxton, In press). Furthermore, it found that cases were more likely to receive treatment for weight loss than mental health care for eating problems.

It therefore appears that there is a paradox whereby people with eating disorders have more contact with health services than other populations, yet experience a large unmet need for treatment specifically targeted at the alleviation of disordered eating and its effects. This paradox should be of great concern to the field of eating disorders research and treatment, as there are many negative implications of untreated eating disorders and inappropriate help-seeking.

Implications of inappropriate and low help-seeking

Some negative implications of untreated eating disorders and inappropriate help-seeking include: the negative effects of inappropriate interventions (Bardone-Cone & Cass, 2007; Garner, 1985), the development of biased research and treatment techniques (Fairburn, Welch, Norman, Oconnor, & Doll, 1996; Hartnoll, 1992; Rogler & Cortes, 1993), and ongoing elevated community burden (Mond, Hay, et al., 2007). Most importantly, a lack of or delayed treatment seeking leads to many individuals missing the window of opportunity for early intervention.

The importance of early intervention
Early intervention is the process of providing assessment and therapy, to facilitate normal cognitive and emotional functioning and to prevent the development of disability associated with the presence of mental illness. In children or young adolescents, early intervention also aims to prevent developmental delay and the chronic disadvantage associated with a failure to achieve developmental goals. Early intervention is classed as preventive where treatment is effective at arresting the development of a disorder in an individual who is at risk of making the transition to a clinically significant diagnosis. Early intervention can also be classed as secondary prevention, where timely therapy for the primary illness is known to inhibit the onset of subsequent pathology.

According to McGorry and colleagues (2007), actions taken at initial stages of illness to manage emerging symptoms, “constitute a core preventive strategy with an excellent chance of reducing prevalence, cost and morbidity by preventing progression of [mental] illness. Achieving this would also minimise the ‘collateral damage’ to social, educational and vocational functioning.” (McGorry, Purcell, Hickie, & Jorm, 2007, p. S6). Providing timely and effective interventions during adolescence and young adulthood, which can manage or ameliorate symptoms, is therefore an extremely important goal.

Early intervention for eating disorders

The American National Comorbidity Survey Replication (Hudson, et al., 2007) estimated the peak age of onset for eating disorders lies between 18 and 21 years. In New Zealand, it was found that 75% of all cases of anorexia had begun before the age of 21 and by age 23 for bulimia (Oakley Browne, Wells, Scott, et al., 2006). In Australia, eating disorders were the class of mental illness that caused the second largest amount of disease burden in women of this age group (Begg, et al., 2007).
These statistics indicate that eating disorders are an important contributor to poor health, economic disadvantage and social exclusion in young people. Furthermore, given that eating disorders have widespread impact on the lives of young adults and their families (Crow & Peterson, 2003; Doll, Petersen, & Stewart-Brown, 2005; Hay & Mond, 2005); and that the detrimental effect of disordered eating and exercising greatly increases the chances of secondary illness (Madden, et al., 2009); these illnesses have a great capacity to obstruct the obtainment of developmental goals important in this life phase (Crow & Peterson, 2003; Hay & Mond, 2005). Because failure to achieve developmental goals can significantly impact on a young person’s life trajectory and cause ongoing burden well into adulthood (Insel & Fenton, 2005; McGorry, Purcell, Hickie, Yung, et al., 2007), early intervention certainly poses a promising avenue for alleviating the comorbidity and disability associated with eating disorders. But is there evidence that intervening early in the course of an eating disorder actually works?

Due to a lack of high-quality research in the area of duration of untreated illness, naturalistic and treatment outcome studies, and randomised controlled trials to evaluate current treatments, it is not yet known whether early intervention may prevent the development of full-syndrome eating disorders in those known to be at risk (Becker, Franko, Nussbaum, & Herzog, 2004; Currin & Schmidt, 2005; Reas, Schoemaker, Zipfel, & Williamson, 2001; Schoemaker, 1997). Three systematic reviews of the literature have deduced that the current evidence is inconclusive and much greater research is needed in order to provide concrete evidence that the provision of current treatments modifies prognosis (Currin & Schmidt, 2005; Reas, et al., 2001; Schoemaker, 1997). However, there are a number of lines of evidence that
suggest early intervention is warranted, even where there is a lack of evidence to suggest that it can change the course of primary illness.

One line of evidence comes from studies of risk factors for eating disorders. This literature suggests that early intervention is justified because in the eating disorders the prodromal or ‘at risk’ states are syndromes that warrant intervention in their own right. For example, a high level of body image dissatisfaction, a known risk factor for the development of an eating disorder, is associated with such negative effects as poor self-esteem, high levels of psychological distress and increased chance of developing anxiety and depression (Blashill, 2010; Gavin, Simon, & Ludman, 2010; Kostanski & Gullone, 1998; Tiggemann, 2005). Disordered eating, the strongest predictor of a transition to a diagnosable eating disorder (Patton, Selzer, Coffey, Carlin, & Wolfe, 1999) is associated with an increased incidence of physical illness, weight gain, overweight and obesity, as well as psychosocial impairment (Mallick, 1983; Mond, Hay, Rodgers, & Owen, 2009; Shisslak, et al., 1998; Striegel-Moore, Silberstein, Frensch, & Rodin, 1989). Intervening prior to the onset of a clinically significant eating disorder is therefore justifiable on the basis of considerable burden associated with sub-threshold syndromes. Furthermore, cost-effective, efficacious preventive interventions are currently available and have been well evaluated (Levine & Smolak, 2007; Stice, Shaw, & Marti, 2007; Wilksch & Wade, 2009).

A second line of evidence is the treatment studies which show that children and adolescents with anorexia respond better to treatment than adults with anorexia (le Grange & Eisler, 2009; Russell, Szmukler, Dare, & Eisler, 1987; G. T. Wilson, Grilo, & Vitousek, 2007). This literature suggests that current treatments are effective for young participants because the interventions are suited to their particular
developmental stage and social context (e.g. family based therapy is more effective when a young person is still living in the family home and reliant on the parents for emotional and financial support). Treatment studies therefore provide support for early intervention because they show that the earlier treatments can be received across the lifespan the more effective they will be.\(^5\)

A third line of evidence comes from quality of life studies, which show that treatment can enhance the daily experience of those who live with eating disorders, as well as that of their carers and social networks, by facilitating positive interaction and decreasing barriers to social engagement (Gatta, et al., In press; McIntosh, et al., 2005; Sepulveda, Lopez, Todd, Whitaker, & Treasure, 2008). This literature suggests that even when treatments are not able to arrest or modify the progression of a disorder, receiving treatment early can facilitate coping strategies and social skills that ultimately improve quality of life.

Early intervention can therefore be seen as a crucial avenue for reducing the burden and disability caused by eating disorders. However, there are currently many barriers that preclude prompt and effective treatment, including: poor knowledge and recognition of symptoms in the community and primary care, reluctance to seek formal help from practitioners, negative attitudes towards individuals with mental illness and towards mental health treatments, and a lack of awareness of informal help sources and interventions.

\(^5\) This evidence is not to be confused with duration of untreated illness. Although some authors use participant age as a proxy measure of duration of untreated illness – because the average age of onset for an eating disorder is 17, this means that the older an individual is when they present to treatment for the first time, the longer their duration of untreated illness is likely to be – participant age can only ever be considered an indirect measure of duration of untreated illness (Currin & Schmidt, 2005).
Summary of Chapter 1.2

Evidence based effective treatments are available for eating disorders. While further research and development is needed for the treatment of anorexia, improvements in social functioning and quality of life are still achievable with current interventions. Current treatments for bulimia and binge eating disorder are associated with good long-term outcomes, as follow-up studies show a majority return to health and functioning.

Despite the benefits of available treatments, only a minority of community members who experience an eating disorder seek appropriate care. It is estimated that less than one quarter of individuals with an eating disorder seek specific and evidence-based treatment. Receiving treatment for weight-loss or another mental health problem, such as depression or anxiety, is much more common than receiving appropriate formal care for an eating pathology.

Those with eating disorders are also more likely to engage help-seeking from informal sources, such as their social network, or to use self-help strategies, such as increasing intake of vitamins and minerals or searching for information on the internet, than to obtain formal treatment. While there are some self-help strategies known to be effective in reducing eating disorder pathology, these are rarely utilised.

An important implication of low and inappropriate help-seeking is that the window of opportunity for early intervention is lost. Despite current research being inconclusive about the ability of early intervention, with current treatments, to prevent the transition from an at-risk state to a diagnosable disorder, there is evidence to show timely treatment is beneficial, because it can avoid costly social, educational and vocational disadvantage. Given that early intervention has the potential to reduce chronic burden associated with the failure to attain developmental goals, and the
potential to increase functioning and quality of life in individuals whose illness trajectory is otherwise unmodified by timely treatment, increasing appropriate help-seeking and the uptake of formal professional treatments is a very important goal for the field of eating disorders.

The current literature on help-seeking in individuals with eating disorders therefore indicates that there is an immediate and widespread need for interventions that decrease barriers and increase incentives for seeking appropriate care. If the significant burden imposed by eating disorders is to be decreased, research focused on the development, implementation and evaluation of effective programs for increasing help-seeking, is desperately needed.
Chapter 1.3: What the community knows and understands about eating disorders

“To understand is to transform what is”

- Jiddu Krishnamurti (Indian writer and philosopher)
Understanding how the public recognise and respond to eating disorders, their beliefs about treatments and professionals, may indicate why appropriate help-seeking is low. In the past decade, a new field of research has begun to investigate the knowledge and beliefs about mental illness in the community, and how these affect help-seeking.

**The concept of mental health literacy**

Health literacy is the ability to gain access to, understand and use information to promote and maintain good health (Wikipedia, 2010). Health literacy influences whether individuals will engage in health behaviours to prevent disease, or seek treatment to manage illness. For example, knowing that exposure to UV rays from the sun can cause skin cancer enables preventive action, such as putting on sunscreen and appropriate clothing; and knowledge of breast cancer symptoms prompts women who discover unusual lumps to engage a breast screen. In the same way, knowing when a mental illness is developing or present, knowing how to enact health behaviours to manage symptoms, and knowing where to seek appropriate treatment when functioning is disrupted, are all important aspects of mental health literacy.

*Mental health literacy* is defined as the knowledge and beliefs about mental illness that aid recognition, management or prevention (Jorm, Korten, Jacomb, Christensen, et al., 1997a). Good mental health literacy includes: the ability to recognise specific disorders or to recognise general psychological distress as a precursor to illness; the ability to seek out information about mental health; having accurate knowledge of and beliefs about risk factors and causes of mental illness; having accurate knowledge about, and beliefs that facilitate, the uptake of appropriate
self-help interventions and available professional treatments; and maintaining non-stigmatising attitudes that facilitate appropriate help-seeking for oneself or helping behaviours towards others (Jorm, Korten, Jacomb, Christensen, et al., 1997a; Olsson & Kennedy, 2010).

The first investigation of mental health literacy was conducted in Australia in 1997. The National Survey of Mental Health Literacy involved face-to-face interviews with a nationally representative sample of 2031 adults, aged 18-71 (Jorm, Korten, Jacomb, Christensen, et al., 1997a, 1997b; Jorm, Korten, Jacomb, Rodgers, & Pollitt, 1997; Jorm, Korten, Rodgers, et al., 1997). Participants were randomly assigned one of two possible vignettes, each describing a fictitious character who met DSM-IV and ICD-10 criteria (American Psychiatric Association, 1994; World Health Organization, 1994) for either depression or schizophrenia. The gender of the vignette character was also randomised (‘John’ or ‘Mary’). After being shown the vignette, respondents were asked two open-ended questions: What would you say, if anything, is wrong with John? and How do you think John could best be helped?. Participants were then asked to rate how helpful, harmful or neither, various people (e.g. a general practitioner (GP), a psychologist) and various treatments (e.g. psychotherapy, get out more), might be for John. Participants were also asked what they believed John’s prognosis was likely to be with and without treatment, what they believed the risk factors were for John’s problem, and what their beliefs about John might be if he received appropriate treatment (e.g. how likely John was to be violent). The interview ended with questions about the respondent's personal experience with people in the vignette and their own psychological symptoms in the past month.

The survey found that a large number of Australian adults could not correctly label the symptoms of depression or schizophrenia. The depression vignette was
correctly identified by 39% of participants of those who received it; the schizophrenia vignette by 27%. Furthermore, 28% of participants who received the depression vignette and 16% of participants who received the schizophrenia vignette, failed to mention a mental health related label (e.g. mental illness, emotional problem, stress).

The survey also found that a majority held beliefs about the helpfulness of various formal (e.g. psychotherapy, medication) and informal (e.g. getting out and about more, or learning relaxation strategies) treatments, which were discordant with those of mental health professionals (Jorm, Korten, Jacomb, Rodgers, Pollitt, et al., 1997; Jorm, Korten, Rodgers, et al., 1997). Although mental health professionals, such as psychologists, counsellors, psychiatrists and GPs, were largely regarded as helpful, pharmacological treatments, such as antidepressants or antipsychotics, were most often rated as harmful. Importantly, those who did not perceive a mental health problem in the vignette were more likely to rate treatments as ‘neither helpful nor harmful’ or to respond ‘don’t know’.

The authors concluded that although general recognition of a mental health problem appeared high, few in the population could accurately label the mental illnesses described and importantly, there were concerning discrepancies between the beliefs of professionals and the public about effective treatments. This seminal research has now been replicated widely, both in different regions and in different populations (Lauber, Nordt, Falcato, & Rössler, 2003; Mubbashar & Farooq, 2001; Olsson & Kennedy, 2010). It is only recently, however, that research has begun to investigate mental health literacy for disorders other than depression and schizophrenia.

**Mental health literacy for eating disorders**
Since the early 1980s research studies have investigated the public’s knowledge of eating disorder symptoms, beliefs about causes, and attitudes towards available treatments. For almost thirty years this research has found that only a minority of community members can correctly label or identify an eating disorder (Chiodo, 1984; Huon, Brown, & Morris, 1988; Smith, Pruitt, Mann, & Thelen, 1986). Other consistent trends have also been reported: anorexia is more likely to be correctly identified than bulimia (Mond & Arrighi, 2011; S. Murray, Touyz, & Beaumont, 1990; Nishizono-Maher, Miyake, & Nakane, 2004); women are more likely to correctly label eating disorder symptoms than men (Furnham & Davidson, 2010; Mond & Arrighi, 2011; S. Murray, et al., 1990); negative attitudes towards mental health treatments for eating disorders, such as psychological therapy or psychotropic medication, are common (Mond & Hay, 2008; Mond, Hay, Rodgers, Owen, & Beumont, 2004a) and many community members harbour negative or stigmatising attitudes towards individuals with eating disorders (Crisp, 2005). More recent research has established that the level of mental health literacy for eating disorders in the community remains inadequate (e.g. Holliday, Wall, Treasure, & Weinman, 2005; Hunt & Rothman, 2007).

The Health and Wellbeing of Female ACT Residents study

One large community-based study of mental health literacy for eating disorders was carried out in 2002 in Canberra, Australia (Mond, Hay, et al., 2004a; Mond, Hay, Rodgers, Owen, & Beumont, 2004b, 2004c, 2004e; Mond, Rodgers, et al., 2004). Self-report questionnaire batteries, which included demographic questions, the Eating Disorder Examination Questionnaire (EDE-Q) (Fairburn & Beglin, 1994), the K10 (Kessler, et al., 2002) and SF-12 (Ware, Kosinski, & Keller, 1996), were sent to a random sample of 802 females aged 18-45 who were listed on the local electoral roll.
Four hundred and ninety-five participants returned completed questionnaires, of which 208 completed a follow-up interview. The interview phase involved administration of the Eating Disorder Examination (Fairburn & Cooper, 1993) and an adaptation of the Mental Health Literacy Survey (Jorm, Korten, Jacomb, Christensen, et al., 1997a).

The adapted survey involved a vignette describing a 19 year-old female (‘Kelly’) who met DSM-IV criteria for bulimia (purging subtype). Participants were asked *What would you say is Kelly’s main problem?* and responded via a single forced-choice response from a list of 15 options (e.g. ‘bulimia nervosa’, ‘a binge eating disorder or problem’, ‘low self-esteem or lack of self-confidence’, ‘no real problem, just normal’). To assess participants perceptions of the illness, new questions were added to the survey, including: *How distressing to you think it would be to have Kelly’s problem?; How difficult do you think Kelly’s problem would be to treat?;* and *How sympathetic would you be towards someone suffering from Kelly’s problem?*. Responses were lodged via a 5-point Likert scale from ‘Not at all’ to ‘Extremely’. The perceived acceptability of bulimic symptoms was also assessed, using the question *Have you ever thought it might not be too bad to be like Kelly, given that she has been able to lose a lot of weight?*. Again, responses were via a 5-point Likert scale from ‘Never thought it’ to ‘Always thought it’. So that responses were not biased, participants were not provided details about specific content, prior to the interview. The interviewed sample had: a mean age of 35.3 years, 90% English as a first language, 81% Australian born, 84% high school (year 12) completion, 62% married and 44% employed full time.

Eleven percent of participants correctly labelled Kelly’s problem as ‘bulimia nervosa’. A further 20% responded ‘binge eating disorder or problem’. More than half
(55%) responded ‘low self-esteem or lack of self-confidence’ and 4% responded ‘yo-yo dieting’. Together, selection of these four options comprised 90% of all responses.

In relation to questions regarding whether various people, treatments and medications were perceived as helpful, harmful or neither, GPs were the professionals, counselling the treatment, and vitamins and minerals the medications, rated as helpful by the highest proportion of participants. In addition, while antidepressants were more often considered harmful than helpful (36.2% vs 35.7%), self-help interventions such as ‘getting out and about more’ were highly regarded among participants as helpful.

Modal responses to the three questions concerning illness perception included, ‘Very distressing’ to have a problem like Kelly’s, ‘Moderately difficult’ to treat and ‘Very sympathetic’ towards someone suffering from Kelly’s problem. While these responses appear satisfactory, 36% reported thinking it might not be too bad to be like Kelly, which indicates that a significant minority perceive benefits to eating pathology, despite its depicted concurrence with social isolation and disability, in the vignette.

These results suggest that most women cannot accurately recognise the symptoms of bulimia, believe the problem to be one of ‘low self-esteem’, and are sceptical about the benefits of mental health specialists and the evidence based treatments they can provide. Clearly, community members require greater education about eating disorders in a number of significant areas. For example, increased education about the availability and relative risks and benefits of current treatments is required if the uptake of effective treatments, such as anti-depressants and psychotherapy, is to be increased. Given that bulimia is known to be responsive to current treatments, with long term positive outcomes recorded, it is also concerning
that most believed Kelly’s problem would be difficult to treat. This is especially problematic in light of health psychology research, which suggests that the decision to engage in treatment is influenced by combined beliefs that treatment is effective and that the individual has the capacity to adhere to treatment requirements (Noar, Chabot, & Zimmerman, 2008). Greater awareness about and optimism in current effective treatments is therefore needed if individuals with eating disorders are to engage in and benefit from professional interventions. Finally, although it is encouraging that most participants believed bulimia is a serious condition and deserving of sympathy, the finding that many women consider bulimic symptoms to be desirable, indicates a need for community education about the psychological sequelae and medical complications associated with eating pathology.

**Other community studies**

Adaptations of the mental health literacy survey have been used in various settings since the *Health and Wellbeing* study. For example, a self-report questionnaire version was administered to a large sample of high-school age (12-18 year old) female students in Sydney, NSW (Mond & Marks, 2007; Mond, Marks, et al., 2007). Although problem recognition was not reported on, it was found that a majority of respondents considered Kelly’s problem to be either very or extremely distressing, that they would be either very or extremely sympathetic towards someone suffering from Kelly’s problem, and that at some time they had thought it “might not be too bad” to be like Kelly. Participants also reported a very strong preference to first disclose such a problem to their mother or close female friend. Mothers were the modal response to the question asking which person, from the list of people who may be able to help Kelly, was regarded as most helpful. A slightly smaller proportion believed that a dietician or nutritionist was most likely to be helpful. CBT was the
modal treatment regarded as most helpful and vitamins and minerals the medication regarded as most helpful. A third of participants believed anti-depressants would be harmful.

A vignette depicting anorexia has also been used in a number of community settings (Mond & Arrighi, 2011; Mond, Robertson-Smith, & Vetere, 2006). These studies have found higher rates of correct labelling and a perception of anorexia being a more severe disorder than bulimia, however this recognition has been associated with a greater level of negative attributions about individuals who experience the disorder.

An investigation of public perceptions of binge eating disorder has also been conducted using an adapted mental health literacy survey (Mond & Hay, 2008). This found that most participants believed binge eating is primarily a problem of low self-esteem or depression. Behavioural weight loss treatment and self-help interventions were considered the most helpful treatments, and GPs and dieticians were considered the most helpful treatment providers. Most participants were ambivalent about prognosis given treatment and pessimistic about outcome in the absence of treatment.

Gender differences in mental health literacy for eating disorders have also been investigated, with research reporting that females are more likely to correctly identify an eating disorder, more likely to express empathy for an individual with an eating disorder, though also more likely to consider an eating disorder as socially desirable (Mond & Arrighi, 2011; Mond & Hay, 2008). Interestingly, in a study of binge eating disorder, males were found to be more likely to rate the problem in the vignette as ‘an eating disorder but not anorexia or bulimia’, than women were (Mond & Hay, 2008).

Taken together, these results reiterate the findings of the first study by indicating that community members have some beliefs that would positively influence
help-seeking and helping behaviours, such as feeling sympathetic towards individuals with eating disorders and the belief that they would get better with treatment and worse without. However, there are also some concerning trends. That many young females, those who are most at risk of developing an eating disorder, actually endorse eating pathology as desirable, indicates a lack of understanding of the complex, disabling and even life-endangering conditions that they present. The common beliefs that anti-depressants and psychiatrists are harmful, and that lifestyle interventions such as getting out and about more or taking vitamins and minerals are helpful, also indicates beliefs about treatment that are disparate with the current scientific literature.

Although limited in number, research studies employing the mental health literacy survey for eating disorders conclude that in the general community, mental health literacy for eating disorders is not well developed and requires interventions to modify knowledge of symptoms, and beliefs about treatments, to be more amenable to appropriate help-seeking. Broader research investigating mental health literacy using instruments other than the survey constructed by Jorm et al (1997) have come to the same conclusion (e.g. Hepworth & Paxton, 2007; Holliday, et al., 2005; Hunt & Rothman, 2007).

Studies of individuals with eating disorders

Perhaps most concerning in the literature on mental health literacy is the research suggesting that individuals who meet criteria for a diagnosable eating disorder have low recognition of symptoms, beliefs about treatments that are different to professionals and the scientific literature, and have stigmatising beliefs about disordered eating.
In a study of mental health literacy for eating disorders, which sampled a group of women with diagnosable bulimia, binge eating disorder or EDNOS, only 52% of participants recognised their symptoms as an eating disorder, despite 100% of the participants meeting DSM-IV-TR criteria (Mond, Hay, Rodgers, & Owen, 2006b). Furthermore, while the majority of participants reported that they believed GPs, psychologists, counsellors, family and friends were likely to be helpful in treating bulimia; most endorsed lifestyle changes such as taking vitamins and minerals and held psychiatrists and antidepressant medication with low regard (Mond, Hay, Rodgers, & Owen, 2006b). As the mental health literacy for eating disorders in this group was inadequate, it is perhaps not a surprise that help-seeking amongst this sample was also found to be low (Mond, Hay, et al., 2007). Furthermore, those who did not recognise their problem as an eating disorder were less likely to have received treatment than those who did (Mond, Hay, Rodgers, & Owen, 2006b).

**Stigmatising attitudes**

One important aspect of mental health literacy is stigma, or the negative beliefs about a mental illness that impede problem recognition or appropriate help-seeking. Poor knowledge of eating disorders has been linked to a number of negative beliefs about individuals who experience them. In a study that investigated mental health literacy for eating disorders, using a vignette describing a 16-year old female with anorexia (‘Lucy’), it was found that of the undergraduate women who participated, 60% of participants believed that it was very or extremely important for Lucy to receive attention from others. The misperception of symptoms of mental illness, as “attention seeking” strategies, is not new and in the self-injury literature, has been associated with a reduction in the provision of assistance (Mackay & Barrowclough, 2005; Vivekananda, 2000). The study also found that 63% reported they would be
unwilling (14%) or had mixed feelings about (50%) interviewing Lucy for a job and approximately one third (34%) reported that they would find Lucy’s behaviour moderately, very or extremely irritating. Such attitudes are concerning in that they promote a reduction in social support and increased social isolation in individuals with eating disorders.

Negative attitudes towards individuals with eating disorders have been found in other community studies of stigma (e.g. Crisp, 2005; Roehrig & McLean, 2010; M. C. Stewart, Keel, & Schiavo, 2006). In particular the belief that eating disorders are primarily caused by vanity or other socio-cultural pressures, such as internalisation of the thin ideal, has been associated with increased negative opinions of individuals, such as ‘they are to blame for their illness’ (Crisafulli, Thompson-Brenner, Franko, Eddy, & Herzog, 2010; Crisafulli, Von Holle, & Bulik, 2008). Inversely, having an understanding of the biological and genetic factors that combine to produce an eating disorder is associated with a reduction in negative attitudes (Crisafulli, et al., 2010). Studies such as these illustrate how inadequate knowledge of eating disorders can engender negative attitudes towards individuals who experience them.

The implications of poor mental health literacy

Mental health literacy is an important determinant of problem recognition, of health behaviours such as preventive actions or management of symptoms, of non-stigmatising attitudes, of seeking help from supportive sources such as friends or family, and of treatment seeking from appropriate professionals (Goldney, Fisher, & Wilson, 2001; Jorm, Korten, Jacomb, Christensen, et al., 1997a). There are a number of ways in which poor mental health literacy may negatively influence these
outcomes, thereby decreasing the chances of early and appropriate help-seeking, and increasing associated burden.

**Poor mental health literacy is a barrier to help-seeking for oneself**

There are a number of ways in which poor mental health literacy may affect the ability of an individual to seek help for an eating disorder. First, poor mental health literacy impairs problem recognition. If an individual does not recognise certain thoughts or behaviours as symptoms of an illness, then it is unlikely they will seek to change them, or seek advice and support about how to manage them (Hepworth & Paxton, 2007; Mond, Hay, Rodgers, & Owen, 2008).

Second, negative or stigmatising attitudes towards people with eating disorders may result in an individual feeling too ashamed or guilty to seek out appropriate care. Stigmatising attitudes, such as the belief that eating disorders are ‘attention seeking’ or ‘due to vanity’ (Mond, Robertson-Smith, et al., 2006), may lead to the belief that the individual is not ill or not deserving of professional care (Hepworth & Paxton, 2007; O'Hara & Smith, 2007). Upholding a belief that one should be able to cope with the problem on one’s own, is also known to be associated with a reduction in help-seeking (Rickwood, et al., 2007; M. C. Stewart, et al., 2006).

Third, not knowing what treatments are effective, where to seek professional help, what services are available, or how to contact them, are known barriers to treatment seeking (Rickwood, et al., 2005; C. J. Wilson & Deane, 2001). In addition, when an individual does happen to seek professional care but has incomplete knowledge of the risks and benefits of current treatments, they are less likely to engage or adhere to the treatment regimen (Hepworth, Paxton, & Williams, 2007; Rickwood, et al., 2005).
Inversely, improvements to mental health literacy have been associated with improved help-seeking (Wright, McGorry, Harris, Jorm, & Pennell, 2006). A common-sense finding from the research literature is that knowing where and how to go about seeking professional help facilitates appropriate treatment seeking (C. J. Wilson & Deane, 2001). In addition, more positive beliefs about the helpfulness of medical and psychological treatments have been associated with a greater likelihood of seeking out and engaging effective treatments (Goldney, Fisher, Dal Grande, & Taylor, 2005; Jorm, Christensen, & Griffiths, 2006; Jorm & Kelly, 2007).

**Poor mental health literacy is a barrier to helping behaviours**

*Helping behaviours* are the actions taken by people in the social network of an individual with mental illness, to support that individual to manage symptoms or seek treatment to alleviate them. Research on disclosure and help-seeking has consistently shown that individuals will first turn to close friends and family members for advice and support when experiencing an eating disorder (Becker, et al.; Mond, Marks, et al., 2007). This emphasises the influential role that family and friends can play in the outcome of their loved one’s illness, and the way in which poor mental health literacy in the social network can negatively affect individuals with eating disorders.

One example is that poor mental health literacy can result in the social network providing inadequate support (Jorm, Blewitt, Griffiths, Kitchener, & Parslow, 2005). Social support has been found to strongly affect health outcomes, especially in mental illness (Brugha, Wing, Brewin, MacCarthy, & Lesage, 1993). Unlike physical illness, which often mobilises social resources, negative attitudes about mental illness can result in the withdrawal of potential sources of support (Byrne, 2000). Reduced social support can be the result of inadequate knowledge or of stigma. Poor mental health literacy is often associated with negative or stigmatising
attitudes towards mental illness (Hocking, 2003). For example, when families and loved-ones feel ashamed of or unprepared to cope with an individual’s illness, supportive actions are less likely to be provided (Byrne, 2001; Dimitropoulos, et al., 2008). In particular, carers of individuals with eating disorders often report feeling guilty about the development of their child’s illness, and anger or hostility about the individual’s symptoms and a perceived inability to overcome them (Treasure, et al., 2001; Zabala, Macdonald, & Treasure, 2009). Having a greater understanding of the biopsychosocial causes of eating disorders and the positive impact friends and family can have in an individual’s recovery, are aspects of good mental health literacy, which can aid social support.

The second way in which poor mental health literacy in the social network can negatively affect individuals with eating disorders is that it can result in a failure to facilitate appropriate treatment seeking. Research investigating facilitators of treatment seeking has found that prompts from family and friends to seek professional care are instrumental in the decision to engage treatment (Hepworth & Paxton, 2007). Given that the community is known to have difficulty recognising the symptoms of eating disorders, poor mental health literacy in social networks is likely to hamper problem recognition and thereby delay engagement of both informal and formal support. In addition, social networks are unlikely to encourage appropriate treatment seeking if they harbour negative attitudes towards professionals and treatment interventions. Not knowing what to expect from a mental health professional, or lacking trust in mental health services and their treatments, are associated with lower rates of help-seeking and a reduction in adherence to treatment course (Rickwood, Cavanagh, Curtis, & Sakrouge, 2004; Rickwood, et al., 2005). Given that most members of the community do not consider psychologists to be helpful and widely
regard psychiatrists and psychotropic medication as harmful, there are pervasive beliefs about professionals and their interventions that present barriers to facilitating treatment seeking in others.

Recent research investigating the effects of increasing mental health literacy in the social networks of individuals with mental illness has shown promising outcomes and warrants further investigation in relation to eating disorders (Rickwood, et al., 2005; C. J. Wilson & Deane, 2001).

**Summary of Chapter 1.3**

The *National Survey of Mental Health Literacy* was a seminal study that introduced the concept of ‘mental health literacy’ as the knowledge and beliefs about mental illness that aid recognition, management or prevention. It also was the first population-based survey to systematically reveal great deficits in the public’s awareness of mental illness and understanding of effective treatments.

The results of mental health literacy studies for eating disorders suggest that young adult women in particular, the group most at risk of developing an eating disorder, uphold beliefs that are conducive to low and inappropriate help-seeking. They believe that self-help interventions are more helpful than mental health specialists, perceive treatment as difficult or ineffective in the long term, and have a reluctance to consider the potential benefits of prescription medication. Inadequate knowledge of eating disorder symptoms and effective treatments are, however, not confined to young women. Poor mental health literacy is widespread and commonly occurs in individuals with eating disorders.
The implications of poor mental health literacy in the community are that individuals are less likely to seek appropriate help and support for themselves, and that people within their social network are less likely to be able to provide empathic assistance or advice about where to seek effective professional care. Given that eating disorders are known to be a common problem among young women, are associated with a high level of burden and disability, yet appropriate help-seeking is low, there is an obvious need to improve mental health literacy for eating disorders in the community. The development of interventions that can increase mental health literacy and help-seeking behaviours is therefore an important goal of the current research.
Chapter 1.4: Improving help-seeking and mental health literacy for eating disorders

“…we need to take this seriously because… parents are at a loss. They ask me how they can protect their daughters, what can they do? I have some suggestions…”

- Naomi Wolf (Feminist)
Improving mental health literacy for eating disorders is one way to improve the appropriateness of informal help-seeking and the rates of eating disorder specific treatment seeking. Interventions aimed at increasing mental health literacy can target individuals at risk of developing an eating disorder (selective interventions), or those currently experiencing an eating disorder (targeted interventions), or can address the wider community more broadly (universal interventions).

**Interventions to improve mental health literacy for eating disorders**

**Targeted and selective interventions**

One example of a targeted intervention that aimed to increase mental health literacy in individuals with eating disorders is the Health and Wellbeing study (Hay, Mond, et al., 2007). This research included an intervention arm, whereby 102 participants who screened positive for an eating disorder at follow-up interview and consented to participate in further research, were randomised to receive either a brief mental health literacy intervention (comprising information in print about eating disorder symptoms and efficacious treatments, an effective self-help manual and where to go for further information or services) or information about local mental health services only. Mental health literacy, treatment seeking, psychopathology and health-related quality of life, were assessed prior to the intervention and at six and 12-month follow-up.

With regard to mental health literacy, it was found that neither the intervention nor the control group showed any significant differences over time in their ability to accurately recognise the problem in the vignette (as bulimia), their perceptions of the illness, or beliefs about treatments, with one exception; significantly more of those in
the intervention group were less likely to regard treatment for bulimia as very or extremely difficult at 12 months follow-up.

With regard to help-seeking, the proportion of participants who reported having sought help was low at baseline \((n = 12, 9.8\%)\), but across the whole sample was found to increase significantly at 12 months follow-up \((n = 42, 34\%)\). It is important to note that the authors defined help-seeking as inclusive of both informal and formal modes, and of those found to have sought help at 12 months, the majority \((n = 21)\) had been to a support group or alternative therapist (such as a massage therapist), neither of which are supported as effective by the scientific literature. Encouragingly, 20 had sought help from a GP, counsellor, social worker or dietitian. However, only one participant reported seeing a psychologist or psychiatrist.

Although there was a significant increase in help-seeking over time, there were no significant differences across the two groups. This finding could be explained in two ways. First, it is possible that the control condition was just as effective as the intervention condition in improving help-seeking. But perhaps more plausible, given the failure of either intervention to increase mental health literacy, this result is the measurement of a natural increase in help-seeking over time, a phenomenon which has been noted in other research (L. Bell, 2001; Cachelin, Rebeck, Veisel, & Striegel-Moore, 2001; Cachelin, Striegel-Moore, & Regan, 2006).

Other mental health literacy interventions have been shown to be effective in increasing knowledge. Selective prevention studies, for example, have been carried out quite widely (Becker, et al., 2004; Hay, Mond, et al., 2007; Sharp, Hargrove, Johnson, & Deal, 2006; Stice & Shaw, 2004). These interventions typically focus on psychoeducation in high-school age females, and present elements such as common symptoms, health risks associated with unhealthy weight-control behaviours, known
risk factors for the development of a disorder and current available treatments (Stice & Shaw, 2004; Stice, Shaw, et al., 2007). Such programs have been instituted and evaluated since the early 1990s (Killen, et al., 1994; Moriarty, Shore, & Maxim, 1990; Paxton, 1993) and have demonstrated that educational programs can be very effective in increasing knowledge of eating disorders, but may have limited impact on the development of eating pathology in those at risk (Franko & Orosan-Weine, 1998; Steiner-Adair, et al., 2002). The most recent interventions, which have been found to be the most effective, typically target high-risk individuals and present interactive exercises that focus on reducing risk factors shown to predict onset of eating pathology, such as body dissatisfaction (Stice, Shaw, et al., 2007). In fact, a meta-analysis of eating disorder prevention programs showed that interventions that incorporated interactive group-format sessions and those that actively targeted the development of skills (e.g. reduction of internalisation of the thin ideal through media literacy) had the strongest effects on changing knowledge and, in particular, eating and weight-control behaviours (Stice, Presnell, Gau, & Shaw, 2007; Stice & Shaw, 2004). It is therefore possible that the Health and Wellbeing study failed to find a significant increase in mental health literacy because the intervention given was too passive.

Importantly, while the selective intervention literature has shown that well designed interventions can be effective in changing the knowledge of individuals at risk of developing an eating disorder, such that over time behaviour change also occurs, the narrow focus on eating pathology as an outcome measure has greatly restricted analysis of the broader impact of increasing mental health literacy. The impact of increasing knowledge on help-seeking behaviours, for example, has rarely been assessed.
**Universal interventions**

Improving the mental health literacy of the broader community is likely to have greater positive outcomes than improving the mental health literacy of those with or at risk of eating disorders, alone. For example, enhancing the mental health literacy of those in contact with people with eating disorders may increase empathy and social support, improve the likelihood of recommending appropriate professional care and increase the provision of assistance to those who experience disability or burden associated with eating disorders. It may also have the added benefit of secondary prevention, whereby increased knowledge of the consequences of eating disorders reduces the likelihood that at-risk individuals will engage in disordered eating and exercising in the future.

Unlike the selective and targeted literature however, this area of research is not well developed. While many eating disorder advocacy organisations run their own community-based training programs aimed at increasing understanding and awareness, these are rarely scientifically evaluated. Furthermore, a systematic review of community resources for eating disorders in Australia, found 14 resources specifically aimed at improving knowledge. While most of these were developed based on the scientific literature, none had been evaluated to determine how effective they were (National Eating Disorders Collaboration, 2010). In addition, two systematic reviews of scientifically evaluated community-based mental health literacy interventions, failed to uncover a single program addressing eating disorders (Jorm, In press; Kelly, Jorm, & Wright, 2007). By comparison however, a range of

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6 Some examples include *Understanding and Managing Eating Disorders in Schools* (Eating Disorders Foundation Victoria), *Busting Myths Around Eating Disorders* (Eating Disorders Foundation Victoria), *Dove BodyThink for Educators & Parents* (The Butterfly Foundation), *Understanding Eating Disorders - Prevention, Detection and Support* (beat UK). None of these programs has research published describing the systematic evaluation of their effects on knowledge or behaviour.
interventions have been developed for other disorders, especially for depression, and found to be effective in increasing community knowledge of symptoms and effective interventions (Jorm, In press). That there are currently no evaluations of interventions aimed at increasing community mental health literacy for eating disorders, demonstrates the presence of a significant gap in the literature.

**Interventions to improve help-seeking for eating disorders**

A systematic review of the treatment seeking literature uncovered 200 relevant documents and evidence for a wide range of factors that can influence whether someone who is developing or experiencing an eating disorder will decide to seek help (see Table 2) (Hart, Granillo, Jorm, & Paxton, In submission). Some of these factors are common across psychiatric disorders, while others are specific to the eating disorders. Some factors interact whereby the presence of one factor will mediate the effect of another, yet other factors can simultaneously act as both facilitator and impediment to help-seeking. Because help-seeking involves such a wide range of knowledge, attitudes and behaviours, interventions aimed at increasing help-seeking vary greatly and have been found to have varying degrees of success.

As the demographic factors associated with help-seeking are generally fixed, studies do not try to manipulate these effects, but target particular groups with high needs. There have, for example, been interventions for increasing the help-seeking in adolescents and young people (Daigneault, 2000; Noordenbos, 1994) and in men (Rosen, 2003). These interventions however, tend to have only small effects.

Many investigations have been conducted to look at the effect of decreasing institutional barriers to treatment for eating disorders. Community based interventions, such as the STAR program, have focused on decreasing the financial
and economic barriers to care by instituting law reform, increasing insurance coverage for eating disorder treatments, and elevating awareness of the prevalence and burden of eating disorders and thereby the economic value in providing timely and effective treatments (Gregorio, 2009; National Eating Disorders Association, 2010).

Table 2

Factors affecting help-seeking for the eating disorders.  

<table>
<thead>
<tr>
<th>Demographic factors</th>
<th>Personal factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Knowledge of symptoms</td>
</tr>
<tr>
<td>Gender</td>
<td>Acceptance of illness</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Attitudes to mental health care</td>
</tr>
<tr>
<td>Level of education</td>
<td>Attitudes to physical health care</td>
</tr>
<tr>
<td>Geographic location</td>
<td>Acceptance of the need for help</td>
</tr>
<tr>
<td><strong>Institutional factors</strong></td>
<td>Self-stigma</td>
</tr>
<tr>
<td>Professional training of staff in eating disorders</td>
<td>Knowledge of appropriate treatments</td>
</tr>
<tr>
<td>Personal experience of staff with eating disorders</td>
<td>Previous experience with health service</td>
</tr>
<tr>
<td>Ability to pay for services/insurance coverage</td>
<td></td>
</tr>
<tr>
<td>Attitudes of referring professional to psychotherapy and specialist services</td>
<td></td>
</tr>
<tr>
<td>Attitudes of referring professional to eating disorders</td>
<td></td>
</tr>
<tr>
<td>Availability/shortage of treatment services</td>
<td></td>
</tr>
<tr>
<td><strong>Illness-related factors</strong></td>
<td></td>
</tr>
<tr>
<td>Type of eating disorder</td>
<td>Knowledge of symptoms</td>
</tr>
<tr>
<td>Distress about eating disorder symptoms</td>
<td>Knowledge of appropriate treatments</td>
</tr>
<tr>
<td>Duration of illness</td>
<td>Confidence in providing assistance</td>
</tr>
<tr>
<td>Perceived weight problem</td>
<td>Attitudes toward professional help-seeking</td>
</tr>
<tr>
<td>Comorbid Axis I disorder</td>
<td>Stigmatising beliefs about eating disorders</td>
</tr>
<tr>
<td>Comorbid Axis II disorder</td>
<td>Stigmatising beliefs about mental illness</td>
</tr>
<tr>
<td></td>
<td>Self-stigma</td>
</tr>
<tr>
<td></td>
<td>Previous experience with health service</td>
</tr>
<tr>
<td></td>
<td>Level of assistance offered to individual</td>
</tr>
</tbody>
</table>

Such approaches are in their infancy though, and their effect on help-seeking is yet to be evaluated. Importantly, previous community research investigating

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7 These factors are known to effect help-seeking because each has been investigated in the treatment seeking literature. A description of the search procedure is provided in (Hart, et al., In press).
perceived barriers to care in individuals with binge eating disorder, found that while respondents felt a lack of health insurance cover and the cost of treatment were significant barriers to care, neither amount of insurance cover nor annual income, reliably predicted treatment status (Cachelin, et al., 2001).

Other programs have focused on clinician mental health literacy as a barrier to care. Health and mental health professionals’ knowledge of eating disorder symptoms and referral pathways, have been surveyed (Hay, Darby, & Mond, 2007; Hay, De Angelis, Millar, & Mond, 2005), and interventions implemented to increase the level of screening and skills in those who are likely to detect, manage and treat eating disorders (Johnston, Fornai, Cabrini, & Kendrick, 2007; Mond, Myers, et al., 2008; Waller, et al., 1996). One intervention that aimed to increase screening, detection and mental health literacy in combination was the National Eating Disorders Screening Program (NEDSP) (Becker, et al., 2004). This large study, conducted in the United States, used screening questionnaires and face-to-face counselling sessions, in which at-risk students were given information about eating disorders and referrals to specialists. The majority of participants reported that the program had made them more aware of the danger of eating disorders and the availability of treatment. In addition, just over one quarter reported that this information would enable their own help-seeking. Furthermore, over one third of those who screened positive for an eating disorder went on to seek treatment as a result of the program. While this intervention had encouraging results, it is concerning that almost two thirds of those with probable eating disorders did not seek treatment. In addition, the program screened 9,069 participants, interviewed 5,787 and followed up with 344, yet only 43 reported having sought professional treatment for their eating disorder. It cannot, therefore, be considered a cost-effective approach to increasing help-seeking.
Although the NEDSP used a face-to-face format, the results appear to concur with those of the *Health and Wellbeing* study, whereby simply providing information to individuals with eating disorders, about seeking help, may not be enough to prompt treatment seeking. In contrast however, interventions designed to increase the mental health literacy and helping behaviours of the social network, appear to present a particularly strong model for increasing help-seeking in individuals with eating disorders. Because social networks play a role in: detecting early warning signs, providing information on how to find appropriate treatment, shaping attitudes towards illness and professionals, encouraging treatment seeking, encouraging disclosure to and engagement with professionals; social networks have the potential to positively affect all these outcomes (Kelly, et al., 2007). Therefore, where interventions aimed at individuals with eating pathology may not be sufficient to overcome barriers such as shame about eating behaviours, or a belief that one is not sick enough to deserve treatment (L. Bell, 2001; Hepworth & Paxton, 2007; Mond, Hay, Rodgers, Owen, & Mitchell, 2006; Treasure, et al., 1999), the social network may be able to decrease such personal barriers by providing motivation, information and support for seeking appropriate care. However, this pivotal role is only possible if the social network has the knowledge and skills to do so, and the current literature suggests that the community’s understanding of eating disorders and their effective treatments, is inadequate. Interventions that increase knowledge and helping behaviours in the social network, therefore warrant greater investigation.

The only example of an intervention designed to improve the facilitative role of social networks in assisting with eating disorders, is that of Rees and Clarke-Stone (2006). In their study, teachers and school nurses from three secondary schools were presented with an intervention aimed at increasing knowledge of symptoms and
appropriate referral for eating disorders in students. Each school had one of three different conditions; the first involved teachers and school nurses being provided with guidance documents on detecting eating disorder symptoms and making appropriate referrals to health and mental health specialists, as well as the provision of a consultation meeting with eating disorder experts. The second condition involved teachers and school nurses receiving the guidance documents only, and the third condition involved no guidance or consultation at all. All three schools received leaflets and posters informing children that teachers and the school nurse were available for help with eating disorders, and all parents received a list of the signs and symptoms of eating disorders and a contact number for the school nurse. In addition, all children were screened for the presence of an eating disorder using the EDE-Q. The study found that despite the identification of students with diagnosable eating disorders, via the EDE-Q, some of whom were not already known to staff, there was no increase in the identification of eating disorder cases. Importantly, although the staff reported feeling more confident in approaching students about a possible eating disorder, as a result of the intervention, the study found no change in their helping behaviours. In addition, the information provided to students and parents did not appear to prompt help-seeking from either teachers or school nurses.

Despite these outcomes, this research does not amount to evidence that interventions aimed at social networks are ineffective in increasing help-seeking. Instead, limitations of the research may have precluded a more positive finding. For instance, it may be that the researchers targeted the wrong adults. Given that young people report that they are most likely to turn to their family members or friends for help with a mental health problem (Jorm, Wright, & Morgan, 2007; Mission Australia, 2007; Mond, Marks, et al., 2007; Rickwood, et al., 2005) the intervention
may have been more effective had it targeted help-seeking from family members and in particular, parents, rather than teachers or school nurses.

It is also likely that, just as changing eating disordered or help-seeking behaviours requires complex interventions (Jorm, et al., 2003; Stice, Shaw, et al., 2007), so too might changing the helping behaviours of the social network, require a more complex level of intervention than simply providing information on how to assist. Further research investigating the impact of active interventions, focusing on psychoeducational material, experiential learning and skill development, is therefore needed to ascertain whether enhancing the knowledge and skills of the social network can lead to increased help-seeking in those with eating disorders.

One such promising intervention is mental health first aid, a community-based training program that aims to increase mental health literacy, helping behaviours in those providing assistance and help-seeking in those with mental illness. However to date, there have been no investigations of how mental health first aid interventions affect knowledge and help-seeking for eating disorders.

**Summary of Chapter 1.4**

Current research suggests there is a pressing need for interventions that decrease barriers and increase incentives for seeking treatment specifically for eating disorders. It also suggests that the public’s knowledge and understanding of eating disorders is inadequate and the occurrence of stigmatising attitudes is likely to result in a lack of assistance and support provided to individuals with eating disorders.

Increasing mental health literacy is one way of increasing knowledge of symptoms and effective treatments that can aid the decision to engage treatment.
Although there have been many investigations of how mental health literacy interventions can increase the knowledge of individuals with eating disorders, there are not any examples of interventions provided to broad community groups. This gap in the literature exists despite other research finding such interventions have been effective in increasing awareness of other mental illnesses such as depression.

Similarly, the literature on interventions engaging the social network to increase help-seeking behaviours is scant. Although a range of interventions have been developed, which focus narrowly on one or more barriers to care, these typically have limited impact. Given the potential of the social network to influence many personal, illness and social factors that impede treatment seeking, further research is needed to develop and evaluate a community based program for increasing mental health literacy and helping behaviours in the social network. One intervention model that might prove suitable for increasing mental health literacy and help-seeking for the eating disorders, is that of mental health first aid.
Chapter 1.5: Mental health first aid

“Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime.”

Chinese proverb
Mental health first aid is a community-based education intervention that may be able to adequately overcome the limitations of other interventions designed to increase help-seeking and mental health literacy, because of its focus on developing knowledge, skills and confidence in the social networks of people with mental illness.

**The concept of mental health first aid**

*Mental health first aid* is defined as the help provided to a person developing a mental health problem or experiencing a mental health crisis. The first aid is given until the appropriate professional treatment is received, or the crisis resolves (Kitchener & Jorm, 2002a). Mental health first aid is provided by any member of the community to someone who has a mental health problem or is at risk of harm, and is analogous to the physical first aid provided in a medical emergency by lay members of the community, until professional help arrives (Kitchener & Jorm, 2002a). Mental health first aid techniques are taught in a 12-hour training program offered by the Mental Health First Aid Research and Training Program (MHFA). MHFA was started in 2001, by Betty Kitchener and Tony Jorm, in response to Australian surveys of mental health literacy which revealed that the public lacked skills in responding to mental health problems (Jorm, Korten, Jacomb, Christensen, et al., 1997a, 1997b; Kitchener & Jorm, 2008). Based on the successful D.R.A.B.C action plan for emergency medical first aid (see Table 3), the MHFA training program utilises an action plan, A.L.G.E.E (Table 3), to teach its students first-aid techniques (Kitchener & Jorm, 2002b; Kitchener, Jorm, & Kelly, 2010). The ALGEE mnemonic is used in the training program to provide attendees with a course of action when they assist someone with a mental illness.
Table 3

Action plans for first aid.

<table>
<thead>
<tr>
<th>MHFA action plan</th>
<th>St. John Ambulance action plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Approach, assess and assist with any crisis</td>
<td>D. Danger – check for danger</td>
</tr>
<tr>
<td>L. Listen non-judgementally</td>
<td>R. Response – check if the person is conscious</td>
</tr>
<tr>
<td>G. Give support and information</td>
<td>A. Airway – check if the person’s airway is clear</td>
</tr>
<tr>
<td>E. Encourage appropriate professional help</td>
<td>B. Breathing – check if the person is breathing</td>
</tr>
<tr>
<td>E. Encourage other supports</td>
<td>C. Circulation – check if the person has a pulse</td>
</tr>
</tbody>
</table>

The MHFA course is typically run over four sessions and begins with an overview of the prevalence of common mental illnesses in Australia, their associated burden of disease, and a discussion of how the disability caused by mental illness is comparable to the disability caused by many common and incapacitating physical illnesses. The course proceeds by discussing the signs and symptoms, possible causes, application of the ALGEE action plan, evidence based-treatments and further resources, for each of: depression, anxiety disorders, psychotic disorders and substance use disorders. How to assist someone experiencing a mental health crisis, in the form of suicidal thoughts or behaviours, a panic attack, an acute stress reaction following a trauma, and a psychotic episode, are also covered. Through case-studies of how the ALGEE action plan may be implemented, a discussion of the lived experience of each of these disorders, and a review of the current scientific literature on effective treatments, the MHFA course aims to teach attendees to: promote life where a person may be a danger to themselves or others, provide help to prevent a mental health problem from developing into a more serious state, promote recovery of
good mental health, and provide comfort to a person suffering a mental illness (Kitchener & Jorm, 2002a, p. 2). To date, there is no information about the signs and symptoms, effective treatments or how to provide assistance, for eating disorders, in the standard 12-hour MHFA training.

**The aims of MHFA training**

In addition to promoting life, providing help and comfort, and promoting good mental health at the individual level, other broader aims of the training have also been outlined (Jorm, Kitchener, Kanowski, & Kelly, 2007; Jorm, Kitchener, & Mugford, 2005; Jorm, Kitchener, O'Kearney, & Dear, 2004; Kitchener & Jorm, 2002b, 2004, 2006, 2008). As a public health education program, MHFA training also aims to recognise and overcome a number of problems at the community level (see Table 4).

**Table 4**

Community problems addressed by the MHFA training program.

1. The low rate of correct recognition of mental illness
2. Low skill level and a lack of confidence in responding to mental health problems
3. Ongoing stigmatisation of mental illness and social distance from those with mental health problems
4. High prevalence of mental illness with an associated large unmet need for treatment
5. Substantial burden of sub-clinical symptoms
6. The uneven geographical distribution of health care
7. The need for early intervention in emerging mental illnesses

MHFA training aims to address these problems through increasing mental health literacy, increasing understanding of the lived experience of mental illness and thereby increasing empathy, decreasing stigma and social distance, encouraging
beliefs about treatment to be more like health professionals, and encouraging mental health problems to be viewed as real and manageable forms of illness. The methods employed by the training program to achieve each these aims are discussed in turn.

1. Addressing the low rate of correct recognition of mental illness. The training program is designed to increase recognition and correct labelling of mental health problems by educating the social networks of those with mental illness about the signs and symptoms of a developing disorder (Kitchener & Jorm, 2002b, 2004). Given the prevalence of mental illness in the community, it is likely that each and every individual will either experience a mental illness, or be in touch with someone who does (Jorm, Kitchener, et al., 2007). Each member of the community can therefore be considered part of a social network that can act to support a person with mental illness (Kitchener & Jorm, 2008). The training is designed to be universal, and broadly acceptable to a wide range of audiences.

2. Elevating low skill level and a lack of confidence in responding to mental health problems. The MHFA training teaches participants how to apply the ALGEE action plan in response to a developing mental health problem, existing mental illness, or current mental health crisis. The ALGEE mnemonic was specifically designed to improve knowledge of appropriate first aid strategies and confidence in applying them (Jorm, Kitchener, et al., 2007; Kitchener & Jorm, 2008).

3. Reducing ongoing stigmatisation of mental illness and social distance from those with mental health problems. By discussing the lived experience of mental illness and exploring how disruptions to physiological systems result in particular symptoms, the training encourages participants to understand that mental health problems are real medical conditions and not the result of a ‘weak character’
(Kitchener & Jorm, 2002a). Facilitating an understanding of mental illness in this way is known to decrease social distance (Jorm & Griffiths, 2008).

4. Understanding the high prevalence of mental illness with an associated large unmet need for treatment. Through increasing knowledge of and decreasing negative attitudes towards professionals and effective interventions, the course aims to reduce the unmet need for treatment by having those who provide first aid facilitate health behaviours and help-seeking in those with mental illness (Jorm, et al., 2003; Jorm, Kitchener, et al., 2007; Jorm, et al., 2004).

5. Understanding the uneven geographical distribution of health care. Increasing the capacity of social networks also acts as a logistical response to institutional disparity, especially in rural and remote communities, where increasing the number of lay community members who are trained to assist those with developing mental health problems, or to respond to mental health crises, can produce better outcomes for people with mental health problems (Jorm, et al., 2004; Sartore, et al., 2008).

6. Addressing the substantial burden of sub-clinical symptoms. The training provides a discussion of how many sub-threshold mental health problems can be alleviated or managed by implementing self-help interventions, which are easily achieved and known to be effective, such as moderate physical exercise and seeking support from family and friends. Through education about self-help interventions, the training encourages participants to facilitate health behaviours in others and model them in themselves (Jorm & Griffiths, 2006; Jorm, Kitchener, et al., 2005).

7. Appreciating the need for early intervention in emerging mental illnesses. In a similar vein, the course aims to increase early intervention by discussing how responding to an emerging mental illness with more benign treatments can have a positive effect on illness trajectory and can reduce the social, emotional, physical and
The financial burden of serious mental illness in the long term (Kitchener & Jorm, 2008; McGorry, Purcell, Hickie, & Jorm, 2007). The training encourages participants to provide help early and to explain to others with mental health problems, the benefits of timely treatment seeking.

**Evaluations of MHFA training**

To establish how effective the MHFA training is in attaining its wide range of aims, a number of evaluation studies have been undertaken since its inception, some controlled and others not.

**The first evaluation trial**

The first trial was conducted in 2001 (Kitchener & Jorm, 2002b), with 210 community members living in the Australian national capital, Canberra. Participants completed baseline, post-test and six month follow-up self-report questionnaires, which included demographic questions, an item about how confident they felt in helping someone with a mental health problem, and a series of questions about any assistance they may have provided in the past. Participants were also given the *National Survey of Mental Health Literacy* questionnaire (Jorm, Korten, Jacomb, Christensen, et al., 1997a) (see Chapter 1.3 for further discussion), as well as a social distance scale, which asked participants to rate on how willing they would be to engage in a range of behaviours such as moving next door to Mary/John or spending an evening socialising with them. Finally, questionnaires also assessed familiarity with diagnoses of depression and schizophrenia by asking if the respondent, or any one in their family, had ever had a problem similar to the Mary's/John's.
The follow-up questionnaire was completed by 166 participants (79%). Measures showed significant increases from baseline to follow-up in: respondents’ disclosure of a personal history of mental illness, confidence in providing help to someone, amount of help actually provided, recognition of the schizophrenia vignette, and knowledge of helpful (evidence-based) treatments. In addition, an increase at the level of trend was found for disclosure of a family history of mental illness. Also at the level of trend was a decrease in the number of proportion of respondents who had advised someone to seek professional help for a mental health problem. This is an interesting finding given that advising professional help is a step in the ALGEE first aid action plan. There was also a significant decrease in scores on the social distance scale between baseline and follow-up. While the *National Survey of Mental Health Literacy* questionnaire failed to find a significant increase in the correct labelling of the depression vignette, it is likely that the participants were already at ceiling, as 91.4% of respondents correctly labelled the profile of symptoms at baseline. By comparison, only 56.6% correctly labelled the schizophrenia profile at baseline. Given that the evaluation had a good retention rate, found positive effects on knowledge, stigmatising attitudes, confidence in helping and actual help provided to those with mental illness, Kitchener and Jorm (2002b) concluded that MHFA training appears to be effective in improving mental health literacy and has the potential to have a significant impact on public education in mental health.

**Controlled trials**

The second and third evaluations were randomised controlled trials conducted with employees in a public service department (Kitchener & Jorm, 2004) and with community members living in rural Australia (Jorm, et al., 2004). Both studies used
the same measures as the first, with the exception that a measure of participant physical and mental health was also included (SF-12).

In the second work-place evaluation, significant increases between baseline and follow-up scores for the intervention group were found for: correct labelling of vignette when schizophrenia and depression were combined, knowledge of helpful treatments when schizophrenia and depression were combined, confidence in providing assistance to someone with a mental illness, and the proportion of respondents who had advised someone to seek professional help for a mental health problem. The intervention group also showed significant decreases in social distance towards a person with depression, and social distance when scores for schizophrenia and depression were combined, between their baseline and follow-up scores. However, no significant group by time interactions were found for: disclosure of personal or family history of mental illness, correct labelling of schizophrenia or depression vignette, knowledge of helpful treatments for depression, knowledge of helpful treatments for schizophrenia, social distance towards a person with schizophrenia, amount of contact with a person with a known mental illness, and actual help given to a person with a mental health problem. Although no improvement in correct labelling of vignettes was found, it is possible that participants were at ceiling as 90.2% of the depression and 74.6% of the schizophrenia vignettes were correctly labelled at baseline. Given that participants were either given the depression or the schizophrenia vignette, cell sizes across the groups, which included intention-to-treat scores, were relatively small for the measures on social distance and knowledge of helpful treatments. A lack of power may explain why group by time effects were not detected when the vignette cases were considered separately, but were detected when vignette cases were combined. Perhaps the most interesting of the
study’s results, was the finding that the participants in the intervention group showed a significant improvement on the mental health subscale, between baseline and follow-up. This effect was shown to be specific to mental health, as there was no group, time, or group by time effects for the physical health subscale.

The third evaluation, of rural community members involved the same methods as the previous two studies, with three exceptions. First, participants were randomly allocated to either the intervention or wait list control group, according to their local government area cluster, rather than as individuals. Local government areas which received the training immediately were matched to wait-list control local government areas based on sociodemographic variables. This procedure was implemented due to the large geographical spread of participants in the study, and the need for participants to attend the mental health first aid training in groups. Second, this study was the first time that more than one instructor had conducted the intervention training courses. While all training was conducted by the founder of MHFA, Betty Kitchener, in the first and second evaluations, the third employed local health service staff who had been trained by Kitchener to run the courses independently. Each instructor ran courses in a matched pair of local government areas. Third, responses were gathered via individual telephone interviews, rather than self-report questionnaires. Interviewers and research staff who scored responses were blind to the group membership of the participants. The evaluation found that, from baseline to follow-up, a significantly larger proportion of the intervention group: disclosed a personal history of mental illness, correctly labelled the vignette and provided help to a person with a mental health problem, increased their knowledge of helpful treatments, reduced their social distance score and increased their confidence in providing assistance to someone with a mental illness. The results of this evaluation are perhaps
the most promising, as the conditions of this study most closely represent the conditions that regular training participants encounter in the community (e.g. different instructors, class sizes and locations). Given that this evaluation found the training produces positive changes on all measures of knowledge, attitudes and behaviour towards people with a mental illness, it is reasonable to conclude that MHFA training is effective in increasing the mental health literacy and skills for assisting with a mental illness, in the social networks of individuals with mental illness.

**Qualitative review of first aider experiences**

One concern of the MHFA organisation after the implementation of the training course and evaluations, was that participants may be left with an inflated sense of knowledge about, and confidence in assisting with, the mental illnesses. Furthermore, such a false sense of ability could potentially lead to adverse events for first aid recipients. To investigate the nature of any first aid interactions taking place after individuals had attended the MHFA training, a fourth evaluation was conducted (Jorm, Kitchener, et al., 2005). This study investigated first aid stories by inviting participants from the third evaluation study to participate in a follow-up investigation. One-hundred and thirty-one participants were telephoned and invited to complete a survey about post-training experiences, 19 to 21 months after completion of the program. Only those who were in the initial intervention group and had attended all training sessions were invited to participate. Although Kitchener and Jorm were again involved in conducting this evaluation, an independent organisation was employed to design the survey and analyse the results.

The survey included demographic questions as well as two streams of questioning, one for respondents who had experienced a situation where someone seemed to have had a mental health problem, and one for respondents who had not
(see Table 5). Questions were designed to elicit stories about first aid experiences in an open-ended format.

**Table 5**

*Open-ended questions asked of MHFA course attendees to elicit first aid stories.*

“Have you experienced a situation since attending the MHFA course where someone seemed to have a mental health problem?”

<table>
<thead>
<tr>
<th>Yes:</th>
<th>No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Could you tell us something about the situation(s) and the problems you believed the person(s) were experiencing?</td>
<td>1. Is this what you would have expected or is it somewhat surprising not to have come across such a situation?</td>
</tr>
<tr>
<td>2. Were you able to do anything specific to help the person?</td>
<td>2. If you were now to come across someone who you believed was suffering from a mental health problem, how well prepared would you feel to deal with that?</td>
</tr>
<tr>
<td>3. (If you were not able to do anything to help the person, what was the reason(s) that you were not able to help?)</td>
<td>3. How has doing the MHFA course changed how you relate to or feel about a person(s) suffering from mental health problems?</td>
</tr>
<tr>
<td>4. Can you give us any examples of something you did?</td>
<td>4. Is there anything else you would like to say about the MHFA course and its value for you?</td>
</tr>
<tr>
<td>5. What do you think were the effects on that person(s) of what you did?</td>
<td></td>
</tr>
<tr>
<td>6. Can you give us any examples of how your relations with that person have changed? Do you think this change had any effect on the person(s) either good or bad?</td>
<td></td>
</tr>
<tr>
<td>7. How (if at all) has doing the MHFA course changed how you relate to or feel about the person(s) suffering from the mental health problem?</td>
<td></td>
</tr>
</tbody>
</table>

Of the 94 respondents who completed the survey, 73 (78%) reported having experienced a post-training situation involving someone with a mental health problem. In response to the question, *Were you able to do anything specific to help the person?*, 54 participants (73%) reported that they had definitely been able to help or thought they had been helpful to the person. Although no respondents answered
‘no’ to this question, 4 respondents said they were unsure if they were helpful and 15 left the question unanswered. Twenty-one of the respondents who reported not having had experienced a situation involving someone with a mental health problem indicated that they felt they would either cope well (40%) or moderately well (54%) if the situation did arise. In the absence of any reported negative outcomes, the authors concluded that these responses indicate the ‘positive value of the MHFA course’ for community members (Jorm, Kitchener, et al., 2005, p. 9).

In further analyses, the answers for each respondent were collated to create stories of their experience. Qualitative analyses of stories were completed to investigate broad themes arising in descriptions of first aid experience. Stories were found to represent a number of themes, which were organised around the relationship between the respondent and the first aid recipient (i.e. whether they were family or friends or work colleagues) and whether they were able to provide subtle or practical assistance (e.g. listening and helping to calm someone in a panicked state versus providing someone with information and financial assistance to seek professional treatment). Indeed the stories suggested that there were a diverse range of experiences; some respondents explained that the course had simply affirmed prior learning, some had been able to implement new skills in their professional roles with positive outcomes for their clients, others had insight into their own or other family member’s mental illness, while some reported a simple change in perspective on how they should interact with a loved one who has mental illness, without the “conventional happy ending” (Jorm, Kitchener, et al., 2005, p. 4). Furthermore, irrespective of post-training first aid experience, respondents were overwhelmingly positive when asked to reflect on the value of the course.
Taken together, these very positive comments suggest that as an educational and training tool, the MHFA training course is well received by members of the community, who perceive it to be effective in increasing the knowledge of mental illness, skills and confidence in providing help and understanding to those with mental health problems.

Uncontrolled trials

A growing number of uncontrolled trials have been independently conducted by community-based organisations other than MHFA. These include one by the Centre for Rural and Remote Mental Health, NSW (Sartore, et al., 2008) and one by the Centre for Rural and Remote Mental Health, Southern Queensland (Hossain, Gorman, & Eley, 2009). Both involved the provision of training to staff employed in an outreach and support role (99 participants in NSW and 32 participants in Queensland) and evaluated changes in knowledge and skills using self-report questionnaires administered at baseline and six months follow-up. Both evaluations found participants' ability to identify disorders and endorse evidence-based interventions increased following training, as did their confidence in their ability to provide appropriate help.

An evaluation of the impact of providing MHFA training to football club coaches was also undertaken in rural Victoria (Pierce, Liaw, Dobell, & Anderson, 2010). This trial used the same measures as previous evaluations and found the same positive effects for confidence in assisting, recognition of mental health problems and beliefs about effective treatments. Interestingly, this evaluation also sought qualitative information from football players’ whose coaches had undertaken the training, and from control players whose coaches had received none. There were no differences in help-seeking preferences or beliefs about depression (e.g. a sign of personal
weakness) between intervention and control groups, however participants were less likely to consider someone with depression as dangerous at the post-training assessment. This evaluation was novel in that it sought to evaluate the effects of the training on potential first aid recipients. While little effect was found, it is possible that football coaches had little impact on the mental health seeking behaviours and beliefs of their players. Given that players indicated that a family member, mate or GP would be the individuals they would most likely turn to if they were experiencing depression, perhaps greater effects on mental health literacy and help-seeking would have been generated by providing training to all players, rather than just to coaches.

It should also be noted that a number of other evaluations have been conducted on variations of the MHFA training program, including trials involving provision of the Vietnamese-language version (Minas, Colucci, & Jorm, 2009), Chinese-language version (Lam, Jorm, & Wong), Youth version (YMHA) (Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010), Aboriginal and Torres Strait Islander version (AMHFA) (Kanowski, Jorm, & Hart, 2009) and e-learning version (Jorm, Kitchener, Fischer, & Cvetkovski, 2010). All of these evaluations have found training resulted in improvements in the skills, knowledge and confidence of participants.

**Limitations of MHFA training evaluations**

The evaluations of the MHFA training show that it has a significant effect on participants’ correct labelling of mental illness symptoms in a vignette, knowledge of effective treatments, negative attitudes towards people with a mental illness and importantly, their confidence, skills and provision of assistance to those experiencing a mental health problem. Furthermore, the evaluations do not seem to provide any
evidence that training in mental health first aid leads to adverse events, either for the attendees or for those receiving the assistance.

While the results of these evaluations are very positive, three important limitations must be noted. First, although the MHFA training was developed through extensive reviews of the current academic literature and extensive consultation with mental health experts, the ALGEE action plan and the first aid strategies taught throughout the program are not strictly evidence based. As no investigations on which mental health first aid strategies are effective existed prior to the commencement of MHFA training, the MHFA organisation has since embarked on a research program to develop consensus based best practice guidelines. In order to improve the quality of the first aid techniques being taught to the public, research has been carried out to develop guidelines on what constitutes best practice first aid, for depression (Langlands, Jorm, Kelly, & Kitchener, 2008a), psychosis (Langlands, Jorm, Kelly, & Kitchener, 2008b), suicidal thoughts and behaviours (Kelly, Jorm, Kitchener, & Langlands, 2008b), non-suicidal self-injury (Kelly, Jorm, Kitchener, & Langlands, 2008a), panic attacks (Kelly, Jorm, & Kitchener, 2009), traumatic events (Kelly, Jorm, & Kitchener, 2010) and substance misuse (Kingston, et al., 2009; Kingston, et al., 2011). An investigation of how one might provide first aid to someone developing, or experiencing, an eating disorder has not yet to be conducted. Furthermore, while the studies developing mental health first aid guidelines have been successful in reaching consensus on best practice strategies, there has not yet been an evaluation of MHFA training based on the developed consensus guidelines.

Second, the help-seeking literature consistently reports that individuals experiencing mental health problems are most likely to turn to friends or family members for initial support. The evaluations conducted to date have focused on the
effects of providing training to professionals who have an occupational responsibility to provide support to colleagues or clients. Given the great potential of increasing the capacity of the direct social network to respond effectively to mental illness, it is important that future research investigate the effects of providing MHFA training to family and friends who are likely to be in contact with individuals developing or experiencing mental illness.

Third, there are a number of important aims of the MHFA training course that have not yet been well evaluated. Seven aims of the course have been outlined (see Table 4) and those pertaining to participant skills, knowledge, stigmatising attitudes and confidence in providing assistance have been widely assessed in various settings, with positive effects consistently noted. However, other aims of the course relating to increasing early intervention, unmet need for treatment and the substantial burden of sub-clinical symptoms, have not been subject to the same level of assessment. Of the evaluation studies performed, only one investigated the effect of MHFA training on the first aid interaction (Jorm, Kitchener, et al., 2005). Although the evaluation conducted with football clubs collected information from football players whose coaches had received training, it did not investigate whether any coaches had provided a first aid intervention to a player and what outcome of that intervention had been (Pierce, et al., 2010). Therefore, in order to better understand the broader effects of MHFA training on issues such as increased empathy and social support and the uptake of effective health behaviours to reduce sub-threshold symptoms, future research needs to focus on evaluating first aid interventions provided by the participants of MHFA training.
**Summary of Chapter 1.5**

Mental health first aid training aims to increase the knowledge, skills and confidence in the social networks of people with mental illness. Evaluation studies to date have shown that MHFA training is effective in increasing knowledge of symptoms and effective treatments, increasing confidence in providing and actual assistance given to people with mental illness, among those who attend the training. While these results are very encouraging, there are limitations to the current evidence, including the need for consensus based, best practice guidelines to inform training materials, the need to examine the effect of providing training to family and friends, as well as the need to directly assess the effect of the first aid interaction on help-seeking behaviours in individuals with mental illness. If these issues are addressed, mental health first aid is an appropriate intervention for increasing mental health literacy and help-seeking behaviours in the eating disorders.
Chapter 1.6: Proposed research

“In science one tries to tell people, in such a way as to be understood by everyone, something that no one ever knew before...”

- Paul Dirac (Theoretical physicist)
The majority of individuals with a diagnosable eating disorder do not seek professional care and often utilise inappropriate informal help. There is, therefore, a large unmet need for treatment for eating disorders. If the substantial burden created by eating disorders is to be reduced, the community’s knowledge and skills needs to be improved and appropriate, early, help-seeking increased. Training in mental health first aid provides a powerful intervention model for increasing the capacity of the social network of individuals with mental illness to respond in a timely and supportive manner. To date, there has been no investigation of mental health first aid interventions for the eating disorders.

This research aimed to establish which strategies should be used by members of the public when providing mental health first aid for eating disorders, and to explore how providing interventions, which describe and encourage the provision of appropriate mental health first aid strategies, affects mental health literacy and help-seeking behaviours. The purpose of this project was to develop a set of guidelines on how to provide mental health first aid for eating disorders, and to understand how implementation of these guidelines can affect knowledge and helping behaviours in participants, and affect help-seeking in individuals with eating disorders. To achieve this, the project involved three separate but related studies, designed to build on each other, to develop a broad preliminary program of mental health first aid for eating disorders.

**Overview of research studies**

**Study 1: Development of guidelines**
The aim of the first study was to explore what mental health first aid strategies are currently used or encouraged for assisting people with eating disorders and which of these are considered by experts in the field to be the best practice strategies for assisting someone who is developing or experiencing an eating disorder. The purpose of this study was to develop a set of consensus-based guidelines, using the combined expertise of clinicians, consumers and carers, to inform the public about the best way to assist someone with an eating disorder. This study involved conducting a systematic literature review and Delphi consensus study. Strategies with the highest level of consensus were used to develop a guideline document on how to provide mental health first aid to someone who is thought to be developing or experiencing an eating disorder.

**Study 2: Web based evaluation**

The aim of the second study was to explore who is accessing the guidelines provided on the internet, the reasons for accessing this information, whether it is useful to them, and whether this information had any impact on their provision of assistance to someone with an eating disorder. The purpose of this study was to describe the characteristics of web-users who download the guidelines document and evaluate whether providing web-users with a mental health first aid guideline via the internet is useful to them. This study involved posting the developed guidelines on the internet via the MHFA website and evaluating their usefulness and impact via a set of online feedback questionnaires.

**Study 3: Training intervention**

The aim of the third study was to examine whether a training intervention on mental health first aid for eating disorders is effective in changing knowledge, attitudes and behaviours towards people with eating disorders. In particular, this study
examined whether mental health first aid training was effective in increasing mental health literacy, decreasing stigmatising attitudes towards people with eating disorders, increasing the provision of first aid behaviours, promoting help-seeking behaviours in those who attend and promoting help-seeking behaviours among those who are recipients of first aid. The purpose of this study was to develop, implement and evaluate a mental health first aid for eating disorders training intervention, based on the developed guidelines and the successful MHFA program action-plan model. It sought to increase mental health literacy and helping behaviours in those who received the training, and increase help-seeking in those with eating disorders.

This study involved delivering the 4-hour single session mental health first aid training intervention to young adults and welfare staff in contact with young people at risk of developing an eating disorder. The evaluation was designed to be a preliminary analysis of intervention protocol and methodological design, prior to the implementation of a full scale randomised controlled trial (Campbell, et al., 2000; Medical Research Council, 2000, 2008), and was therefore uncontrolled and expected to incorporate a relatively small sample size. The evaluation investigated the effects of the training on knowledge, attitudes and behaviours towards eating disorders, via a series of self-report questionnaires, provided at three time-points (baseline, post-training and six months follow-up). Information about first aid experiences, changes in health service use or mental health status of participants, were also gathered.
2. Mental health first aid interventions

for improving mental health literacy

and help-seeking

for eating disorders
Chapter 2.1: Development of guidelines on mental health first aid for eating disorders
Background

When faced with the prospect that a loved-one may be developing an eating disorder, most parents, partners or friends ask themselves ‘what can I do to help?’ (Alexander & le Grange, 2009; Methodist Hospital Eating Disorders Institute, 2004). Often community members in this situation turn to others in their social network for advice, or seek out information from health sources, such as eating disorder books or websites on the internet (Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005; Kelly, Jorm, & Rodgers, 2006; Reavley, Cvetkovski, & Jorm, In press). The problem, however, is that many of these sources do not contain evidence-based information; their advice has not been tried and tested, may be contradictory, and once enacted may either produce a safe intervention or an adverse event (V. Bell, 2007; Eysenbach, Powell, Kuss, & Sa, 2002). The provision of consensus-based guidelines, however, might provide members of the community with an effective and reliable source of information about how to assist a loved-one.

Guidelines are a series of systematically developed statements that suggest a course of action, based on an expert analysis of the current available evidence (M. J. Field & Lohr, 1990; Goldman & Hayley, 2003). Since the 1990s, guidelines have been increasingly used in healthcare settings, to improve the ability of clinicians to make effective decisions about the care of their patients, in situations where there is more than one possible course of action, and a range of possible outcomes (Lohr, Eleazer, & Mauskopf, 1998). Typically, guidelines are developed from systematic reviews of efficacy and effectiveness research, as well as from expert consensus in relevant clinical fields (National Health and Medical Research Council, 2010; National Health Service Evidence, 2010; National Institute for Health and Clinical Excellence, 2009). They
represent a useful, reliable and fast tool for informed decision making and are considered instrumental in evidence-based medicine; the practice of providing medical treatments according to the best available information about effective patient care (Lohr, et al., 1998). Evidence-based medicine is now widely practiced in health services throughout the world. The widespread implementation was borne out of economic and clinical analyses, which established that when medical practice is based on tested research findings, the financial cost, associated risk to the patient, and their probable health outcome, are more quantifiable and predictable, than when practice is based on expert opinion or value-based judgements alone (Handley & Stuart, 1994).

While not clinical practice, mental health first aid strategies can also be subject to the same principle; if first aid practice is based on the best available evidence, the outcome of that practice is likely to be more predictable and the risk of adverse events likely to be reduced. Although there has not yet been any systematic comparison of mental health first aid evidence-based practice with mental health first aid value-based practice, some research in the domain of physical first aid, suggests the development of guidelines can be a useful tool for improving training and practice.

Guidelines on emergency cardio-pulmonary resuscitation (CPR), for example, have been developed and implemented, with different sets of guidelines created for trained hospital staff and for the general public (Wassertheil, 2006). In 2001 it was internationally recognised that there was a need for standardised and evidence-based teaching of basic life support practices, such as CPR, to improve the outcome for the critically injured, such as those experiencing cardiac arrest (Chamberlain & Hazinski, 2003; O. Meyer, 2004). Just as many other countries had done, Australia implemented national guidelines on how to provide CPR in 2006 (Wassertheil, 2006), which are now
widely taught in community first aid training courses, conducted by a range of organisations, such as the Red Cross (Red Cross Australia, 2011) and St John Ambulance (St. John Ambulance Australia, 2010). The effect of guideline development and implementation has been the standardisation of information taught to course participants, and the improvement in outcomes for the critically injured (Hazinski, et al., 2005). That physical first aid guidelines have been successfully developed and implemented in a community setting suggests that it is an approach to improving first aid practice, which might be usefully applied to mental health first aid. The development of such guidelines would be useful both as a direct source of advice to members of the public, and as principles informing the content of training courses designed to teach community members how to enact mental health first aid strategies (Kelly, et al., 2008b).

The aim of the current study was to explore what mental health first aid strategies are currently used or encouraged for assisting people with eating disorders and which of these are considered by experts in the field to be the best practice strategies for assisting someone who is developing or experiencing an eating disorder. This involved the Delphi consensus method, a mixed qualitative and quantitative research framework for gathering expert opinion. Clinicians involved in eating disorder treatment or research were approached to be involved as experts, as well as carers and consumers who were proactive in raising awareness about eating disorders through authoring books, blogs or websites, mentoring, support or advocacy groups, education, training or treatment, research or policy development. The inclusion of carers and consumers was seen as particularly important to the acceptability and validity of guidelines for mental health
first aid because carers are the individuals most likely to provide it and consumers the individuals who will receive it.

**Method**

**The Delphi Method**

Originally developed for technological forecasting, the Delphi technique is a multi-staged approach to building expert consensus, which has been used extensively within the last decade in health and social research to enhance decision-making processes (Hasson, Keeney, & McKenna, 2000). The Delphi method involves a number of groups of experts making private, independent ratings of agreement on a series of action statements (for a review of the key features see McKenna, 1994). Once ratings are received and collated, a summary is fed back to participants, who then complete a second round of rating. They can choose whether to change or maintain their original ratings. Several rounds may be required, depending on the desired level of consensus. The output from the process is statements about which there is substantial consensus in ratings.

As a consensus-based technique, the Delphi method is often used in scenarios that cannot be feasibly or ethically subject to a randomised controlled trial (e.g. Biondo, Nekolaichuk, Stiles, Fainsinger, & Hagen, 2008). Other reasons for using the Delphi in research include: investigating a population with diverse experience or expertise, requirement of a large sample making face-to-face meeting ineffective, or time, cost and
logistics constraints that make bringing experts together unfeasible (Linstone & Turoff, 1975; McKenna, 1994).

As it is unethical to randomise participants to either receiving mental health first aid or not (control condition), and unfeasible to independently examine the effects of a very large number of possible first aid strategies, the development of mental health first aid guidelines must employ consensus-based rather than an empirical trial techniques. Furthermore, because the current research involved large panels of experts (clinicians, consumers and carers) from across the globe, the Delphi method was considered the most feasible method for developing consensus.

Participants

Experts were recruited via an emailed invitation to participate accompanied by an information sheet about the study. Potential expert clinicians were identified through their association with professional organisations such as the Academy of Eating Disorders or through their authoring of relevant scientific or clinical resources. Only those clinicians who were considered as specialised in the area of eating disorders, or leaders in the field of research or training, were invited to participate. Specialisation was defined as membership to a special interest professional organisation (e.g., Australian New Zealand Academy of Eating Disorders) or having eating disorder clients or research constitute the majority of workload.

Potential expert consumers and carers were identified through an established public profile. Public participation in awareness-raising was an inclusion criterion that was designed to ensure that participants could respond as experts, with exposure to a range of experiences within the eating disorders realm, rather than responding based solely on their own individual experience, which may vary significantly from individual
to individual. It also ensured that participants were comfortable reflecting on their experiences, which was particularly important for those who participated on the consumer panel; consumers were also required to consider themselves as recovered and not currently seeking treatment.

Panel members were recruited from Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States. A total of 85 participants responded to the first round. While there is no perfect sample size for conducting a Delphi study, the current research aimed to recruit 30 experts for each panel, in order to balance issues encountered with a large sample size (60 per panel), where consensus is difficult to reach, with that of a small sample (of 15 or less), where views of particular individuals can strongly influence study results (Hasson, et al., 2000; Keeney, Hasson, & McKenna, 2006).

Informed consent was implied by responding to the online questionnaire. The research was granted human research ethics committee approval by the University of Melbourne.

**Instruments**

A systematic literature review was conducted of websites, books, carer and consumer manuals, and of academic journals, for statements about how to help someone who was thought to be developing or experiencing an eating disorder. This involved entering key search terms (eating disorders, anorexia, bulimia, helping, help, intervention, self-help, carer) into three search engines (Google.com, Google.co.uk and Google.com.au). The first 50 sites for each set of search terms were examined. Any links appearing on these websites, which were thought to contain useful information, were followed. Relevant journal articles were located by searching a number of
academic databases (CSA PsycINFO, PubMed and Google Scholar). Key print texts were identified through local library searches, recommendations from relevant mental health web sites, and Amazon.com.

Development of the first round questionnaire involved dividing the information gleaned from the systematic literature search into sections based on common themes and then developing statements that described first aid strategies. This process involved consultation with a working group, which had previous experience in Delphi research (Kelly, Jorm, et al., 2010; Kelly, et al., 2008a, 2008b; Langlands, et al., 2008a, 2008b). The working group attempted to remain as faithful as possible to the original wording of the information, but modified the text where necessary, to ensure comprehensibility and consistency of format across statements, and to reduce duplication. For example, on the website www.mirror-mirror.org the advice appeared: Before you approach someone you suspect has an eating disorder, I would highly recommend that you educate yourself. This was combined with similar advice from a number of other sources, to make the statement Before doing anything else, the first aider should... learn as much as they can about EDs by reading books, articles and brochures, or gathering information from a reliable source, such as an ED support organisation or a health professional experienced in treating EDs. This statement was contrasted with Before doing anything else, the first aider should... talk to the person immediately and ask direct questions about their eating habits, which was based on the advice The first thing to do is to talk privately with the person about the things you have noticed from a factsheet called “Teen Health: I think my friend may have an eating disorder. What should I do?” available on the website www.kidshealth.org. A list of all statements presented to participants in the questionnaires are shown in Appendixes A and B.
Procedure and statistical analyses

The questionnaires were distributed to participants via an electronic link to an online survey software system (surveymonkey.com) sent via email. Panel members were asked to rate how important each first aid strategy was to the development of a set of guidelines on providing mental health first aid for eating disorders. This involved a five point Likert scale, which included the options: ‘Essential’, ‘Important’, ‘Don’t Know/Depends’, ‘Unimportant’, ‘Should not be included’.

Once all participants had lodged their answers, statements were placed into one of three categories, following the procedure used in previous studies (Kelly, Jorm, et al., 2010; Kelly, et al., 2008a, 2008b; Langlands, et al., 2008a, 2008b):

1. Endorsed: if between 80% and 100% of each of the three panels rated a statement as either ‘Essential’ or ‘Important’, the statement was endorsed as a guideline.

2. Re-rate: there were two scenarios that would categorise a statement for re-rating in a second round survey:
   a. If between 70% and 79% of two or more panels rated a statement as either ‘Essential’ or ‘Important’;
   b. If between 80% and 100% of any one panel rated a statement as either ‘Essential’ or ‘Important’;

3. Rejected: if none of the above conditions were met.

In Round 1, panel members were invited to suggest any new first aid strategies that had not yet been covered by the content of the questionnaire. Submitted comments
were drafted into statements and then presented to the working group, who tried to ensured comprehensibility and consistency. Any strategy that was judged by to be an original idea was included as a new item in the second round questionnaire. Panel members were also encouraged to provide feedback on any ambiguity in the statements already presented. In particular, feedback after the first round indicated that many statements were being given a ‘Don’t Know / Depends’ rating because their utility varied depending on the age of the person receiving the first aid. For example, the statement *To respect the person's privacy, the first aider should not talk to someone close to the person about their disordered eating behaviours* received many comments (e.g. *This depends on the age of the person. If they are a child the carer should be informed*). In order to overcome this difficulty, the statements which attracted the most comments from the panel were qualified in the second round by allowing participants to rate the statement in three scenarios: when assisting an adult, an adolescent, or a child.

At the end of each round, panel members were sent a report outlining the results of the questionnaire. The statements to be re-rated were displayed with the group percentages for each possible rating on the scale, and also with the panel member’s individual rating, so that panel members could compare their response to that of the group. Presentation of the report in this way allowed the panel members to decide whether to maintain or modify their ratings in the next round.

The same criteria for endorsing, excluding and re-rating statements were applied to the data collected in Round 2, with one exception. If a statement was re-rated in the second round and again failed to achieve a consensus of between 80 and 100% across all three panels, it was then excluded. Only those statements that had been entered as
new items in Round 2, and afterward fell into the re-rate category, were entered into the third round questionnaire.

All endorsed statements were written into a guideline document. This process involved grouping statements based on common themes, then writing sections into prose. Once the guideline document had been drafted, consultation was again sought from the working group, who endeavoured to retain, as closely as possible, the wording of the original items. A copy of the final draft was sent to each panel member for endorsement. Upon final endorsement by the expert panel, the guideline was made available for free download in PDF format via the MHFA website.

### Results

Thirty-six clinicians (29 female, 7 male, range = 25-64 years), 27 carers (24 female, 3 male, range = 30-70 years), and 22 consumers (22 female, 0 male, range = 18-70 years) participated in the first round. The retention rate after each round was good (77% in Round 2, 75% in Round 3), which ensured that the consensus reached in subsequent rounds was not biased by panel attrition (Hasson, et al., 2000). Participant flow through the three Delphi rounds is shown in Figure 1.

The systematic literature search revealed that there were numerous relevant publications in the public domain, such as fact sheets and booklets on how to assist a loved one with an eating disorder. The major sources of first aid advice were publications by eating disorder organisations, such as Anorexia Nervosa and Related Disorders Inc. (ANRED, USA), b_eat (UK), Eating Disorders Foundation of Victoria (Aus), Eating Disorders Association Queensland (Aus),
and National Eating Disorder Association (NEDA, USA).

In contrast, the scientific literature contained a dearth of information on the subject of first aid, even when searched under the broader headings of help, intervention or carer. One notable exception was a study by Smalec and Klingle (Smalec & Klingle, 2000) who investigated the efficacy of interpersonal messages on persuading women with bulimia to seek help. This study, however, assessed the effect of written messages on the help-seeking intentions of women already in treatment, rather than a systematic analysis of the effect of verbal messages on actual help-seeking, and therefore was limited in its utility.
From the systematic literature search, 326 statements across 13 categories were presented to the panel members for rating in Round 1. Comments from the panel members contributed to a further 130 statements being included in Round 2. The number of statements presented in each category of the questionnaires, is shown in Table 6. The number of endorsed, re-rated and rejected statements, after each round, is shown in Table 7.

Table 6

The number of statements shown in each of the 13 questionnaire categories, across each round.

<table>
<thead>
<tr>
<th>Questionnaire Categories</th>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>8</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Understanding and awareness</td>
<td>39</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>What do you do if you suspect an ED?</td>
<td>14</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Approaching the person</td>
<td>20</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>How to communicate your concerns to the person</td>
<td>54</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>The person’s reaction</td>
<td>26</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Seeking professional help</td>
<td>21</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>What if the person refuses help</td>
<td>25</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>How to be supportive until the person seeks help</td>
<td>45</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>When the first aider is a parent of a child/adolescent with an ED</td>
<td>31</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>When the first aider is a young person helping a friend with a suspected ED</td>
<td>10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>What is a medical emergency</td>
<td>25</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>During an emergency</td>
<td>8</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 7

*Number of first aid action statements that were endorsed, re-rated or rejected in each of the three Delphi rounds.*

<table>
<thead>
<tr>
<th>Round</th>
<th>New statements</th>
<th>Statements being re-rated</th>
<th>Total number of statements</th>
<th>Statements Endorsed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 1</td>
<td>326</td>
<td>0</td>
<td>326</td>
<td>139</td>
</tr>
<tr>
<td>Round 2</td>
<td>130</td>
<td>64</td>
<td>194</td>
<td>60</td>
</tr>
<tr>
<td>Round 3</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>456</td>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Total endorsed statements</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total rejected statements</td>
<td>256</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Endorsed Items*

From a total of 456 statements, 200 were endorsed. A list of each of the endorsed statements, by category, and their percentage rating from each panel is provided in Appendix A. These items were drafted into the final guideline document titled *Eating Disorders: First aid guidelines*, which is provided in Appendix B.

In Round 1 the category entitled *What is a medical emergency?* was designed to have panel members agree upon the circumstances in which a the person providing first aid should seek emergency medical assistance for someone with an eating disorder. Because the statements in this section required some knowledge of emergency medicine, only those panel members who had some form of medical training were
requested to rate these statements. Of the 15 panel members who were qualified, there
was 1 psychiatrist, 3 physicians, 4 GPs and 7 nurses. Of 25 possible statements, 16 were
endorsed (see Table A.11, Appendix A).

Rejected Items

Some statements were strongly rejected by the panels, with a high percentage of
participants rating a statement as either ‘Unimportant’ or ‘Should not be included’. Other statements were rejected because there was disagreement across panels. For instance, some statements failed to be endorsed, even though at least one group had a high percentage of members rating it as either ‘Essential’ or ‘Important’, because at least one other panel, even after a second round of rating, failed to achieve at least 80% consensus. Because disagreements across the different panels provide an opportunity to assess some of the priorities the different experts gave to different first aid strategies, those with substantial disagreement were analysed for thematic content. Panels were considered to have substantial disagreement (large effect size) if the difference in endorsement between the panels was ≥30% (see Table 8) (Rosenthal, 1996). All other rejected items can be found in Appendix C.
Table 8

*Statements rejected due to strong disagreement between panels.*

<table>
<thead>
<tr>
<th>Statements with strong disagreement</th>
<th>% Consumers (1)</th>
<th>% Carers (2)</th>
<th>% Clinicians (3)</th>
<th>Difference b/w 1 &amp; 2</th>
<th>Difference b/w 1 &amp; 3</th>
<th>Difference b/w 2 &amp; 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>When seeking information about EDs from a health professional, the first aider should maintain the confidentiality of the person by not disclosing information that may identify the person.</td>
<td>77.27</td>
<td>39.29</td>
<td>63.89</td>
<td>37.99</td>
<td>13.38</td>
<td>-24.60</td>
</tr>
<tr>
<td>The first aider should reassure the person that they are likely to benefit from discussing their problems with the first aider.</td>
<td>72.73</td>
<td>39.29</td>
<td>58.33</td>
<td>33.44</td>
<td>14.39</td>
<td>-19.05</td>
</tr>
<tr>
<td>To respect the person’s privacy, the first aider should not disclose information about them without their consent, except in the case of an emergency.</td>
<td>63.64</td>
<td>25.00</td>
<td>50.00</td>
<td>38.64</td>
<td>13.64</td>
<td>-25.00</td>
</tr>
<tr>
<td>The first aider should respect the person’s privacy and not spy on the person or go looking for clues to the person’s disordered eating behaviours.</td>
<td>54.55</td>
<td>14.29</td>
<td>55.56</td>
<td>40.26</td>
<td>-1.01</td>
<td>-41.27</td>
</tr>
<tr>
<td>The first aider should encourage the person to use evidence-based, reputable self-help programs such as those found in books or available on the internet.</td>
<td>47.62</td>
<td>25.00</td>
<td>55.56</td>
<td>22.62</td>
<td>-7.94</td>
<td>-30.56</td>
</tr>
<tr>
<td>The parent should be aware that there may be times when withdrawal of privileges may be helpful as a means of showing the child that the parent is serious about their concerns.</td>
<td>33.33</td>
<td>64.29</td>
<td>52.78</td>
<td>-30.95</td>
<td>-19.44</td>
<td>11.51</td>
</tr>
<tr>
<td>Even if the child wants to, the parent should not let the child take responsibility for seeking professional help.</td>
<td>33.33</td>
<td>64.29</td>
<td>41.67</td>
<td>-30.95</td>
<td>-8.33</td>
<td>22.62</td>
</tr>
<tr>
<td>If the person is underweight, the first aider should take on the responsibility of getting the person professional help.</td>
<td>31.82</td>
<td>50.00</td>
<td>11.11</td>
<td>-18.18</td>
<td>20.71</td>
<td>38.89</td>
</tr>
</tbody>
</table>
## Statements with strong disagreement continued...

<table>
<thead>
<tr>
<th>Statement</th>
<th>% Consumers (1)</th>
<th>% Carers (2)</th>
<th>% Clinicians (3)</th>
<th>Difference b/w 1 &amp; 2</th>
<th>Difference b/w 1 &amp; 3</th>
<th>Difference b/w 2 &amp; 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>The parent should closely monitor the child’s eating and exercise habits, even if it means intruding on the child’s privacy.</td>
<td>23.81</td>
<td>57.14</td>
<td>47.22</td>
<td>-33.33</td>
<td>-23.41</td>
<td>9.92</td>
</tr>
<tr>
<td>Before doing anything else, the first aider should... Talk to the person immediately and ask direct questions about their eating habits.</td>
<td>22.73</td>
<td>35.71</td>
<td>58.33</td>
<td>-12.99</td>
<td>-35.61</td>
<td>-22.62</td>
</tr>
<tr>
<td>*The first aider should continue with whatever activities they would normally engage in with the person.</td>
<td>92.86</td>
<td>62.50</td>
<td>78.57</td>
<td>30.36</td>
<td>14.29</td>
<td>-16.07</td>
</tr>
<tr>
<td>*If the person is an ADULT the first aider should respect the person’s right to privacy and confidentiality when it comes to their eating and weight-loss behaviours, except where the person is placing their health at risk.</td>
<td>85.71</td>
<td>45.83</td>
<td>67.86</td>
<td>39.88</td>
<td>17.86</td>
<td>-22.02</td>
</tr>
<tr>
<td>*If the person is an ADOLESCENT the first aider should respect the person’s right to privacy and confidentiality when it comes to their eating and weight-loss behaviours, except where the person is placing their health at risk.</td>
<td>78.57</td>
<td>41.67</td>
<td>64.29</td>
<td>36.90</td>
<td>14.29</td>
<td>-22.62</td>
</tr>
<tr>
<td>*The first aider should try to demonstrate that they care about the person, for example by offering encouraging words or a hug.</td>
<td>78.57</td>
<td>91.67</td>
<td>53.57</td>
<td>-13.10</td>
<td>25.00</td>
<td>38.10</td>
</tr>
<tr>
<td>*The first aider should be aware of the different types of effective therapies or treatment approaches that may be available to the person.</td>
<td>78.57</td>
<td>87.50</td>
<td>53.57</td>
<td>-8.93</td>
<td>25.00</td>
<td>33.93</td>
</tr>
<tr>
<td>*The first aider should know the difference between the symptoms of anorexia, bulimia and binge eating disorders.</td>
<td>78.57</td>
<td>87.50</td>
<td>50.00</td>
<td>-8.93</td>
<td>28.57</td>
<td>37.50</td>
</tr>
<tr>
<td>*If the person is an ADULT the first aider should respect their right to privacy and confidentiality when it comes to their eating and weight-loss behaviours, except where the person is placing their life at risk.</td>
<td>78.57</td>
<td>41.67</td>
<td>64.29</td>
<td>36.90</td>
<td>14.29</td>
<td>-22.62</td>
</tr>
</tbody>
</table>
**Statements with strong disagreement continued...**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Consumers</th>
<th>Carers</th>
<th>Clinicians</th>
<th>Difference b/w 1 &amp; 2</th>
<th>Difference b/w 1 &amp; 3</th>
<th>Difference b/w 2 &amp; 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>The first aider should know that binge eating has two components; the amount of food eaten is large, and there is a sense of loss of control at the time.</em></td>
<td>71.43</td>
<td>95.83</td>
<td>53.57</td>
<td>-24.40</td>
<td>17.86</td>
<td>42.26</td>
</tr>
<tr>
<td><em>The first aider should be aware that if the person is engaging in binge eating without any consequent weight-loss strategies, the person may have binge eating disorder.</em></td>
<td>64.29</td>
<td>87.50</td>
<td>53.57</td>
<td>-23.21</td>
<td>10.71</td>
<td>33.93</td>
</tr>
<tr>
<td><em>If the first aider suspects that an ADOLESCENT is developing or experiencing an ED, the first aider should approach the person’s parents before approaching the person about their eating.</em></td>
<td>64.29</td>
<td>58.33</td>
<td>28.57</td>
<td>5.95</td>
<td>35.71</td>
<td>29.76</td>
</tr>
<tr>
<td><em>If the first aider suspects that the person has an ED it is important that they do something about it.</em></td>
<td>57.14</td>
<td>91.67</td>
<td>82.14</td>
<td>-34.52</td>
<td>-25.00</td>
<td>9.52</td>
</tr>
<tr>
<td><em>If the first aider suspects that an ADOLESCENT is developing or experiencing an ED, the first aider should approach a family member or loved one of the person, before approaching the person about their eating.</em></td>
<td>57.14</td>
<td>66.67</td>
<td>35.71</td>
<td>-9.52</td>
<td>21.43</td>
<td>30.95</td>
</tr>
<tr>
<td><em>If the first aider is concerned that the person’s ED is severe, and the first aider has tried to talk to them about treatment without success, the first aider should enlist the support of other loved ones.</em></td>
<td>50.00</td>
<td>83.33</td>
<td>71.43</td>
<td>-33.33</td>
<td>-21.43</td>
<td>11.90</td>
</tr>
<tr>
<td><em>If the first aider is having trouble finding a time when the person is not angry, emotional or frustrated, it is best that the first aider approach the person as soon as possible.</em></td>
<td>35.71</td>
<td>70.83</td>
<td>64.29</td>
<td>-35.12</td>
<td>-28.57</td>
<td>6.55</td>
</tr>
<tr>
<td><em>The first aider should encourage the person to get their family involved in helping them find appropriate professional help.</em></td>
<td>28.57</td>
<td>79.17</td>
<td>42.86</td>
<td>-50.60</td>
<td>-14.29</td>
<td>36.31</td>
</tr>
<tr>
<td>Statements with strong disagreement continued...</td>
<td>% Consumers</td>
<td>% Carers</td>
<td>% Clinicians</td>
<td>Difference b/w 1 &amp; 2</td>
<td>Difference b/w 1 &amp; 3</td>
<td>Difference b/w 2 &amp; 3</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>----------------------</td>
<td>----------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>#Social and behavioural warning signs - Changes in clothing style (e.g. wearing baggy clothes to disguise the figure).</td>
<td>83.33</td>
<td>62.96</td>
<td>50.00</td>
<td>20.37</td>
<td>33.33</td>
<td>12.96</td>
</tr>
<tr>
<td>#If the young person is worried about the friend, the young person should seek support or advice from a professional or organisation that specialises in EDs.</td>
<td>54.17</td>
<td>77.78</td>
<td>85.71</td>
<td>-23.61</td>
<td>-31.55</td>
<td>-7.94</td>
</tr>
</tbody>
</table>

Panels were considered to have substantial disagreement (large effect size) if the difference in endorsement between the panels was ≥30%
* Results shown are re-ratings occurring in Round 2
# Results shown are re-ratings occurring in Round 3
Discussion

The current study used the Delphi method to develop guidelines for eating disorder mental health first aid. The systematic literature search revealed that there were numerous relevant publications. In addition to the factsheets and pamphlets, books written by clinical experts, for carers of loved-ones with eating disorders, were also a valuable source of information (e.g. Costin, 1999; Heaton, Heaton, & Strauss, 2005; Kolodny, 2004; M. Siegel, Brisman, & Weinshel, 1997). However, the majority of the resources available in the public domain did not cite the source of the information presented and were most likely constructed using personal opinion. The publications that did acknowledge references appeared to be based on a mixture of opinion and literature reviews, which often included outdated clinical sources. Books written by clinical experts also presented information based on a mix of opinion and literature; the majority quoted clinical experience and case studies from former patients, yet had no systematic analysis of the effect, positive or otherwise, their advice would have on a person with an eating disorder or those trying to assist them. Given that most of the literature appears to be value-based rather than evidence-based, this finding reiterates the importance of establishing consensus on the best available mental health first aid strategies for assisting someone with an eating disorder.

Indeed, this research is the first systematic, consensus-based investigation of how a member of the public can best provide assistance to someone experiencing or developing an eating disorder. By including panel members with a range of expertise, this research was able to develop a set of guidelines that include content on a range of issues that may arise while providing assistance to someone with an eating disorder. One of the strengths of the Delphi method is the provision, in the first round
questionnaire, for participant comments. Encouraging panel members to provide the researchers with their ideas not only allowed for the refinement of ambiguous, insensitive or contentious statements, it also ensured that the experience of eating disorder experts was mined for pertinent issues that had not been covered by the initial literature search. In particular, comments about age appropriateness provided by the panel after Round 1, led to a number of statements being re-rated according to the age of the first aid recipient. This qualification resulted in a further two statements being endorsed and, importantly, the exclusion of some first aid strategies that may have been age-inappropriate for children or adolescents, such as maintaining a respect for privacy above the need for health care.

Although the experts were able to reach consensus on a wide range of issues, there were also important points of disagreement between the panels. Statements that were rejected due to strong disagreement revealed differences in the beliefs consumers, carers and clinicians had about the first aid process. These statements appeared to cluster around three themes. The first theme involved the conditions in which it is acceptable for a first aider to break confidentiality and start talking to others about the person’s problem. This theme appeared to represent a tension between the rights of the person with the eating disorder to privacy, and the rights of the first aider to seek help on behalf of the person. For instance, the Round 2 statement If the person is an adult the first aider should respect the person’s right to privacy and confidentiality when it comes to their eating and weight-loss behaviours, except where the person is placing their health at risk received a relatively high level of endorsement from consumers and clinicians, yet a relatively low level of endorsement from the carer panel. This may indicate a desire among the carers to discuss their loved one’s problem in specific detail
before health is placed at risk, while clinicians and consumers are perhaps more desirous of upholding privacy until risk has become apparent.

The second theme involved statements about active intervention by the first aider. This theme appeared to represent a tension between the carers and clinicians, who preferred early action from the first aider, and the consumers, who preferred for the first aider to remain more distant. For instance, clinician and carer panels endorsed the item *If the first aider suspects that the person has an ED it is important that they do something about it* much more strongly than the consumer panel.

Finally, a small group of items appeared to represent the desire of carers to be involved in the first aid process. Items that were about the first aider enlisting the help of the person’s family were more highly endorsed by carers than by the consumer and clinician panels.

Statements that were rejected with a strong consensus by all three panels were also revealing. These focused on the first aider trying to change the person’s behaviour or attitude in some way (e.g. *The first aider should try to convince the person that they are not fat*) or first aid strategies that were inappropriate for children (e.g. *If the professional recommends hospitalisation the parent should agree, but only if the child agrees also*), which again reflected a concern of the experts that the guidelines should not advise the first aider to allow age-inappropriate autonomy.

**Limitations**

While this research gave equal weighting to the opinions of the three different panels, a limitation in the findings is that the sample size of the consumer panel in particular was small (*n* = 22 Round 1, *n* = 14 Round 2, *n* = 14 Round 3). It is therefore possible that some individuals on the consumer panel had a greater effect on the
exclusion of some items than on other panels. For instance, with a panel size of 14, 1 person constitutes 7% of the panel. This means that only 3 people need to rate a statement below the ‘Essential’ or ‘Important’ ratings and the statement will not meet the criteria for endorsement. By contrast, with a panel size of 27 (the clinician panel in Round 3), 6 or more people are needed to rate the item below the ‘Essential’ or ‘Important ratings’ before it will fail to meet the criteria for endorsement. While it is possible that the consensus process was disproportionately affected by the small sample size of the consumer panel, this effect can only exclude items from the guidelines, given the requirement for all three panels to reach 80% consensus. Requiring a high level of consensus across all panels ensured that if the rating of one panel was inflated by a few individuals, the other two panels was able to balance the effect of idiosyncratic views. The occurrence of this phenomenon in Delphi studies make a strong case for setting a high consensus level criterion, especially when working with smaller samples; other Delphi studies have required as little as 51% of panel member agreement (McKenna, 1994).

**Implications of this research**

Research investigating the efficacy of clinical practice guidelines has often suggested that guidelines have little implication for practice unless they are heavily publicised and their uptake monitored (Bloch, Saeed, Rivard, & Rausch, 2006; Kosecoff, et al., 1987). The economic cost of implementation has therefore also been cited as a negative implication of guideline research (Grimshaw, et al., 2004). While this phenomenon may be true of clinical practice guidelines there is some evidence to suggest that first aid guidelines are not subject to the same fate. For example, mental health first aid guidelines developed by previous Delphi studies have generated
significant international public interest on the internet. After being made available on
the world wide web for free download in 2007, via the MHFA website, the guidelines
on providing first aid for depression, for psychosis, for assisting a person who is
suicidal, and for assisting someone who is deliberately self-injuring, had each attracted
over 2,000 views by the end of 2008. Mental health promotion organisations, such as
Living is For Everyone, SANE and CAN(Mental Health), have also shown a keen
interest in the guidelines by supporting and publicising the documents on their websites.
It is therefore likely that many members of the public who require information on how
to help someone developing or experiencing an eating disorder will be made aware of
and have access to these guidelines on the internet, at no cost.

Furthermore, given that the guidelines on how to provide CPR first aid were
successfully implemented in community training programs, it appears that developing a
training course to teach community members mental health first aid for eating disorders,
would also be an effective implementation strategy for the guidelines developed by the
current study.

Importantly, while there is evidence to suggest that there are effective strategies
for implementing the mental health first aid for eating disorder guidelines, only further
evaluation of these interventions will be able to elucidate whether the guidelines are
ultimately effective in increasing mental health literacy and help-seeking for eating
disorders.
Conclusions

Although the current literature provides an array of information to community members seeking information on how to assist a loved one with an eating disorder, little of this content is evidence based. This research was able to use the Delphi method to establish expert consensus on the best first aid strategies for providing assistance, from which the guideline document *Eating Disorders: First aid guidelines*, was developed. The inclusion of experts from professional, carer and consumer backgrounds, was a particular strength of this study, as it ensured that the developed guidelines cover broad content pertinent providing mental health first aid specifically for eating disorders. Although clinical practice guidelines have been found to be difficult and costly to implement, providing these mental health first aid guidelines on the internet, and in community training courses, appear to be two interventions strategies that could effectively implement the guidelines and ultimately lead to increased mental health literacy and help-seeking for eating disorders.
Chapter 2.2: Guidelines on Mental Health First Aid for Eating Disorders: An online evaluation of usefulness and impact on first aid
**Background**

When the first MHFA training was run in 2001, there was very little information available in either the public or scientific domain, about how to assist someone with a mental illness to manage their symptoms or to seek treatment (Kitchener & Jorm, 2008). The course content at that time was based on informal consultation with experts, the scant relevant literature and the extensive personal and professional experience of the authors (Kelly, et al., 2008b; Kitchener & Jorm, 2002a).

In order to improve the content of the MHFA training course, a research program commenced in 2005, with the aim of developing an evidence base for mental health first aid strategies. Since then, a number of Delphi studies have been conducted and have established consensus on the best strategies for providing assistance in the instance of different developing mental illnesses and different mental health crises (see Chapter 1.5 for more detail). Although the guidelines were originally developed to provide evidence for which strategies should be taught in the training course, the publication of the guideline documents has generated substantial interest from the public, both in Australia and internationally. Since the MHFA program made the guideline documents available for free download, via its webpage (http://mhfa.com.au/Guidelines.shtml), in November 2007, they have attracted a large number of visits from web-users; between 01 January 2008 and 30 June 2010, 41,807 visits were recorded, an average of 45 visits per day.

The previously developed *Eating Disorders: First aid guidelines* document was made available on the MHFA website in March 2009 and in the 12-months proceeding, was downloaded 4,475 times. On average, this was a rate of 12 downloads per day, making it the most highly accessed guideline. In addition, a number of mental health
education and advocacy organisations have established links to the guidelines webpage, and the eating disorders guideline document, on their own websites.\(^8\)

Given the trend for internet users to access information about mental illness using the internet (Oh, Jorm, & Wright, 2009; Powell & Clarke, 2002), it is perhaps not surprising that the mental health first aid guidelines have become highly accessed by the public. However, the impact of this information on health behaviours, such as help-seeking, using evidence-based treatments, or providing first aid to someone with symptoms of mental illness, is not well understood. It is not clear, for instance, whether accessing mental health information via the internet leads to positive behaviour change (Reavley & Jorm, In press).

Although the rise of available mental health information on the internet has been followed by a rise in the evaluation of information and website quality, a recent review found that there has been very little evaluation of the impact these sites have on the knowledge or behaviours of web-users (Reavley & Jorm, In press). In fact, the review concluded that there is a distinct need for further research to identify consumers of mental health information on the internet and to explore how the various aspects of website quality can affect knowledge of evidence-based treatments and health behaviours such as help-seeking.

To date, the scant research that is available on the effects of providing mental health information on the internet has provided conflicting results. One randomised controlled trial provided an evidence-based information website about depression and its treatments to participants with elevated depression symptoms and compared their rates of help-seeking to the rates found in participants who completed one of two

control conditions; either viewing a cognitive-behavioural skills training website (CBT) or an attention control condition (Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006). It was found that, relative to the control conditions, the evidence-based depression website was associated with less help-seeking. However, other research has suggested that accessing information via the internet is associated with greater levels of help-seeking than accessing information through other sources, such as newspapers or television. For example, analysis of data from the Australian National Survey of Mental Health and Wellbeing showed that those who used the internet in the 12 months prior to survey were almost three times as likely to seek help from any mental health service, and from primary practice in particular, than people who had not used the internet in the same timeframe. Other information sources, such as non-fiction books, pamphlets, newspapers, television and radio, were less strongly associated with service use (Reavley, et al., In press). It therefore remains to be seen whether accessing mental health information using the internet can have a positive impact on health-related behaviours.

In light of increasing web-user interest in the eating disorders mental health first aid guidelines, and of the need to better understand the impact of providing mental health information on the internet, this study sought to evaluate the usefulness of the guidelines for web-users and any impact they may have on the provision of first aid. Specifically, the aims of this research were to explore who is accessing the guidelines provided on the internet, the reasons for accessing this information, whether it is useful to them, and whether this information had any impact on their provision of assistance to someone with an eating disorder.
Method

Participants and procedures

Two online questionnaires were used to evaluate the guideline documents. An invitation to participate in the research, displayed in a pop-up window containing an electronic survey link, was shown to all web users who downloaded any one of 10 mental health first aid guideline documents between 15th May 2009 and 10th March 2010 (9.8 months).

Seven hundred and eleven participants completed the first questionnaire. Of those, 362 (51%) participants reported downloading the eating disorders guideline document, making them among the most popular of the series. By comparison 434 (61%) participants reported downloading the depression guidelines, 358 (50%) the suicidal thoughts and behaviours guidelines, and 275 (39%) the panic attack guidelines. Participants could report downloading more than one document. The questionnaires were designed to collect data relating eating disorder guidelines and data relating to all the other guidelines as a set, separately. Data on the 9 other guidelines are reported elsewhere (Hart, Jorm, Paxton, & Cvetkovski, In submission).

Of the participants who downloaded the eating disorder guidelines, 185 consented to receive the second questionnaire (51.1%), of whom 96 completed it (26.5%). There were no exclusion criteria for participation in the first questionnaire. However, for the second, web-users who were under the age of 18 or had English as a second language, were excluded. These criteria were set in an attempt to control for participant language and comprehension level.
Informed consent was implied by responding to the online questionnaires. The research was granted human research ethics committee approval by the University of Melbourne.

**Instruments**

The questionnaires were administered electronically using an online survey software system (surveymonkey.com). The first questionnaire was designed to gather information describing the characteristics of web-users downloading the guidelines. It contained five demographic questions (age, gender, country of residence, first language, attendance at a mental health first aid training course) and three questions about the guideline documents (which documents were downloaded, how they were found, and the reason for participant interest). The final question asked participants if they would be interested in participating in a follow-up survey. Participants who agreed provided their email address.

An electronic link to the second questionnaire was then sent via email, 28 days after completion of the first. This delay was designed to allow participants sufficient time to read and use the information but not to be so long that participants failed to recall the information presented. Personalised email prompts were sent at one week intervals, for a maximum of three weeks, to remind participants to complete the questionnaire. Once completed, further prompts were cancelled.

The second questionnaire was designed to gather information about how useful the information in the guidelines had been to web users, and what impact the guidelines had on the provision of mental health first aid for eating disorders. The questionnaire contained the same five demographic questions, a question about which documents were downloaded, and two further sets of questions. The first set contained seven
questions about the usefulness of the guidelines. Six questions were forced choice and one allowed for an open-ended response. The second set contained eight questions about any first aid that had been provided; six were forced choice and two open-ended. The questionnaire finished by asking participants if they had used the guidelines to seek professional help or support for themselves, and whether they would like to make any concluding comments on the guidelines.

**Statistical analyses**

Chi-square tests of independence were conducted on categorical data and independent samples t-tests were conducted on continuous variables, to assess whether the sub-group of participants who responded to the second questionnaire were significantly different from those who only responded to the first. For the independent samples t-tests, a Levene's test for equality of variances was used and the t-statistic for equal variances not assumed is reported when variances were significantly different.

**Results**

**Characteristics of web-users**

The demographic characteristics of web-users who downloaded the eating disorder guidelines and responded in questionnaires 1 and 2, are shown in Table 9. Participants who completed the first questionnaire ranged in age from 14-77. There were 10 web-users who reported being younger than 18 years and were therefore not eligible to complete the second questionnaire. Participants who responded to both
questionnaires were significantly older ($M = 43.59$, $SD = 12.04$) than those who only responded to the first ($M = 38.54$, $SD = 12.67$); $t (169.56) = 3.48$, $p \leq .001$.

Participants who responded to both questionnaires were also more likely to have English as their first language, $\chi^2(1) = 7.23$, $p = .007$. There were 27 participants who responded to the first questionnaire and reported having English as a second language and were therefore not eligible to complete the second questionnaire.

That there were significant differences between the group of participants who completed only the first questionnaire, and those who completed both, is expected given that the age and language of participants were not restricted in the first questionnaire but were used as exclusion criteria for the second. There were, however, no significant differences across gender, $\chi^2(1) = 1.35$, $p = .24$, country of residence, $\chi^2(16) = 11.05$, $p = .81$, or attendance at a MHFA training course, $\chi^2(1) = 1.66$, $p = .20$, across the two subgroups of participants.

Table 9

**Participant characteristics across the two questionnaires.**

<table>
<thead>
<tr>
<th></th>
<th>Questionnaire 1 participants (n=362)</th>
<th></th>
<th>Questionnaire 2 participants (n=96)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Gender (female)</td>
<td>313</td>
<td>86.46</td>
<td>79</td>
<td>82.29</td>
</tr>
<tr>
<td>English first language</td>
<td>330</td>
<td>91.16</td>
<td>96</td>
<td>100.00</td>
</tr>
<tr>
<td>Attended MHFA course</td>
<td>94</td>
<td>25.97</td>
<td>29</td>
<td>30.21</td>
</tr>
<tr>
<td>Country of residence - Australia</td>
<td>238</td>
<td>65.75</td>
<td>71</td>
<td>73.96</td>
</tr>
<tr>
<td>Canada</td>
<td>15</td>
<td>4.14</td>
<td>5</td>
<td>5.21</td>
</tr>
<tr>
<td>New Zealand</td>
<td>11</td>
<td>3.04</td>
<td>4</td>
<td>4.17</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>24</td>
<td>6.63</td>
<td>7</td>
<td>7.29</td>
</tr>
<tr>
<td>United States</td>
<td>48</td>
<td>13.26</td>
<td>9</td>
<td>9.38</td>
</tr>
<tr>
<td>Other*</td>
<td>26</td>
<td>7.18</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*These included Austria, Belgium, Brazil, Bulgaria, China, Costa Rica, Germany, Hong Kong (China), Japan, Malaysia, Mauritius and Russia.
Results for two first questionnaire items *How did you find out about these guidelines?* and *Why were you interested in the guidelines?*, are shown in Table 10. A majority of web-users reported accessing the guidelines via a link from another website. Other common pathways included via the MHFA website, from a consumer, carer or advocacy organisation, using a search engine, or from a doctor or other health professional. A majority reported downloading the document because their job involved contact with people with mental illness. Having an interest in mental health first aid and being involved in education or treatment of mental illness were also commonly noted as reasons for accessing the material. Under one quarter of participants reported downloading the guidelines because someone they knew had, or might have, a mental health problem.
Table 10

Participant responses to Questionnaire 1 items regarding the guidelines (n = 96).

<table>
<thead>
<tr>
<th>Method of finding guideline</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A link from another website</td>
<td>112</td>
<td>30.94</td>
</tr>
<tr>
<td>From the Mental Health First Aid website</td>
<td>92</td>
<td>25.41</td>
</tr>
<tr>
<td>From a consumer/carer/advocacy organisation</td>
<td>50</td>
<td>13.81</td>
</tr>
<tr>
<td>Using a search engine</td>
<td>38</td>
<td>10.50</td>
</tr>
<tr>
<td>From a doctor or other health professional</td>
<td>34</td>
<td>9.39</td>
</tr>
<tr>
<td>Other</td>
<td>31</td>
<td>8.56</td>
</tr>
<tr>
<td>I participated in their development</td>
<td>16</td>
<td>4.42</td>
</tr>
<tr>
<td>From a friend/family member</td>
<td>14</td>
<td>3.87</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for interest in guideline*</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>My job involves contact with people who have mental health problems</td>
<td>178</td>
<td>49.60</td>
</tr>
<tr>
<td>I am interested in Mental Health First Aid</td>
<td>114</td>
<td>31.80</td>
</tr>
<tr>
<td>I am involved in education about mental health/illness</td>
<td>103</td>
<td>28.70</td>
</tr>
<tr>
<td>I am involved in treating people with a mental illness</td>
<td>92</td>
<td>25.60</td>
</tr>
<tr>
<td>Someone I know has/might have a mental health problem</td>
<td>75</td>
<td>20.90</td>
</tr>
<tr>
<td>I have/suspect I might have a mental health problem</td>
<td>58</td>
<td>16.20</td>
</tr>
<tr>
<td>I was just curious to see what's in them</td>
<td>55</td>
<td>15.30</td>
</tr>
<tr>
<td>I am involved in consumer/carer advocacy for mental illness</td>
<td>41</td>
<td>11.40</td>
</tr>
<tr>
<td>I am a Mental Health First Aid Instructor</td>
<td>35</td>
<td>9.70</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>5.80</td>
</tr>
<tr>
<td>I participated in their development</td>
<td>15</td>
<td>4.20</td>
</tr>
</tbody>
</table>

* Participants could select more than one option. Total of percentages therefore does not add up to 100

Usefulness of the guidelines

Participant responses to questions about what was done with the guidelines and how useful they were, are shown in Table 11. A large majority of participants reported that they had read all or most of the guidelines, had saved or kept them, or given them to someone else. Responses to other questions about usefulness were also generally
positive; a large majority reported finding the guidelines very useful, or useful, and reported being very likely, or likely, to use them in the future if they came across someone with a relevant mental health problem. A small percentage however, did report being very unlikely, or unlikely, to do so.

In addition to the questions about usefulness, 43 participants gave open-ended responses to the question *Would you like to comment on why you felt they were either useful or not useful?* Eleven participants reported that they did not learn much from the document because they already had established expertise; six of whom added that they felt the document would be useful for others without prior knowledge (e.g. *I already work within the eating disorders field so I am aware of a lot of what was discussed in the material. However, I do feel it would be valuable for people who have limited experience of an eating disorder*). Ten comments suggested that the guidelines contained information that was or would be useful in the workplace (e.g. *Great resource for my staff who work with young people*). Fourteen said the guidelines contained information that was practical or appropriate for their intended purpose (e.g. *I gained information about helpful techniques*), and four contained criticisms about specific content within the guidelines (e.g. *They did not include enough about the importance of nutritional rehabilitation*) or their generality (e.g. *I didn’t feel they were detailed enough for me to make a decision on whether to get help for my child and if so, where to go for help. They were a bit general*).
Table 11

Participant responses to Questionnaire 2 items regarding the usefulness of the guidelines (n = 96).

<table>
<thead>
<tr>
<th>Questions and possible responses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much did you read?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of it</td>
<td>47</td>
<td>48.96</td>
</tr>
<tr>
<td>Most of it</td>
<td>28</td>
<td>29.17</td>
</tr>
<tr>
<td>Some of it</td>
<td>20</td>
<td>20.83</td>
</tr>
<tr>
<td>None of it</td>
<td>1</td>
<td>1.04</td>
</tr>
<tr>
<td>What did you do with the document*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saved it or kept it</td>
<td>71</td>
<td>74.00</td>
</tr>
<tr>
<td>Forwarded or lent it to someone</td>
<td>23</td>
<td>24.00</td>
</tr>
<tr>
<td>Deleted it or threw it away</td>
<td>10</td>
<td>10.40</td>
</tr>
<tr>
<td>Don’t know</td>
<td>4</td>
<td>4.20</td>
</tr>
<tr>
<td>How much did you learn?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A great deal</td>
<td>13</td>
<td>13.54</td>
</tr>
<tr>
<td>A fair bit</td>
<td>51</td>
<td>53.13</td>
</tr>
<tr>
<td>Not very much</td>
<td>28</td>
<td>29.17</td>
</tr>
<tr>
<td>Almost nothing</td>
<td>4</td>
<td>4.17</td>
</tr>
<tr>
<td>Did they include the things you wanted to know?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24</td>
<td>25.00</td>
</tr>
<tr>
<td>Mostly</td>
<td>43</td>
<td>44.79</td>
</tr>
<tr>
<td>Partly</td>
<td>18</td>
<td>18.75</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>11.46</td>
</tr>
<tr>
<td>Did you find them useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, very useful</td>
<td>21</td>
<td>21.88</td>
</tr>
<tr>
<td>Yes, useful</td>
<td>58</td>
<td>60.42</td>
</tr>
<tr>
<td>Not sure</td>
<td>10</td>
<td>10.42</td>
</tr>
<tr>
<td>No, I didn’t use them</td>
<td>5</td>
<td>5.21</td>
</tr>
<tr>
<td>No, I tried to use them but</td>
<td>2</td>
<td>2.08</td>
</tr>
<tr>
<td>found them unhelpful</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How likely would you be to use them in the future?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very likely</td>
<td>32</td>
<td>33.33</td>
</tr>
<tr>
<td>Likely</td>
<td>39</td>
<td>40.63</td>
</tr>
<tr>
<td>Neither likely nor unlikely</td>
<td>18</td>
<td>18.75</td>
</tr>
<tr>
<td>Unlikely</td>
<td>6</td>
<td>6.25</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>1</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Modal responses are marked in bold
* Participants could select more than one option. Total of percentages therefore does not add up to 100
Impact on the provision of mental health first aid

In response to the question After reading the Eating Disorder guidelines document, did you try to assist someone you thought might be developing or experiencing an eating disorder?, 22 (23%) participants answered ‘yes’. One participant however, did not respond to the preceding questions, so their data was not included in further analyses. The remaining 74 participants who answered ‘no’ were skipped to the next section of the questionnaire and did not answer the questions pertaining to first aid.

Participant responses to the six questions about first aid are shown in Table 12. Although a majority reported using the information in the guidelines when assisting the person and feeling as though they had been successful in providing help, a majority reported not doing anything differently to before they read the guidelines and reported feeling like they were not sure whether the guidelines had contributed to their level of success.

Twelve participants provided comments on what had happened during their first aid intervention. Four comments reflected on the nature of eating disorders as slow to remit even once treatment is engaged (e.g. My daughter has been suffering from anorexia nervosa for two years and I am continuing to monitor her eating, although I am not very successful at present in getting her to make progress. I am changing the medical support team at the moment. I remember your document being helpful at the time). Two commented on difficulty accessing appropriate mental health services (e.g. The person could not find an accessible public eating disorder service to treat her - although she attends [a major hospital] for other specialist services, she does not
Table 12

Participant responses to items regarding guideline impact on first aid interventions provided by web-users (n = 21).

<table>
<thead>
<tr>
<th>Questions and possible responses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>When assisting the person, did you use the information in the guidelines?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>66.67</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>9.52</td>
</tr>
<tr>
<td>Not sure</td>
<td>5</td>
<td>23.81</td>
</tr>
<tr>
<td>How successful do you think you were in assisting the person?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very successful</td>
<td>1</td>
<td>4.76</td>
</tr>
<tr>
<td>Successful</td>
<td>10</td>
<td>47.62</td>
</tr>
<tr>
<td>Neither successful nor unsuccessful</td>
<td>9</td>
<td>42.86</td>
</tr>
<tr>
<td>Not successful</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Very unsuccessful</td>
<td>1</td>
<td>4.76</td>
</tr>
<tr>
<td>Do you think the information in the guidelines contributed to your level of success?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very much</td>
<td>3</td>
<td>14.29</td>
</tr>
<tr>
<td>A little bit</td>
<td>8</td>
<td>38.10</td>
</tr>
<tr>
<td>Not sure</td>
<td>8</td>
<td>38.10</td>
</tr>
<tr>
<td>Not really</td>
<td>2</td>
<td>9.52</td>
</tr>
<tr>
<td>Definitely not</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>When assisting the person, did you do anything differently from what you would have done before you read the guidelines?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4</td>
<td>19.05</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>47.62</td>
</tr>
<tr>
<td>Not sure</td>
<td>7</td>
<td>33.33</td>
</tr>
<tr>
<td>Did you suggest to the person that they seek professional mental health care?*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>71.43</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>The person was already receiving</td>
<td>8</td>
<td>38.10</td>
</tr>
<tr>
<td>Not sure</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>As a result, did the person seek mental health care from a professional?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>6</td>
<td>28.57</td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
<td>57.14</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>4.76</td>
</tr>
<tr>
<td>Not sure</td>
<td>2</td>
<td>9.52</td>
</tr>
</tbody>
</table>

Modal responses are marked in bold
* Participants could select more than one option. Total of percentages therefore does not add up to 100
belong in their catchment and would have to travel to [another service], which was impossible).

In response to the request If you answered ‘yes’ [to the question When assisting the person did you do anything differently from what you would have done before reading the guidelines] please provide a short description, four participants mentioned changing their behaviour to be more sensitive towards the person’s feelings (e.g. I listened more and accepted the person's version of reality even though I was uncomfortable with it).

All 96 participants were asked whether they had sought professional help or support for themselves after reading the guidelines; 11 (11.5%) responded ‘yes’, 77 (80.2%) responded ‘no’, and three (3.1%) indicated they were not sure. Five participants did not answer the question. Finally, 43 participants made open-ended responses to the question Do you have any further comments?, 27 of which were positive (e.g. They are great, easy to read, easily understood and have some practical ‘tips’ for me to use). A further three comments criticised the guidelines for not including information on how to assist a carer, specific statistics on eating disorders, or specific pathways to mental health care. Eight comments related to how useful the guidelines had been in the workplace (e.g. Very empowering. I work in a school counselling context and often executive staff in schools have wanted resources and guidance when I am unavailable).

Discussion

In response to public interest in the mental health first aid guidelines for eating disorders and the need to better evaluate the effect of providing mental health
information on the internet, this research sought to describe the characteristics of the web-users accessing the information, to evaluate how useful the guidelines were for web-users, and what impact the guidelines had on the provision of assistance to people developing or experiencing an eating disorder.

Responses to the online questionnaires revealed that web-users from a diverse range of backgrounds were downloading the guidelines, though the vast majority were women, and the most common reason for doing so was because of an occupation that involves contact with people individuals with eating disorders. This latter finding is particularly interesting, as the most common scenario for the provision of first aid, as envisaged by the guidelines development working group, was that of a family member, friend or carer trying to assist a loved one. Indeed the guidelines development research involved carers and consumers, in addition to clinicians, as these were the individuals considered to have the most expertise in the provision and receipt of mental health first aid. It appears, however, that professionals whose occupation involves contact with people with eating disorders, but whose qualifications do not provide information or training about mental illness, are accessing the guidelines for information about how to assist and respond in the workplace. This finding is consistent with previous evaluations of MHFA training, which have found that health professionals requiring knowledge about mental illness in their clients, make up a large proportion of trainees (Kitchener & Jorm, 2002b). This is also not an inappropriate use of the guidelines, as they were developed to be generally applicable across a broad range of situations, including in the workplace.

The results concerning the usefulness of the guidelines suggest that web-users largely pay careful attention to the information contained within them, and find them to
be useful or relevant for the future. However, when asked how much had been learned from the guidelines, a large proportion said not very much or almost nothing. While these results at first appear concerning, comments made by participants indicated that many participants already had established expertise in the area; as a professional or through caring for a person with an eating disorder for a number of years. A number also added that while they did not learn much because they already had a high level of knowledge, they felt that others without their level of expertise would find the guidelines informative.

Only a small number of participants reported having tried to assist someone with an eating disorder. Furthermore, a large proportion of these participants reported not using the guidelines while assisting the person, and a majority reported that they did not do anything differently to help the person as a result of reading the guidelines. These results suggest that only a small number of participants are showing behaviour change as a result of reading the information in the guidelines. While disappointing, this finding is consistent with the broader literature on guidelines, which shows that particularly with clinical practice guidelines for health professionals, implementation strategies can relatively easily make people aware of the guidelines’ existence and make them familiar with the specific recommendations within them, however achieving behaviour change in accordance with guidelines, is much more difficult (Cabana, et al., 1999; Grimshaw, et al., 2004).

Interestingly, responses to questions about how successful participants felt they were in assisting the person indicated that web-users were ambivalent about how successful their first aid was and what role the guidelines had played in it. This occurred despite a large majority of participants reporting that they suggested the person seek
professional mental health care, and as a result of their suggestion, the person had sought treatment. In line with the definition of mental health first aid (the assistance is given until appropriate professional help is received or the crisis resolves) these are very successful outcomes. Therefore, there appears to be a discrepancy between the way participants are defining success and the mental health first aid definition of success. Participant comments gave some insight into this phenomenon, as their responses about frustrations with treatments and eating disorders being of an enduring nature, seemed to indicate that participants were basing their feelings about success on whether the person they were assisting got into treatment and started to show some remission of symptoms. Future research would benefit from an analysis of how web-users are defining ‘success’ when it comes to assisting someone with an eating disorder.

Limitations

While this study had many strengths, including international dissemination of the guidelines and recruitment of participants, one significant limitation was the low participation rate in the second questionnaire. Although the chi-square analyses suggested that those who responded to the second were representative of those who responded to the first, there was no way of assessing the characteristics of web-users who did not respond to either questionnaire. It is possible that those who did not respond found no utility in the guidelines or experienced an adverse event as a result of implementing their recommendations. One could assume though, that experiencing an adverse event would motivate participation in this research to an equal degree, and therefore, of note is the absence of reports that indicate adverse events arose as a result of following the information in the guidelines.

Implications of this research
It is most likely that there are a number of reasons why the current research found limited evidence for web-users changing their first aid behaviours after reading the information in the eating disorders mental health first aid guidelines. One probable reason is that the intervention was too passive to produce behaviour change. Theories on behaviour change suggest that in order to modify complex behaviours, such as the provision of assistance to someone with a mental illness, participants require particular beliefs and attitudes about normative behavior, self-efficacy and the resulting outcome (Noar, et al., 2008; Noar & Zimmerman, 2005). Although participants in the current intervention demonstrated knowledge and motivation by seeking out the guidelines and downloading them, simply reading through the information in the guidelines may not have been sufficient to create an empathic attitude towards an individual with an eating disorder, or to construct a belief that they could effectively provide assistance. For this reason in particular, it is likely that using the guidelines to develop a training course, which would teach members of the public how to undertake appropriate first aid strategies, may be more effective than simply reading the document alone. Given that previous evaluations of MHFA training have found it to be effective in changing knowledge, attitudes and behaviours relating to first aid, the field of eating disorders would benefit from future research investigating the impact of a training course for eating disorder mental health first aid.

Although the finding that the guidelines led to only a small number of web-users showing behavior change could be interpreted as indicating limited impact, the current intervention of providing guidelines to an indefinite number of web-users at minimal cost entails such a simple and low-cost implementation strategy that at even a small effect still renders the intervention useful. Indeed, noteworthy are the findings that 11
participants had sought help for themselves after reading the guidelines and a further 12 individuals sought help after a suggestion from someone else who had read them. Whether the current findings are consistent with the impact had by other mental health information available on the internet, is yet to be seen. While there is a burgeoning literature evaluating the quality of mental health information on the internet, the current evaluation is one of the first to examine the impact of mental health information on behaviour (Reavley & Jorm, In press). Further research is therefore needed, in order to examine the role of health information provided on the internet in changing the behaviour of web-users.

Conclusions

The document Eating Disorders: First aid guidelines is accessed by diverse web-users, most commonly for use in a workplace setting. Web-users who access the guidelines pay careful attention to content and regard the information as helpful and relevant for the future. Although results revealed that the guidelines were associated with only a small number of web-users changing their first aid behaviours, the guidelines were found to play a role in help-seeking in a number of instances where first aid was provided to an individual suspected to be experiencing an eating disorder. Further research, including the evaluation of a more comprehensive intervention to teach community members about how to provide mental health first aid to someone with an eating disorder, is needed to properly elucidate the impact of the eating disorders mental health first aid guidelines on mental health literacy and help-seeking behaviours.
Chapter 2.3: Mental health first aid training for eating disorders: Development of an intervention and uncontrolled trial
Background

In 2003 an Australian national survey investigated the public’s knowledge of appropriate mental health first aid responses (Jorm, Blewitt, et al., 2005). This involved presenting participants with one of four different vignettes describing a person with either depression, depression with suicidality, early schizophrenia or chronic schizophrenia, and then asking participants if the person described was someone they knew and cared about, how they would help. The study found that while many individuals mentioned that they would talk to the person or suggest professional help, a large proportion did not mention even these basic strategies. Furthermore, in response to a vignette describing someone with suicidal thoughts, only 15% of participants indicated that they would assess the risk of harm. The public’s reluctance to ask a suicidal person about their level of risk, or the lack of knowledge in how to proceed with a risk assessment, lies in direct contrast to the empirical literature, which suggests that individuals who are suicidal should be questioned about the detail of any planned attempt to take their life (Hirschfeld & Russell, 1997; Kelly, et al., 2008b). Hence, poor knowledge of appropriate mental health first aid responses may not only lead to inadequate social support for those experiencing symptoms of mental illness, it may also lead to missed opportunities for suicide prevention.

Although there has been no formal investigation of the public’s knowledge of appropriate mental health first aid strategies for assisting someone with an eating disorder, it is known that there are important gaps in eating disorder mental health literacy. For example, accurate recognition and labeling of eating disorder symptoms remains low (Mond, Hay, Rodgers, & Owen, 2006b; Mond, Hay, et al., 2004b; Thompson, Yingling, Boardley, & Rocks, 2007). Research investigating labeling of
depression and psychosis has shown that poor labeling is associated with poor help-seeking and treatment preferences (Wright, Jorm, Harris, & McGorry, 2007), and this has been replicated in those with eating disorders (Mond, Hay, Rodgers, & Owen, 2006b). Furthermore, stigmatising attitudes towards individuals with eating disorders, such as the belief that the person is ‘weak’ not ‘sick’, are associated with lower levels of social support and higher levels of social distance and personal criticism, which are known to negatively influence mental health outcomes (Szmukler, Eisler, Russell, & Dare, 1985; van Furth, et al., 1996).

Improving the capacity of community members to respond appropriately when someone they know is developing or experiencing an eating disorder, therefore, has important implications for help-seeking, receipt of appropriate treatments and ultimately health outcomes. The social network of individuals with eating disorders is known to greatly influence the decision to seek treatment (Hepworth & Paxton, 2007) and provide support and motivation for recovery (Treasure, et al., 2008; Treasure, et al., 2007). Increasing their capacity to respond in a supportive manner, which optimises the chances appropriate and effective interventions will be engaged, is therefore essential, if the considerable burden posed by eating disorders on the community, is to be reduced.

Training in how to assist with mental health problems or mental health crises, as provided to community members by the MHFA program, has been extensively evaluated and found to be effective in increasing mental health literacy, knowledge of appropriate first aid strategies, confidence in providing help and the amount of assistance given to individuals with mental illness (see Chapter 1.5 for further detail). Qualitative studies have also shown that attending MHFA training is associated with greater levels of social support, empathic assistance and the likelihood of undertaking a
risk assessment (Jorm, Kitchener, et al., 2005; Minas, et al., 2009). However, none of these evaluations involved information about eating disorders. Furthermore, the previously developed *Eating Disorders: First aid guidelines*, which provide consensus-based strategies for assisting someone with an eating disorder, are yet to be incorporated in MHFA training, and as yet there has been no evaluation of how providing such training might influence mental health literacy, helping behaviours and help-seeking for eating disorders.

The aim of the current study was therefore to examine whether a training intervention on mental health first aid for eating disorders is effective in changing knowledge, attitudes and behaviours towards people with eating disorders. In particular, this research investigated whether mental health first aid training, based on the previously developed guidelines, was effective in increasing mental health literacy, decreasing stigmatising attitudes towards people with eating disorders, increasing the provision of first aid behaviours, promoting help-seeking behaviours in those who attend and promoting help-seeking behaviours among those who are recipients of first aid. This involved delivering a 4-hour, single session, mental health first aid training course to young adults, and university welfare staff, who were in contact with young people at risk of developing an eating disorder. To evaluate the training, a self-report questionnaire battery, designed to assess the effects of the training on knowledge, attitudes and behaviours, was administered at three time-points: baseline, post-training and six months follow-up. In addition, the evaluation also gathered information about first aid experiences, changes in mental health service use and the mental health status of participants.
It was expected that the instruments measuring changes in knowledge would show significant increases in: the average total score for scales measuring eating disorder knowledge, the accurate recognition of eating disorders and their symptoms, and the awareness of effective and appropriate interventions for treating or managing eating disorder symptoms. Instruments measuring changes in attitudes were expected to show a significant reduction in negative or stigmatising attitudes, and for beliefs about treatments to become more like those espoused in the consensus-based guidelines. Instruments measuring changes in intended or actual behaviours were expected to show a decrease in social distance, and an increase in contact with individuals with eating disorders, in the provision of assistance, and in the intention to provide help. Furthermore, the type of help provided was expected to change to become more supportive and to involve greater risk assessment. In addition to changing behaviours toward others, the training was also expected to be associated with an increase in seeking appropriate treatment for the self. All instruments were expected to show a significant change from baseline to post-training, but for scores at post-training to be maintained at follow-up. Finally, it was expected that the training would not be associated with any negative effects on the mental health of participants.

**Method**

**Participants**

The University of Melbourne is a large metropolitan university with an enrolled student population of approximately 35,900 and an academic staff of approximately
3,400 (The University of Melbourne, 2010). Approximately 28% of student enrolments are international students. The University has 12 affiliated residential halls and colleges, which accommodate between 50 and 326 students each. All undergraduate students residing at University of Melbourne colleges, and all staff employed in a student welfare role, were eligible to participate. Initially, heads or principals of colleges, or staff responsible for student welfare, were approached about the training program and an agreement was sought from each to support the program by allowing staff to attend during normal business hours, promoting the training on news bulletins or email circulation and by making student announcements during dinner time gatherings. Two colleges, which accommodate post-graduate students only, were not approached to participate. Agreements were reached with 9 colleges. The remaining college had already independently organised another MHFA training program to be presented to staff and students, so declined to participate.

Advertisements about the research included information about eating disorders and MHFA training (see Appendix D). Residents at participating colleges who were interested in the program were encouraged to contact either the researcher for a participant information statement, or an internal college representative who gathered information about potential participants and handed out information statements on behalf of the researcher. Informed consent was required, by selecting from ‘yes’ or ‘no’ buttons, at the beginning of each of the online questionnaires, before the participant could proceed. Approval for this research was granted by the University of Melbourne Human Research Ethics Committee. Student and staff training sessions were run separately, so that dependent relationships did not exist between participants.

**Design of the intervention**
The training intervention was a 4-hour, classroom-style, group education program. It was designed to be presented to groups of between 5 and 15 people and included didactic teaching using a PowerPoint presentation, small-group learning activities (in pairs or threes) and whole-group discussion components. A teaching manual was developed to guide the facilitation of each training session and to ensure fidelity (see Appendix E). Although designed to be presented by either a single or multiple instructors, the program was delivered by one primary instructor (who was also the researcher; LMH), with a second facilitator assisting with group activities and participant questions. Both were trained and accredited YMHFA Instructors.

The presentation of the program content, across four consecutive sections, is outlined in Table 13. Participants were presented with background information about mental illness and mental health first aid, background information about eating disorders, how to assist someone who may be developing or experiencing an eating disorder, and evaluation and concluding activities. The structure and content were developed based on the successful model devised by the MHFA program. The information presented on symptoms, possible causes, effective, evidence-based treatments and early intervention was gleaned from reviews of current, relevant, scientific literature. The information on warning signs and first aid strategies was based on the previously developed guidelines. The action plan used was that outlined by the MHFA Training and Research Program in the second edition Mental Health First Aid Manual (Kitchener, et al., 2010). Activities and teaching principles were informed by a theory of adult education known as andragogy (Knowles, 2005). This postulates that instruction of adults needs to focus on the process of teaching and learning as a problem solving activity rather than on familiarisation of content through rote learning. Hence,
this theory asserts that adult education should include experiential strategies such as case studies, role playing, simulations, and self-evaluation activities; and have instructors facilitate learning activities, rather than lecture information (Knowles, 1978).

An accompanying booklet, discussing and elaborating all the information shown on the Powerpoint slides and covered during learning activities, was also developed for use by participants (see Appendix F). The booklet was divided into three sections: introduction to mental health problems and mental health first aid, first aid for eating disorders, and first aid for suicidal thoughts and behaviours. The content on suicide was included due to the increased risk in those with eating disorders (see Chapter 1.1) (Sansone & Levitt, 2002; Sansone & Sansone, 2006). The structure of the booklet was designed to mirror the structure of the second edition Mental Health First Aid Manual (Kitchener, et al., 2010), which is divided into three parts according to different first aid strategies: introduction to mental health problems and mental health first aid, first aid for developing mental health problems, and first aid for mental health crises.

A working group consisting of experts in eating disorders or MHFA training assessed the training protocol and associated materials before a pilot session was conducted. The pilot session was completed with six participants, to allow appropriate modification of the protocol and its materials before use in the evaluation trial.9

9 Pilot session participants were five females and one male aged between 24 to 46 years ($M = 32.67$, $SD = 8.7$) who were staff employed by Orygen Youth Health Research Centre, University of Melbourne.
Table 13

**Structure and content of the training and evaluation program.**

<table>
<thead>
<tr>
<th>Section 1: Introduction</th>
<th>Section 2: Eating Disorders</th>
<th>Section 3: MHFA for eating disorders</th>
<th>Section 4: Evaluation activity and conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory activities</td>
<td>What are eating disorders?</td>
<td>First aid for crisis situations:</td>
<td>Post-training questionnaire</td>
</tr>
<tr>
<td>Common mental illnesses occurring in youth</td>
<td>Signs of a developing disorder</td>
<td>i. Medical emergencies</td>
<td>Question and answer time</td>
</tr>
<tr>
<td>Impact of mental illness</td>
<td>Importance of early intervention</td>
<td>ii. Suicidal thoughts and behaviours</td>
<td>Handing out of certificates and end matter</td>
</tr>
<tr>
<td>Youth mental health first aid</td>
<td>Risk factors for eating disorders</td>
<td>iii Non-suicidal self-injury</td>
<td></td>
</tr>
<tr>
<td>The MHFA action plan</td>
<td>MHFA for eating disorders – Action 1</td>
<td>MHFA for eating disorders – Actions 2-5</td>
<td></td>
</tr>
</tbody>
</table>

| 1 hour | 1 hour | 1.5 hours | 0.5 hours |

**Design of the evaluation**

The effectiveness of the training program in changing participant attitudes, knowledge and behaviour about eating disorders, was evaluated using an uncontrolled, repeated measures design, which involved the administration of a battery of self-report questionnaires at three time points: before the training course commenced (baseline), immediately after training concluded (post-training) and 6 months after the training program was completed (follow-up).

A desired sample size of $n = 85$ was calculated based on a power analysis which assumed that the training intervention would have a medium effect and made the conservative assumption that there was no correlation between baseline and post-training scores. With these assumptions, a sample of 64 participants would give 80%
power to detect a medium effect size \( (d = 0.5) \) from baseline to post-training with alpha = 0.05 \((\text{Sample Power 2.0})\). This power analysis was a considered balance between reducing probability of Type I and Type II error, allowing enough power to detect plausible effects, and selection of a suitable sample size, the recruitment and testing of which was achievable within the given timeframe. The required sample size of \( n = 64 \) was be increased to \( n = 84 \) to allow for 30% drop-out \((n = 20)\) between baseline and follow-up.

Young adults from university residential colleges were chosen for convenience sampling because they represent a group at very high risk of developing an eating disorder \((\text{Schwitzer, Bergholz, Dore, & Salimi, 1998; Striegel-Moore & Bulik, 2007})\), and a group who, given the nature of their residential environment, is likely to require skills in providing mental health first aid \((\text{Mond, Marks, et al., 2007; Prouty, et al., 2002})\). Furthermore, because young adults fall within the age range where risk of eating disorder onset is greatest \((\text{i.e. 16 to 20 years old Hudson, et al., 2007; Oakley Browne, Wells, Scott, et al., 2006; Wells, et al., 2006})\), the provision of assistance at this time was thought to present the greatest opportunity for early intervention. Welfare members of staff were also included in the sample, as they were able to provide support to students who received the training, and were likely, through their pastoral care role, to be in contact with any individuals receiving treatment for an eating disorder.

**Instruments**

The questionnaire battery is presented in Appendix G. It included a range of instruments designed to assess change in knowledge, attitudes and behaviours about eating disorders, as well as questions gathering information about the demographic
characteristics of participants. Table 14 shows how each instrument was implemented to measure knowledge, attitudes, behaviour or mental health status.

**Table 14**

*Instruments administered to measure knowledge, attitudes, behaviour and mental health status of participants.*

<table>
<thead>
<tr>
<th>Variable measured</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Knowledge of Eating Disorder Symptoms&lt;br&gt; MHLQ for Bulimic-type eating disorders:&lt;br&gt; problem recognition&lt;br&gt; knowledge of effective treatments scale&lt;br&gt; knowledge of informal help-seeking scale&lt;br&gt; First Aid Knowledge Test&lt;br&gt; Mental Health First Aid Questions: item 5 - ALGEE</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Social Distance Scale&lt;br&gt; MHLQ for Bulimic-type eating disorders:&lt;br&gt; beliefs about most helpful interventions&lt;br&gt; attitudes towards treatment (3 items)&lt;br&gt; attitudes towards bulimia (3 items)</td>
</tr>
<tr>
<td>Behaviour</td>
<td>Level of Contact Report&lt;br&gt; Mental Health First Aid Questions&lt;br&gt; item 1 – Any contact&lt;br&gt; item 2 – Number of contacts&lt;br&gt; item 3 – Amount of help&lt;br&gt; item 4 – Type of help&lt;br&gt; item 6 – Confidence&lt;br&gt; Mental Health Service Use&lt;br&gt; First Aid Experiences Questionnaire</td>
</tr>
<tr>
<td>Mental Health Status</td>
<td>EDE-Q&lt;br&gt; K10</td>
</tr>
</tbody>
</table>

**Demographic Questions**

At baseline, participants were asked to provide the following information: their age, gender, country of birth, whether English is their first language, how many years of
tertiary studies they had completed, what university course they were studying or had completed, whether they had ever attended a MHFA training course, whether they had ever attended a training or information session about eating disorders, and whether they had ever downloaded or looked at the document *Eating Disorders: First aid guidelines*.

**Knowledge of Eating Disorder Symptoms**

Knowledge of eating disorder symptoms was assessed with a single item that asked participants to *give a brief description of what you think the main signs or symptoms of an eating disorder might be*. Responses were provided in an open-ended format and a scoring system was developed based on the 25 ‘warning signs of a developing disorder’ as outlined in the previously developed guidelines. The warning signs in the guidelines are broken up into three categories: behavioural (12 signs), physical (five signs) and psychological (eight signs) (see pp.6 Appendix G).

Participants were given one point for each of the warning signs mentioned. Both category scores and a total score were calculated; category scores were formed by adding together the number of signs correctly mentioned within each category and total scores were formed by adding the three category scores together. Participant responses were scored by an independent rater who was blind to the time condition. Items were placed in a random order for scoring, according to a random sequence generator (www.random.org). The rater was trained using a structured codebook and 50 practice items, on which there was pre-existing expert consensus on scores. The inter-rater reliability on these items was $r = 0.94$.

As this test required that there was pre-existing consensus on what constitutes the warning signs for a developing eating disorder, this is the first time that this instrument
has been implemented. Its validity is implied by being derived directly from the guidelines. However, the re-test reliability of the instrument has yet to be assessed.

*Mental Health Literacy Questionnaire for Bulimic-type Eating Disorders (MHLQ-B)*

Accurate problem recognition, knowledge and beliefs about interventions, and attitudes towards treatment and bulimia, were assessed using the MHLQ-B (see pp.13-17, Appendix G). This instrument is based on the widely used Mental Health Literacy Questionnaire (MHLQ) by Jorm and colleagues (e.g. Jorm, Korten, Jacomb, Christensen, & Henderson, 1999; Jorm, Korten, Jacomb, Rodgers, Pollitt, et al., 1997), and was developed from the face-to-face interview protocol used in the 1995 *National Survey of Mental Health Literacy* (Jorm, Korten, Jacomb, Christensen, et al., 1997a, 1997b; Jorm, Korten, Jacomb, Rodgers, & Pollitt, 1997; Jorm, Korten, Rodgers, et al., 1997). The MHLQ-B was developed for the *Health and Well-Being* study by Mond and colleagues (Mond, Hay, et al., 2004c) (see Chapter 1.3 for further discussion).

The questionnaire began with a vignette describing a fictional young adult woman ‘Kelly’ whose symptoms meet DSM-IV-TR diagnostic criteria for bulimia purging subtype. This was followed by a series of questions on participants’ beliefs about: the nature of Kelly’s problem, which interventions would be most helpful for Kelly (e.g. which individuals, which treatments or activities and which medications), how difficult it would be to treat Kelly’s problem, what the outcome would be if Kelly had or did not have treatment, how distressing it would be to have Kelly’s problem, how sympathetic they would be towards Kelly, and whether it might not be too bad to be like Kelly given that she has been able to lose a lot of weight. All questions were answered using a single, forced-choice response.
The symptoms described in the vignettes have been validated using professional diagnoses (Hay, Darby, et al., 2007; Jorm, Korten, Jacomb, Rodgers, Pollitt, et al., 1997) and findings reported by Jorm et al. (1997), which demonstrated that there was consistency in participant belief systems across different mental disorders, which supports the instrument’s construct validity. Furthermore, findings across a range of studies, which reveal that participant age, education, recognition and symptom levels, all influence responses; support its discriminant validity (Mond, Hay, et al., 2004a, 2004b, 2004c; Mond & Marks, 2007). Data from professionals have also shown that the items distinguish professional and public criterion groups (Hay, Darby, et al., 2007; Hay, De Angelis, et al., 2005; Jorm, Korten, Jacomb, Rodgers, Pollitt, et al., 1997). In addition, there is evidence that individuals’ responses to specific questions are stable over a 6 month period (Jorm, et al., 2003; Kitchener & Jorm, 2002b).

The MHLQ has been used in previous research evaluating MHFA training, however, only the depression and schizophrenia vignettes have been used (Jorm, et al., 2004; Kitchener & Jorm, 2002b, 2004). Although previous research has manipulated the gender depicted in schizophrenia and depression vignettes, an effect of gender has only been found for respondents (i.e. whether participants are male or female) and not for the character depicted in the vignette (Cotton, Wright, Harris, Jorm, & McGorry, 2006). Given these results, and the requirement of an increased sample size to detect a reliable effect of vignette gender, the current research did not manipulate vignette gender. Furthermore, although there have been some investigations of mental health literacy using a vignette depicting a fictional character with anorexia (Mond & Arrighi, 2011; Mond, Robertson-Smith, et al., 2006), the resulting responses about problem recognition and beliefs about treatment and prognosis, show only minor differences
when compared to the bulimic-type vignette. Again, in light of previous research, and because an examination of differences in mental health literacy according to eating disorder type was not a primary aim of this research, the current instrument did not manipulate the type of eating disorder depicted in the vignette. A description of a bulimic-type eating disorder was chosen over a description of an anorexic-type eating disorder because the former is more prevalent in the sample age group (see Chapter 1.1 for more details Hoek, 2006; Hoek & van Hoeken, 2003) and participants are therefore more likely to encounter a situation where someone with symptoms of bulimia requires mental health first aid.

In previous evaluations of MHFA training, a *knowledge of effective treatments and professionals scale* was constructed from the three questions assessing knowledge of individuals who might be helpful (15 items), knowledge of treatments or activities (16 items) and knowledge of medications (eight items) (see pp.14-15 of Appendix G). For example, Kitchener and Jorm (2002b) devised a scale from zero to six for the depression vignette, based on professional consensus that GPs, psychiatrists, clinical psychologists, antidepressants, counseling and CBT are helpful for depression. For each of these items rated as ‘helpful’, participants scored one point. The knowledge score obtained at baseline was then compared to that obtained six months after attending MHFA training (Kitchener & Jorm, 2002b). Although this method has not been used in previous research implementing the MHLQ-B, a scale was constructed based on the evidence in the current treatment literature, and the recommendations in the previously developed guidelines, which suggests that psychologists, psychiatrists, dietitians/nutritionists, GPs, CBT, getting advice about diet and nutrition, and antidepressants, are all effective for eating disorders, and can therefore be considered
‘helpful’ for bulimia (see Chapter 1.2 for a review of effective treatments). Hence, participant responses were scored from zero (none of these items rated as ‘helpful’) to seven (all items rated as ‘helpful’).

A novel addition to the analyses of the MHLQ-B was the inclusion of the knowledge of informal help-seeking scale. Because there are informal activities known to facilitate formal treatment seeking or the management of disordered eating symptoms (see Chapter 1.2 for a review), the current research also sought to quantify how knowledge about broader help-seeking activities changes in response to the training program. From the 40-item list of individuals, treatments or activities, and medications, provided in the MHLQ-B, those that were recommended in the previously developed guidelines as appropriate and helpful for an individual with an eating disorder were selected for inclusion. Four items were therefore used: friends, family members, using a self-help treatment manual and getting information about problem eating and available services. Hence, participant responses were scored from zero (none of these items rated as ‘helpful’) to four (all items rated as ‘helpful’).

First Aid for Eating Disorders Knowledge Test (FAKT)

The FAKT was developed for use in the current research to test participant knowledge of best practice first aid strategies, as outlined in the previously developed guidelines. It is comprised of 26 true/false statements regarding knowledge and behaviours required for providing optimal mental health first aid. Responses are via a single forced-choice selection from the options: ‘Agree’, ‘Disagree’ or ‘Not sure’ (see pp. 8-12, Appendix G). One point is given for each answer that concurs with the information in the guidelines (i.e. an ‘agree’ response in relation to a true statement), resulting in a possible total score range of 0-26.
As the development of this test first required consensus on which are the best practice first aid strategies, this research is the first time this instrument has been implemented. The measure was validated with pilot testing, which involved 52 respondents, 31 (60%) of whom were experts in mental health first aid, two (4%) of whom were experts in eating disorders, and 19 (36%) of whom were community members with no specialist knowledge or training in mental health first aid (for further details, see Appendix H). The pilot testing involved participants responding to 52 items, which were derived from statements in the previously developed guidelines. For each correct response participants were given one point. For each item, two scores were calculated; one was the number of expert participants who responded to it correctly, the other the number of lay participants who responded to it correctly. The items which provided the largest discrepancy between expert and lay scores were selected for inclusion in the FAKT (R. J. Cohen & Swerdlik, 2010). In addition to the pilot testing, the instrument’s validity is also implied by being derived directly from best-practice guidelines. The reliability of the instrument, however, is yet to be tested.

Social Distance Scale

The Social Distance Scale was constructed to assess levels of social rejection that members of the community are likely to impose on individuals with mental illness (Link, Cullen, Frank, & Wozniak, 1987). It comprises seven questions that ask how likely a participant is to react to a person with mental illness, as described by an accompanying vignette. Each question is rated on a 4-point Likert scale (1 = ‘definitely willing’ to 4 = ‘definitely unwilling’) (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). A composite measure of social distance is calculated by adding across all items, with higher scores indicating a greater degree of desired social distance and more
negative attitudes towards people with mental illness. Summation across ordinal categories is ubiquitous in the social distance literature and this practice is supported by psychometric theory (Jorm & Oh, 2009; van der Ark, 2005).

The psychometric properties of this instrument have been extensively investigated; the internal consistency (Cronbach's alpha) of this measure has been reported as 0.75 (Penn, et al., 1994). It has been used widely in previous research investigating stigmatising attitudes towards individuals with different mental illnesses (for a review see Jorm & Oh, 2009), and has been used in previous evaluations of MHFA training, which found that the training was associated with a significant decrease in social distance (i.e., more favourable attitudes) especially, but not only, for the depression vignette (Kitchener & Jorm, 2002b, 2004).

A systematic review of social distance (Jorm & Oh, 2009) uncovered only one previous instance where social distance for eating disorders had been investigated (Mond, Robertson-Smith, et al., 2006). Importantly, the study by Mond and colleagues (2006) examined stigmatising attitudes towards anorexia and only implemented three of the seven items from the scale. The current research is therefore the first time this scale has been used in its entirety to investigate negative attitudes held by members of the public towards individuals with eating disorders, and the first attempt to describe desired social distance from an individual with bulimia.

The Social Distance Scale used in the current research was presented at the end of the MHLQ-B and reworded to make reference to the vignette about ‘Kelly’ (see pp. 17, Appendix G). Responses were made using a 5-point Likert scale (1 = ‘definitely willing’ to 5 = ‘definitely unwilling’, with the addition of a neutral category 3 = ‘neither willing nor unwilling’). Total scores could therefore range from 0-35.
The Level of Contact Report was developed by Holmes, Corrigan, Williams, Canar and Kubiak (1999), to measure how familiar members of the public were (what level of contact they had) with individuals with schizophrenia, and whether level of familiarity had any effect on stigmatising attitudes, such as perceiving a person with schizophrenia as dangerous or unpredictable. The instrument lists 12 situations involving contact with an individual with mental illness. The situations are ranked according to intimacy, with a score of 12 indicating the highest level (I have a mental illness), and a score of one indicating the lowest (I have never observed a person that I was aware had a serious mental illness). The highest score reported by a participant is taken as the total score.

The reliability and validity of the measure have been supported by a number of studies (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Holmes, et al., 1999). In addition, a reliable negative relationship between level of contact and social distance has been found, whereby those with increased contact have lower levels of desired social distance (Jorm & Oh, 2009).

Although previous evaluations of MHFA training have assessed participant contact with individuals with mental illness, contact was measured with the item: In the past 6 months, have you had contact with anyone with a mental illness? Furthermore, if respondents answered ‘yes’, they were then asked How many people have you had contact with?. Although the MHFA training was not found to be associated with an increase in contact with individuals with mental illness, it was associated with an increase in the help provided to those individuals. The Level of Contact Report was developed in response to the low statistical power provided by such binary measures of
contact (Holmes, et al., 1999). Because ordinal scales are much more sensitive measures, the Level of Contact Report is thought to be a more robust instrument than that used in previous MHFA training evaluations (Corrigan, Edwards, et al., 2001; Corrigan, Green, et al., 2001).

The Level of Contact Report administered in the current research involved 11 items; given that all participants were either students or tutorial staff at the university, item 8 (My job involves providing services/treatment for persons with a severe mental illness) was considered redundant and therefore removed. Items 9-12 were still scored according to their original rank order and therefore total scores ranged from 1-12. In addition, all items were modified to be specific to eating disorders, such that all references to ‘mental illness’ were replaced with ‘eating disorder’ (see pp.6, Appendix G).

**Mental Health First Aid Questions**

Throughout the questionnaire battery, six items were included to assess participants’ provision of assistance to individuals with eating disorders, knowledge of the MHFA action plan and confidence in providing assistance (see pp.6, 7, 13, 14, Appendix G). These items were based on those used in previous MHFA training evaluations (Jorm, Kitchener, et al., 2005; Jorm, et al., 2004; Kitchener & Jorm, 2002b, 2004).

The first item was designed to assess whether participants’ perceived contact with people with eating disorders changed within the follow-up time frame. The item In the last 6 months have you had contact with anyone who you think might have an eating disorder? was administered at baseline and then at follow-up. Participants responded to this item using a single force-choice selection from the options ‘yes’, ‘no’ and ‘not
sure’. If participants responded ‘yes’, a second item followed, asking how many people with eating disorders they had contact with. These items were included in addition to the Level of Contact report because although the latter provides a scale of familiarity or intimacy with individuals with eating disorders, it does not assess the timeframe in which contact occurs and does not quantify how many individuals with eating disorders have been encountered.

The third item was designed to quantify how many participants were providing first aid at baseline and whether this changed at follow-up. This item appeared directly under the first two and asked If you have had contact with someone who has an eating disorder, in the last 6 months, have you offered them any help?. Participants responded using a single forced-choice selection from the options ‘N/A I have not had contact with someone who has an eating disorder’, ‘no help offered’, ‘a little help offered’, ‘some help offered’ and ‘a lot of help offered’. These were scored from one to five, with a higher score indicating a higher level of help provided. Previous MHFA training evaluations have consistently found an increase in help offered (Jorm, et al., 2004; Kitchener & Jorm, 2002b, 2004). A provisional item then asked participants who reported having offered help; If you offered help, what type of help was it?. This item was designed to gather data about how participants were assisting those with eating disorders before the training program and whether this changed after receiving the training. The open-ended responses were divided into the following categories: (1) asked someone more appropriate than myself to provide first aid (2) talked to the person directly (3) offered general support (4) offered information about illness or available services (5) encouraged or assisted the person to seek professional help (6) encouraged self help strategies (7) offered practical help (8) offered emotional support (9)
performed a risk assessment or monitored the person. Category frequencies were then assessed across time points.

To assess participants’ knowledge of the appropriate actions a person should take when providing a mental health first aid intervention, a fifth mental health first aid item, appearing in the MHLQ-B, asked, *If Kelly was someone you knew and cared about, how would you help her?*. This item, along with all others from the MHLQ-B, was administered at all three time points. Responses were open-ended. A scoring system was developed in accordance with the MHFA action plan, which suggests 5 optimal actions for assisting someone with a mental illness (see Table 3). Because the first action *A – approach the person, assess and assist with any crisis* contained many concepts, this was split into two categories (approach and assess/assist). The remaining four actions comprised one category each. For each of the six categories, responses were scored out of two points: a score of two was given if participants correctly described an action and provided specific detail about how they would undertake that action; a score of one was given if they mentioned the action but did not provide detail on how it may occur; and a score of zero was given if the action was not mentioned. A total score was calculated by adding together the scores for each of the categories, with a possible total score falling between 0-12. Participant responses were scored by an independent rater who was blind to the time condition. Items were placed in a random order for scoring, according to a random sequence generator (www.random.org). The rater was trained using a structured codebook and 60 practice items, on which there was pre-existing expert consensus on scores. The inter-rater reliability on these items was $r = 0.91$. The system for scoring this item has been used in previous research investigating action plan knowledge which found the training was associated with a
significant increase in knowledge of the appropriate actions a person should take when providing a mental health first aid intervention (Kelly, et al., In press; Minas, et al., 2009).

To assess participant confidence in providing first aid, a sixth item was added to the MHLQ-B. It asked *If you had contact with someone who had a problem like Kelly’s, how confident would you feel in helping them?*. Responses were via a 5-point Likert scale, which ranged from ‘not at all confident’ to ‘extremely confident’. These were scored from one to five, with a higher score indicating a higher level of confidence. A confidence score for each time point was calculated by summing across confidence responses; this method has been used previously (Jorm, et al., 2004). Previous MHFA training evaluations have consistently found an increase in participant confidence (Jorm, et al., 2004; Jorm, Kitchener, Sawyer, et al., 2010; Kitchener & Jorm, 2002b, 2004).

*Eating Disorders Examination Questionnaire (EDE-Q)*

The EDE-Q (Fairburn & Beglin, 1994) was developed from the Eating Disorder Examination (EDE) (Cooper & Fairburn, 1987), a diagnostic interview designed to elicit clinically relevant information about eating, exercise and body image disturbances. The EDE-Q is the most widely used eating disorder self-report screening tool currently in use, and because its psychometric properties have been established, it is currently considered the gold-standard for eating disorder research (Mond, Hay, Rodgers, Owen, & Beumont, 2004d; Mond, Hay, et al., 2004e; Mond, Myers, et al., 2008; Peterson, et al., 2007; Peterson & Mitchell, 2005). The specificity of the EDE-Q in indicating eating disorder status has been documented and normative data for undergraduate men and women, and for community samples more broadly, are available.
The EDE-Q 6.0 is a 31-item self-report questionnaire that assesses disordered eating, weight control behaviours, and concerns about body weight and shape, over the past 28 days (see pp. 28-29, Appendix G). Responses are lodged using 7-point Likert scales designed to quantify pathology frequency. Items are scored from zero (‘None of the time’) to six (‘Every time’) with a higher score indicating a higher level of pathology. The instrument has four sub-scales; restraint, eating concern, weight concern, and shape concern. An EDE-Q global score is calculated by creating an average of the sub-scale scores (summing across each of the subscales and dividing by 4). In addition to subscale scores, there are items at the end of the questionnaire that assess current height, weight and menstruation. Using information from specific subscales and BMI calculations, the EDE-Q can be used to make probable diagnoses of anorexia, bulimia and binge eating disorder. The EDE-Q is known to give a poorer estimate of EDNOS diagnoses. Some Australian research has suggested that a total score of 2.8 on the EDE-Q reliably predicts eating disorder status (Mond, Myers, et al., 2008), however, this research was conducted with females only and a reliable cut-off has not yet been established for males.

One previous study has investigated the effect of providing a mental health literacy intervention on eating disorder pathology (Hay, Mond, et al., 2007). Although significant improvements in EDE-Q global score were found at 12-month follow-up, the group (control vs. mental health literacy intervention) by time interaction only approached statistical significance. Of note is that some research investigating the effect of providing preventive interventions has found evidence to suggest that providing
information about eating disorder symptoms can lead to an increase in eating pathology (Carter, Stewart, Dunn, & Fairburn, 1997; Mann, et al., 1997). The EDE-Q was used in the current research in order to assess whether the information provided by the training program had a negative impact on eating pathology.

**K10**

The K10 is a general measure of non-specific psychological distress, which was developed by Kessler and colleagues for epidemiological screening (Kessler, et al., 2002). Non-specific psychological distress has been used as an indication of elevated psychopathology and increased probability of developing a clinically significant mental health problem. The K10 is described as a ‘dimensional scale’ and is intended for use in indicating level or severity of distress, relative to pre-determined population mean scores (Kessler, et al., 2002).

The instrument contains 10 items about physical and psychological symptoms of distress over the past 28 days (e.g. *About how often did you feel so nervous that nothing could calm you down?*). Responses are via 5-point Likert scale, from ‘None of the time’ to ‘All of the time’ (see pp.30, Appendix G). Previous Australian research has scored each item from one to five, with higher scores indicating a higher level of distress. A total score is calculated by adding up each item score, resulting in a possible range from 10-50. There are established norms for Australians and young people; in a nationally representative sample it was found that Australians have a mean total score of 14.2 and a median of 12; 68% score under 15 and 3% score 30 and above (Andrews & Slade, 2001).

The psychometric properties of the instrument have been widely studied (Furukawa, Kessler, Slade, & Andrews, 2003; Kessler, et al., 2002; Kessler, et al.,
and it has been repeatedly implemented in large population-based studies (e.g. Andrews & Slade, 2001; Kessler, et al., 2003) and has been administered in previous eating disorder research (Darby, Hay, Mond, Rodgers, & Owen, 2007; Hay, Mond, et al., 2007). To date, the K10 has been used in only one mental health literacy intervention (Hay, Mond, et al., 2007). This study found a significant improvement (lower scores) at follow-up, compared to baseline, but there was only a trend towards significant improvement when group (control vs. mental health literacy intervention) comparisons were conducted. Although improvement of the mental health of participants is not the primary aim of the training, three MHFA training evaluation trials have assessed the health of participants at baseline and follow-up (Jorm, Kitchener, Sawyer, et al., 2010; Kitchener & Jorm, 2004). The first used the SF-12 and found that participants showed a significant improvement in the mental health component, despite no change in the physical health component. The second used the K6 and found no significant changes between baseline and follow-up. The third trial used the K10 and found no significant changes between baseline and follow-up, but did find a difference between the control and intervention groups for a question supplementary to the K10 about number of days out of role due to negative feelings, with the intervention group showing a significant reduction at follow-up (Jorm, Kitchener, Fischer, et al., 2010).

Given these preliminary findings, participant mental health was also considered of interest in the current research. The K10 was chosen in preference to the SF-12 because of its specificity to the mental health domain; and in preference to the K6 because of its superior reliability and specificity, and because of the existence of normative data (Furukawa, et al., 2003).

*Mental Health Service Use*
While previous MHFA training has shown that the information taught leads to increased provision of helping behaviours in participants who attend the training, and in increased help-seeking in individuals who are recipients of first aid, previous research has not evaluated whether the increased knowledge about symptoms and effective treatments leads to changes in help-seeking for participants’ own mental health problems (Jorm, Kitchener, et al., 2005; Jorm, et al., 2004; Kitchener & Jorm, 2002b, 2004).

Despite the primary aim of MHFA training being to improve outcomes for individuals who are recipients of first aid, an unexpected finding of one previous evaluation trial was evidence for an improvement in participants’ mental health (Kitchener & Jorm, 2004). However, this evaluation did not assess what factors may have been associated with such improvements. For example, it is possible that the MHFA training had an indirect positive effect on mental health status through increasing help-seeking behaviours in those who participated.

One large multi-stage study has investigated help-seeking for problems related to disordered eating in a representative Australian population (e.g. Mond, Hay, Darby, et al., 2009; Mond, Hay, et al., 2007; Mond, Hay, Rodgers, Owen, & Mitchell, 2006). This research used the following three items to assess participant help-seeking history: (1) Have you ever received treatment or advice from a professional, specifically for problems with eating, such as eating too much in one go, feeling out of control with your eating, or being preoccupied with what or when you should eat?; (2) Have you ever received treatment or advice from a professional, specifically for other emotional problems, such as being anxious or depressed?; and (3) Have you ever received treatment or advice from a professional, specifically for problems with weight, such as
trying to lose or gain weight? Participants responded to each of these items using a single forced-choice selection from one of two options ‘yes’ or ‘no’. In addition, each item was followed by a provisional open-ended response item, designed to gather information about which professionals or treatments had been accessed: If "Yes", please indicate what type of professional the treatment or advice was received from (e.g. GP, psychologist). In the current research, these items were administered at baseline and at follow-up (see pp.18, Appendix G).

First Aid Experiences Questionnaire

The First Aid Experiences Questionnaire was developed and implemented by Jorm, Kitchener and Mugford (2005) in a follow-up study of participants who had attended MHFA training. The questionnaire was designed to elicit open-ended information about helping behaviours that had been provided to individuals with mental health problems and what the perceived effect of those behaviours was. This instrument does not seek to quantify behaviours and therefore does not have associated analyses of psychometric properties.

An adaptation of the original questionnaire was used in research investigating the utility and impact of accessing MHFA guidelines on the internet (see Chapter 2.2) (Hart, Jorm, et al., In submission). This adapted version was used in the current research, though references to ‘the guidelines’ were changed to ‘the training program’. To assess whether the information provided in the training program was generalised to illnesses other than eating disorders, the questionnaire also asked whether participants had provided first aid to individuals who were experiencing mental health problems other than an eating disorder (see pp. 19-27, Appendix G).

Participant Feedback
The questionnaire battery provided at follow-up concluded with a single open-ended response item allowing participants to provide comments about the training and their experiences with providing first aid (see pp.31, Appendix G).

Procedure

Not all measures were employed at each of the three time points. Those that assessed a length of time greater than one-week (e.g. K10, EDE-Q, the Level of Contact Report) were not administered at post-training, as these were considered unlikely to have changed in the short time since participants completed the baseline questionnaire. The time points at which each of the different measures were administered is shown in Table 15.

Prior to attending the training program, participants were sent an electronic link to the baseline questionnaire which was hosted by an online survey software system (surveymonkey.com). Participant access to the questionnaire was granted within a maximum of seven days prior to the training. It was a requirement of attendance at the training program that the baseline assessment be completed.
Immediately after the training concluded, participants completed the post-training questionnaire in hardcopy. This method was chosen to ensure that data was obtained from each participant, that time between training and lodgment of responses was standardised, and because of the logistical difficulties in locating enough computers for each participant to complete an electronic version of the questionnaire before leaving the training session. Research investigating the effect of questionnaire administration mode (e.g. electronic vs. hardcopy) has indicated that differences in the quality of responses are negligible and no bias in sample representation is apparent (e.g. Mavis & Brocato, 1998; Truell, Bartlett, & Alexander, 2002).

An electronic link to the follow-up questionnaire was sent to each participant’s email address 182 days (6 months) after the date of attendance at the training program. Personalised email and SMS text prompts were sent at one week intervals, for a
maximum of three weeks, to remind participants to complete the questionnaire. Once completed, further prompts were cancelled.

Statistical Analyses

For continuous measures completed at all three time points (SDS, FAKT, intervention knowledge scales and ALGEE item), repeated measures analyses of variance (ANOVA) were used to assess for any significant differences between baseline, post-training and follow-up scores. Where assumptions of sphericity were violated, the Hunyh-Feldt method for adjusting degrees of freedom was used (A. P. Field, 2009). The repeated measures ANOVA was chosen in preference to multivariate techniques (MANOVA) as it is considered more robust in smaller samples and therefore more suitable for the current data (A. P. Field, 2009; Howell, 1997). Where the omnibus test was significant, planned contrasts were conducted to assess whether there was a significant change from baseline to post-training and baseline to follow-up. Partial $\eta^2$ was calculated as a measure of effect size, with 0.20 indicating a small, 0.50 a medium, and 0.80 a large, effect size (J. Cohen, 1992). For continuous measures completed at baseline and follow-up only (LCR, EDE-Q, K10), dependent (paired) samples two-tailed $t$-tests were conducted. In accordance with the recommendations of Field (2009), a Pearson’s product moment correlation coefficient ($r$) was calculated using the $t$ statistic, as a measure of effect size, with 0.1 indicating a small, 0.3 indicating a medium, and 0.5 indicating a large, effect size (J. Cohen, 1988).

The assumption that continuous variables were normally distributed was tested using the Kolmogorov-Smirnov test ($D$) (A. P. Field, 2009). Non-parametric tests were used for comparison of means where variables were found to be significantly non-normal. Friedman’s ANOVA ($\chi^2$) was used as the non-parametric counterpart to a
repeated measures ANOVA (A. P. Field, 2009; Howell, 1997), with the Monte Carlo method for estimating statistical significance (A. P. Field, 2009). Where the omnibus test was significant, post-hoc Wilcoxon signed-rank tests ($T$) were conducted (A. P. Field, 2009).

In all cases where non-parametric tests were conducted, the results were found to be the same as the parametric counterpart. Given that it was important to discuss changes in mean scores across the time points, in order to allow comparison with previous research, the results of the parametric tests are presented here. The results of the non-parametric tests, which are not calculated from mean scores, are shown in Appendix I.

For ordinal data, Friedman’s ANOVA was used and Wilcoxon signed-rank tests were then conducted where the omnibus test was significant (A. P. Field, 2009; S. Siegel, 1956). In accordance with the recommendations of Field (2009), a Pearson’s product moment correlation coefficient ($r$) was calculated using $z$-scores, as a measure of effect size, with 0.1 indicating a small, 0.3 indicating a medium, and 0.5 indicating a large, effect size (J. Cohen, 1988). For dichotomous data, a Cochran’s Q test was used for $k$ samples and the McNemar test for paired comparisons (A. P. Field, 2009; S. Siegel, 1956). As there is no clear consensus on the best measure of effect size for such data, none were calculated. These tests were used as equivalent tests to the Pearson’s chi-square, which could not be performed because the repeated measures design violated the assumption of independent observations. One exception where a Pearson’s chi-square analysis was conducted, was in the assessment of whether there were differences in first aid experiences between staff and students in the sample, because these groups were independent.
Unless corrections for inflated error rate were required, all tests were conducted using $\alpha < .05$. For open-ended responses, thematic analysis was used to section data into commonly occurring categories, which could then be assessed for frequency.

**Results**

**Participants**

*Characteristics at baseline*

Ninety participants completed the baseline questionnaire. Participant characteristics are shown in Table 16. Participants ranged in age from 17 to 62 years ($M = 23.84$, $SD = 10.43$). Over half were female and just over three quarters were students. Participants had studied at the tertiary level, on average, for 2.68 years ($SD = 3.16$). A large majority of participants were born in Australia and had English as their first language.

To establish the level of prior knowledge and education in the areas of mental health first aid and the eating disorders, participants were asked if they had ever attended a MHFA training course or an education program about eating disorders. A very small number indicated they had received prior training, the majority of whom were staff acting in a welfare capacity at their college. Similarly, very few participants indicated that they had read the previously developed guidelines prior to attending the training (see Table 16).

The mean EDE-Q Global score for females in the sample was $1.52$ ($SD = 1.12$) indicating normative eating pathology (e.g. $M = 1.52$, $SD = 1.25$, Mond, Hay, Rodgers, & Owen, 2006a). The score for males was $0.83$ ($SD = 0.70$), indicating the sample
scored slightly lower (less pathological) than normative (e.g. $M = 1.09$, $SD = 1.00$, Lavender, et al., 2010). This finding may be due to the inclusion of staff in the current sample, who were older than the sample used to establish norms, and the trend for EDE-Q scores to decrease with age (Mond, Hay, Rodgers, & Owen, 2006a). Seven female participants scored above 2.80, suggesting they were likely to be experiencing a clinically significant eating disorder (Mond, Hay, et al., 2004e). Cut-off scores for establishing probable diagnoses in community samples of males have not yet been reported, however, they are likely to be lower than that for females. No males scored above 2.8, however, two scored above 2.50.

The average total score on the K10 for the sample was 18.12 ($SD = 4.78$), indicating scores were higher than normative (e.g. $M = 14.20$, Andrews & Slade, 2001). Scores ranged from 10 to 30, with nine participants scoring 25 or higher. According to Australian national survey data, 38% of individuals who score in this range will experience a clinically significant affective disorder (Andrews & Slade, 2001).
Table 16

Characteristics of participants completing baseline, post-training and follow-up
questionnaires.

<table>
<thead>
<tr>
<th></th>
<th>Baseline (n = 90)</th>
<th>Post-training (n = 82)</th>
<th>Follow-up (n = 73)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Female</td>
<td>51</td>
<td>56.67</td>
<td>45</td>
</tr>
<tr>
<td>Staff</td>
<td>21</td>
<td>23.33</td>
<td>20</td>
</tr>
<tr>
<td>Student</td>
<td>69</td>
<td>76.67</td>
<td>62</td>
</tr>
<tr>
<td>Born in Australia</td>
<td>67</td>
<td>74.44</td>
<td>60</td>
</tr>
<tr>
<td>English second language</td>
<td>7</td>
<td>7.78</td>
<td>7</td>
</tr>
<tr>
<td>Attended MHFA course</td>
<td>5</td>
<td>5.56</td>
<td>5</td>
</tr>
<tr>
<td>Read ED guidelines</td>
<td>4</td>
<td>4.44</td>
<td>3</td>
</tr>
<tr>
<td>Attended ED course</td>
<td>5</td>
<td>5.56</td>
<td>5</td>
</tr>
</tbody>
</table>

Participant flow

Flow of participants through the research stages is shown in Figure 2. Eight participants failed to complete the training program, despite completing the baseline questionnaire. All 82 participants who attended the training completed the post-training questionnaire. No statistically significant differences were found at baseline, between those participants who completed the training and the post-training questionnaire, and those who did not.

Seventy-three participants returned complete follow-up questionnaires, giving a response rate of 89% compared to post-training and 81% compared to baseline. Five participants began the follow-up questionnaire but completed less than 50%. There were no participants who responded to more than 50% but less than 100% of the questionnaire, so missing data imputation techniques were not required. Four
participants did not respond at all. No statistically significant differences were found at baseline between those participants who completed the follow-up questionnaire and those who did not.

As this was an exploratory evaluation designed to provide a preliminary analysis of the training protocol and evaluation instruments, there was no control arm. Participants were therefore not randomised and intention-to-treat analyses were not conducted. Because of the small number who failed to complete all three stages of the evaluation (n = 17), and the lack of any significant difference between completers and drop-outs on all sample characteristics at baseline, the participants who did not complete the post-training or follow-up questionnaires were excluded from further analyses.
Figure 2

Participant flow through research stages.
Changes in knowledge

Knowledge of eating disorder symptoms

Results for the item *Please provide a brief description of what you think the main signs or symptoms of an eating disorder might be* were coded into three categories, in accordance with the warning signs provided in the previously developed guidelines (behavioural, physical and psychological signs and symptoms). A total score was then calculated summing across these categories. Results for these four items are shown in Figure 3.

To assess whether there were any significant changes to the total score over time, a one-way repeated measures ANOVA was conducted. Mauchly’s test indicated that the assumption of sphericity had been violated, $\chi^2(2) = 9.24, p = .01$, therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ($\varepsilon = .91$). The results show that total scores were not significantly different across time points, $F(1.8, 131) = 0.91, p = .4, \eta^2 = .01$. Given that the omnibus test was not significant, further testing of categories was not conducted.

*MHLQ-B: Problem recognition*

In response to the first question *What would you say is Kelly’s main problem?* the majority of participants selected options relating to a mental health problem, such as ‘low self-esteem or lack of confidence’ or ‘mental illness’ (see Table 17). Low-self esteem was the modal response at baseline. Although many correctly labeled Kelly’s problem at baseline as ‘bulimia nervosa’, the proportion using this label increased from baseline to post-training. Despite a decrease in the number of participants labeling Kelly’s problem as bulimia from post-training to follow-up, this remained the modal response across both time points.
Figure 3

Knowledge of eating disorder signs and symptoms item scores at each time point (n = 73).

Changes were not significantly different over time.

Table 17

Proportion of participants selecting possible response options for the question: What would you say is Kelly’s main problem? (n=73).

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Baseline</th>
<th>Post-training</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Low self-esteem or lack of confidence</td>
<td>22</td>
<td>30.1</td>
<td>6</td>
<td>8.2</td>
</tr>
<tr>
<td>A binge eating disorder or problem</td>
<td>15</td>
<td>20.5</td>
<td>22</td>
<td>30.1</td>
</tr>
<tr>
<td>Bulimia nervosa</td>
<td>13</td>
<td>17.8</td>
<td>31</td>
<td>42.5</td>
</tr>
<tr>
<td>Mental illness</td>
<td>7</td>
<td>9.6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>An anxiety disorder or problem</td>
<td>6</td>
<td>8.2</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>Anorexia nervosa</td>
<td>5</td>
<td>6.8</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>Yo-yo dieting</td>
<td>2</td>
<td>2.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nutritional deficiency</td>
<td>1</td>
<td>1.4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>An exercise disorder or problem</td>
<td>1</td>
<td>1.4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Depression</td>
<td>1</td>
<td>1.4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Modal responses indicated in bold
The more generic label ‘a binge eating disorder or problem’ was the second most selected option across all three time points. Options that were available to participants, but were not selected at any point, included ‘loneliness’, ‘no real problem, just normal’, ‘diabetes’, ‘stress’ and ‘a hormone problem’.

The percentage of participants who accurately recognised the problem in the vignette as ‘bulimia nervosa’ at each time point is shown in Figure 4. In order to assess whether the changes in frequencies over time were significantly different, participant selection of the response ‘bulimia nervosa’ was analysed using a Cochrane’s Q-test. This found that frequencies were significantly different across the three time points, $Q(2) = 114.30, p = .001$. McNemar tests showed that there was a significant increase in frequency of use from baseline to post-training, $\chi^2(1) = 13.14, p < .001$. However, this dropped at follow-up and was no longer significantly different from baseline, $\chi^2(1) = 2.45, p = .115$.

To assess whether recognition of the problem as any eating disorder changed over time, the selection of responses representing an eating disorder (‘bulimia nervosa’, ‘a binge eating disorder or problem’, ‘anorexia nervosa’), were assessed together (see Figure 5). At baseline 45.2% recognised the problem as any eating disorder. This increased to 78.1% at post-training, though fell to 64.4% at follow-up. A Cochrane’s Q-test found that frequencies were significantly different across the three time points, $Q(2) = 22.36, p < .001$. McNemar tests showed that there was a significant increase in frequency of use from baseline to post-training, $\chi^2(1) = 17.63, p < .001$. Despite a drop from post-training to follow-up, frequency at follow-up was still significantly different from baseline, $\chi^2(1) = 7.04, p = .007$. 
Finally, to assess whether recognition of the problem in the vignette as a general mental health problem changed over time, the frequency of all other responses representing a mental health related condition were assessed together (‘an anxiety
disorder or problem’, ‘mental illness’, ‘depression’, ‘low self-esteem or lack of self-confidence’ - see Figure 6). At baseline 49.3% recognised the problem as any mental health problem. This decreased to 21.9% at post-training, although the percentage rose slightly to 27.4% at follow-up.

A Cochrane’s Q-test found that frequencies were significantly different across the three time points, $Q(2) = 19.76, p < .001$. McNemar tests showed that there was a significant decrease in frequency of use from baseline to post-training, $\chi^2(1) = 13.88, p < .001$. Although frequency rose slightly from post-training to follow-up, frequency at follow-up was still significantly different from baseline, $\chi^2(1) = 9.37, p = .002$.

Figure 6

Percentage of participants recognising the problem in the vignette as ‘any mental health problem’ other than an eating disorder at each time point (n=73). Changes in frequency were significantly different over time.
Three types of interventions that might be considered helpful for Kelly were assessed by the MHLQ-B: individuals, treatments or activities, and medications. Within these categories, a range of interventions was assessed, including those that the scientific literature suggests are inappropriate or possibly harmful for individuals with eating disorders. Full results for these items are shown in Appendix J. The results for items known to be effective in assisting with eating disorders, and therefore used in the knowledge scales, are shown here.

In order to assess whether changes in knowledge about effective interventions were statistically significant, two scales were constructed and analysed from the interventions data: the *knowledge of effective treatments and professionals scale*, and the *knowledge of informal help-seeking scale*.

**Knowledge of effective treatments and professionals scale**

The mean scale score, at each time point, is shown in Figure 7. A one-way repeated measures ANOVA was conducted. Mauchly’s test indicated that the assumption of sphericity was met, $\chi^2(2) = 2.95, p = .23$, so no corrections to degrees of freedom were made. The results show that the average scale scores were significantly different across time points, $F(2, 144) = 45.16, p < .001, \eta^2 = .39$. Contrasts revealed that both post-training, $F(1, 72) = 92.00, p < .001, \eta^2 = .56$, and follow-up scores, $F(1, 72) = 13.56, p < .001, \eta^2 = .16$, were significantly higher than baseline.
Figure 7

Mean Knowledge of Effective Treatments and Professionals Scale scores at each time point (n=73). Scores increased significantly from baseline (M = 4.74) to post-training (M = 6.36), then fell at follow-up (M = 5.42), but remained significantly higher than baseline levels.

To assess which treatments and professionals were contributing to these effects, a series of Cochran’s $Q$-tests were conducted to compare differences in ‘helpful’ ratings across baseline, post-training and follow-up. Ratings for all items were significantly different across the three time points: antidepressants, $Q(2) = 18.88, p < .001$, CBT, $Q(2) = 42.32, p < .001$, dietitian/nutritionist, $Q(2) = 11.76, p = .003$, ‘getting advice about diet and nutrition’, $Q(2) = 6.70, p = .041$, GPs, $Q(2) = 16.07, p = .001$, psychiatrists, $Q(2) = 22.07, p < .001$, psychologists, $Q(2) = 12.00, p = .002$. Percentage ratings for each scale item are shown in Figure 8.
Figure 8

Percentage of participants rating items from the *Knowledge of Effective Treatments and Professionals Scale*, as either ‘helpful’, ‘neither’ or ‘harmful’, across each time point (n=73). For each item, ‘helpful’ ratings were found to be significantly different across time points.
For each item, two McNemar tests were conducted, one to assess whether frequency of ‘helpful’ ratings changed significantly from baseline to post-training, and one to assess changes from baseline to follow-up. Results are shown in Table 18. For antidepressants, CBT, psychiatrists and psychologists there was a significant increase in ‘helpful’ ratings from baseline to post-training and this difference was maintained at follow-up. For GPs, there was a significant increase from baseline to post-training, however, this change was not maintained at follow-up. For dietitian/nutritionist and for ‘getting advice about diet and nutrition’ no significant change was seen in either comparison.

Table 18

McNemar tests comparing ‘helpful’ ratings of items in the knowledge of effective treatments and professionals scale, across time (n=73).

<table>
<thead>
<tr>
<th>Scale item</th>
<th>Comparison of baseline and post-test</th>
<th>Comparison of baseline and follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \chi^2 )</td>
<td>p</td>
</tr>
<tr>
<td>Antidepressants</td>
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<td>&lt;.001</td>
</tr>
<tr>
<td>CBT</td>
<td>31.24</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Dietitian/Nutritionist</td>
<td>2.4</td>
<td>.118</td>
</tr>
<tr>
<td>‘Getting advice about diet...’</td>
<td>2.77</td>
<td>.09</td>
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<td>&lt;.001</td>
</tr>
<tr>
<td>Psychologists</td>
<td>8.01</td>
<td>.002</td>
</tr>
</tbody>
</table>

For all tests df = 1

Knowledge of informal help-seeking scale

The mean scale score, at each time point, is shown in Figure 9. A one-way repeated measures ANOVA was conducted. Mauchly’s test indicated that the
assumption of sphericity was met, $\chi^2(2) = 5.49, p = .29$, so no corrections to degrees of freedom were made. The results show that the average scale scores were significantly different across time points, $F(2, 144) = 5.08, p = .007, \eta^2 = .07$. Contrasts revealed that post-training scores were significantly higher than baseline, $F(1, 72) = 9.10, p = .004, \eta^2 = .11$, however, follow-up scores were not, $F(1, 72) = 3.08, p = .054, \eta^2 = .05$.

![Figure 9](image)

**Knowledge of Informal Help-seeking Scale scores at each time point (n=73).** Mean scores significantly increased from baseline ($M = 2.78$) to post-training ($M = 3.15$), then fell at follow-up ($M = 2.98$), and were no longer significantly different to baseline levels.

To assess which persons and activities were contributing to these effects, a series of Cochran’s $Q$-tests were conducted to compare differences in ‘helpful’ ratings across baseline, post-training and follow-up. Ratings were only significantly different across the three time points for ‘using a self-help treatment manual’, $Q(2) = 35.23, p < .001$. All others were non-significant: family members, $Q(2) = 2.39, p = .322$, friends, $Q(2) =$
1.78, \( p = .451 \), ‘getting information about problem eating and available services’, \( \chi^2(2) = 0.29, p = .867 \). Percentage ratings for each scale item are shown in Figure 10.

For ‘using a self-help treatment manual’, McNemar tests showed that there was a significant increase in frequency of ‘helpful’ ratings from baseline to post-training, \( \chi^2(1) = 25.29, p = <.001 \); however, this was not maintained at follow-up, \( \chi^2(1) = 1.71, p = .19 \).

% of participants rating from the Knowledge of Informal Help-seeking Scale, as either ‘helpful’, ‘harmful’ or ‘neither’, at each time point (n=73). ‘Helpful’ ratings were found to be significantly different across time points, for the item ‘self help manual’ only.
The mean FAKT total score at each time point is shown in Figure 11. A one-way repeated measures ANOVA was conducted. Mauchly’s test indicated that the assumption of sphericity had been violated, $\chi^2(2) = 11.14$, $p = .004$, therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ($\varepsilon = .89$). The results show that the average FAKT scores were significantly different across time points, $F(1.79, 128.60) = 160.07$, $p < .01$, $\eta^2 = .69$. Contrasts revealed that both post-training, $F(1, 72) = 241.08$, $p < .001$, $\eta^2 = .77$ and follow-up scores, $F(1, 72) = 109.12$, $p < .001$, $\eta^2 = .60$ were significantly higher than baseline.

**Figure 11**

Mean FAKT scores at each time point (n=73). Mean scores increased from baseline ($M = 16.12$) to post-training ($M = 23.20$), then fell at follow-up ($M = 20.36$), but remained significantly higher than baseline levels.
Mental Health First Aid Questions: item 5 - ALGEE

The fifth Mental Health First Aid question was administered asked all participants how they would help someone like Kelly. Responses were scored from 0-12 against the ALGEE action plan. Results are shown in Figure 12. A one-way repeated measures ANOVA was conducted to assess for differences in mean scores across the three time points. Mauchly’s test indicated that the assumption of sphericity had been violated $\chi^2(2) = 11.45, p = .003$, therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ($\varepsilon = .89$). The results show that the average ALGEE scores were significantly different across time points, $F(1.78, 128.17) = 40.77, p < .001, \eta^2 = .36$. Contrasts revealed that post-training scores were significantly different from baseline, $F(1, 72) = 53.27, p < .001, \eta^2 = .42$, but follow-up scores were not, $F(1, 72) = 2.97, p < .089, \eta^2 = .04$.

Figure 12
Mean ALGEE total scores across each time point (n=73). From baseline ($M = 2.2$) scores increased significantly at post-training ($M = 4.4$). However, scores fell at follow-up ($M = 2.6$) and were no longer significantly different from baseline.
Changes in attitudes

Social Distance Scale

The mean Social Distance Scale total score, at each time point, is shown in Figure 13. A one-way repeated measures ANOVA was conducted. Mauchly’s test indicated that the assumption of sphericity had been violated, $\chi^2(2) = 7.53$, $p = 0.02$, therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ($\varepsilon = .93$). The results show that the average SDS scores were not significantly different across time points, $F(1.86, 134.03) = 1.06$, $p = .35$, partial $\eta^2 = .01$.

![Mean Social Distance Scale scores at each time point](image)

Figure 13

Mean Social Distance Scale scores at each time point ($n=73$). Scores increased by just 0.19 points from baseline ($M = 16.04$) to post-training ($M = 16.23$), but fell by 0.66 points at follow-up ($M = 15.57$). Changes in scores were not significant across time.
MHLQ-B: Beliefs about the most helpful interventions

The MHLQ-B also asked participants which of the interventions listed in each category (individuals, treatments or activities, medications) they thought would be the most helpful for Kelly’s problem. The percentage of participants selecting each intervention, across the three time points, is shown in Figure 14.

From the list of individuals, a psychologist was chosen by the majority of participants at all three time points. While the percentage of participants selecting a GP or a psychiatrist rose from baseline to post-training, it dropped again at follow-up. The percentage selecting a friend, a family member or a counsellor all decreased from baseline to post-training, but these then rose at follow-up. The percentage selecting a dietician or nutritionist as most helpful remained constant from baseline to post-training, but increased from post-training to follow-up. In contrast, the percentage selecting a self-help group fell from baseline to post-training, but remained constant from post-training to follow-up. Commercial weight loss programs and social workers were not selected as most helpful by any participant at any time point.

From the list of treatments or activities, CBT had large changes in the number of participants rating it as ‘most helpful’; at baseline only 11% of participants rated it as most helpful, whereas this jumped to 56% at post-training, though fell at follow-up to 23%. An inverse trend appeared for ‘counselling’ whereby 37% of participants selected it as ‘most helpful’ at baseline, but this dropped to 5% at post-training, before returning to 33% at follow-up. Other treatments and activities showed only small variations across the three time points, though most notably, ‘getting information about problem eating and available services’ fell from 14% at baseline to 6% at post-training, only to
Figure 14

Percentage of participants rating interventions (individuals, treatments or activities, medications) as the most helpful for Kelly’s problem, at each time point (n=73).
return to 14% at follow-up. ‘Trying to deal with the problem on her own’ was not selected as ‘most helpful’ by any participant at any time point.

Positivity towards antidepressants was also reflected in the percentage of participants selecting them as the ‘most helpful’, from the list of medications. The percentage of participants selecting antidepressants showed a large increase from 34% at baseline, to 68% at post-training. Although this fell to 51% at follow-up, it was still higher than the baseline level. Inversely, ‘vitamins and minerals’ were selected as ‘most helpful’ by the largest proportion of participants at baseline (47%), however this decreased at post-training (22%), before increasing again at follow-up (40%). Only minor variations were seen in the ratings of ‘tonics and herbal remedies’ and ‘antipsychotics’, across the three conditions.

To assess whether beliefs about the most helpful interventions became more concordant over time with the recommendations in the previously developed guidelines, responses to the three items were dichotomised (into guideline concordant ‘yes’ vs ‘no’) and a Cochran’s $Q$-test performed to assess for significant differences in frequency across the three time points. Results are shown in Figure 15.

For the individuals, the test found that frequencies were not significantly different across the three time points, $Q(2) = 0.58, p = .75$; however for the treatments or activities, $Q(2) = 17.61, p < .001$, and medications, $Q(2) = 31.75, p < .001$, the test found that there were significant differences between time points.

For the treatments or activities, McNemar tests showed that there was a significant increase in ‘most helpful’ ratings concordant with the guidelines, from baseline to post-training, $\chi^2(1) = 12.25, p < .001$. However, the frequency dropped at follow-up and was no longer significantly different from baseline, $\chi^2(1) = 0.70, p = .40$. 
For medications, McNemar tests showed that there was a significant increase in ‘most helpful’ ratings concordant with the guidelines, from baseline to post-training, \( \chi^2(1) = 23.31, p < .001 \); and this change was maintained at follow-up, \( \chi^2(1) = 11.53, p < .001 \).

![Figure 15](image-url)

**Figure 15**

Participant concordance with guidelines recommendations of ‘most helpful’ interventions at each time point (n=73). For individuals, concordance decreased slightly from baseline \((M = 0.85)\) to post training \((M = 0.82)\), then again at follow-up \((M = 0.81)\), however these changes were not significant. For treatments or activities, concordance increased slightly from baseline \((M = 0.49)\) to post training \((M = 0.79)\), however, after falling at follow-up \((M = 0.56)\) it was no longer significantly different to baseline. For medications, concordance increased significantly from baseline \((M = 0.32)\) to post-training \((M = 0.71)\) and these changes were maintained at follow-up \((M = 0.53)\).
**MHLQ-B: Attitudes towards treatment**

Three items in the MHLQ-B assessed participants’ beliefs about treatment and likely prognosis. Responses to the question *How difficult do you think Kelly’s problem would be to treat?* are shown in Figure 16.

Responses changed very little across time, with the majority of participants at all three time points believing that Kelly’s problem would be ‘moderately’ or ‘very’ difficult to treat. Given the ordinal scale, a Friedman’s ANOVA was conducted to assess for any significant changes in ratings over time. This indicated that there were no significant differences, $\chi^2(2) = 2.46, p = .29$.

![Figure 16](image)

**Figure 16**

Percentage of participants rating how difficult they believed Kelly’s problem would be to treat, at each time point (n=73). There were no significant differences in ratings over time.
Responses to the questions If she received treatment, what do you think is most likely to happen to Kelly? and If she received no treatment at all, what do you think is most likely to happen to Kelly? are shown in Figure 17. With reference to receiving treatment; at baseline most participants (58%) believed Kelly was likely to have a ‘full recovery but problems would probably reoccur’, whereas a smaller proportion (14%) believed Kelly was likely to have a ‘full recovery without further problems’. This changed at post-training, with equal proportions believing Kelly would fully recover without problems, and fully recover with problems reoccurring (47% each). At follow-up though, results moved towards baseline levels with only 16% believing Kelly would fully recover without problems, and 67% believing Kelly would fully recover but problems would probably reoccur. No participants, at any time point, indicated that they believed Kelly would have ‘no improvement’ or would ‘get worse’ if she received treatment.

A Friedman’s ANOVA indicated that the differences across the three time points were significant, $\chi^2(2) = 45.35, p < .001$. Wilcoxon signed rank tests revealed that there was a significant change in ratings from baseline to post-training, $T = 20.93, p < .001$; and that this was maintained at follow-up, $T = 11.38, p = .03$.

To assess which responses were contributing to this significant change, a series of Cochran’s Q tests were performed, which indicated ‘full recovery, no further problems’, $Q(2) = 35.47, p < .001$, ‘full recovery but problems will probably recur’, $Q(2) = 7.04, p = .03$, and ‘partial recovery but problems will probably recur’, $Q(2) = 12.70, p = .001$, were all significantly different over time. However, ‘partial recovery’, $Q(2) = 2.3, p = .45$, was not.
For each response option showing a significant difference, two McNemar tests were conducted, one to assess whether ratings changed significantly from baseline to post-training, and one to assess changes from baseline to follow-up. Results are shown in Table 19.

Table 19

McNemar tests comparing frequency of response options for the item: *If she received treatment, what do you think is most likely to happen to Kelly?, across time (n=73).*

<table>
<thead>
<tr>
<th>Scale item</th>
<th>Comparison of baseline and post-test</th>
<th>Comparison of baseline and follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>$p$</td>
</tr>
<tr>
<td>Full recovery</td>
<td>22.04</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Full recovery but problems</td>
<td>1.29</td>
<td>.26</td>
</tr>
<tr>
<td>Partial recovery but problems</td>
<td>8.47</td>
<td>.002</td>
</tr>
</tbody>
</table>

For all tests df = 1

With reference to receiving no treatment at all, the majority of participants, across all three time points, believed that Kelly would get worse. Interestingly, this fell from 84% at baseline, to 75% and post-training and there was a concomitant increase in ratings of ‘no improvement’ from 10% at baseline 18% at post-training. However at follow-up, these changed again, as 74% believed Kelly would get worse, 11% believed there would be no improvement and 14% said there would be partial recovery, but problems were likely to reoccur. A Friedman’s ANOVA indicated that the differences across the three time points were not significant, $\chi^2(2) = 2.27, p = .32$
Figure 17

Percentage of participants rating Kelly’s likely prognosis, with and without treatment, at each time point (n=73). Frequency of response options (‘Full recovery, no further problems’, ‘full recovery but problems will probably recur’, ‘partial recovery’, ‘partial recovery but problems will probably recur’, ‘no improvement’, ‘get worse’) was significantly different over time for ‘prognosis with treatment’, but not for ‘prognosis without treatment’.
MHLQ-B: Attitudes towards bulimia

Participant attitudes were assessed via three items on the MHLQ-B. Responses to the first item *How distressing do you think it would be to have Kelly’s problem?* are shown in Figure 18. The large majority of participants (>90%), across all three time points, believed it would be either ‘very’ or ‘extremely’ distressing to have Kelly’s problem. A minority believed it would be ‘moderately’ distressing. The response options ‘not at all’ and ‘a little’, were not chosen by any participant at any time. The percentage of participants who believed it would be extremely distressing, increased from 38% at baseline to 40% at post-training, then to 44% at follow-up.

Given the ordinal nature of the response scale, a Friedman’s ANOVA was conducted to assess whether ratings were significantly different over time. This found that there were no significant differences, $\chi^2(2) = 1.34, p = .51$.

![Figure 18](image)

**Figure 18**

Percentage of participants rating how distressing it would be to have Kelly’s problem, at each time point (n=73). Frequency of responses was not significantly different over time.
Responses to the item *How sympathetic would you be towards someone with Kelly’s problem?* are shown in Figure 19. The majority of participants, across all three time points, believed they would be ‘very’ or ‘extremely’ sympathetic towards someone with Kelly’s problem. A large minority believed they would be ‘moderately’ sympathetic. At baseline, three percent of participants believed they would be ‘a little’ sympathetic; however, this option was not selected by any participant at post-training or at follow-up. No participant at any time point responded using ‘not at all’.

A Friedman’s ANOVA found that there were significant differences in responses over time, $\chi^2(2) = 12.40, p = .002$. Wilcoxon signed-rank tests showed that there was a significant change in ratings from baseline to post-training, $T = 14.70, p = .001, r = -0.26$. However, a comparison of baseline and follow up revealed no significant change, $T = 15.50, p = .17, r = -0.11$.

![Figure 19](image)

**Figure 19**

Percentage of participants rating how sympathetic they would be towards someone with Kelly’s problem, at each time point (n=73). Frequency of responses were significantly different over time.
To assess which responses were contributing to the significant change between baseline and post-training, a series of McNemar tests were performed, which indicated that the frequency of ‘extremely’ responses increased significantly, $\chi^2(1) = 5.26, p = .019$; but there were no significant changes for ‘very’, $\chi^2(1) = 0.35, p = .56$, or ‘moderately’, $\chi^2(1) = 1.45, p = .23$, responses between baseline and post-training.

Responses to the item *Have you ever thought it might not be too bad to be like Kelly, given that she has been able to lose a lot of weight?* are shown in Figure 20. The majority of participants, across all three time points, reported that they had ‘never’ or ‘rarely’ thought it desirable to be like Kelly. Across all time points, less than 20% reported that they had ‘occasionally’ thought it and less than 8% reported that they had ‘often’ thought it. Only 1% reported that they had ‘always’ thought it, though this occurred at baseline and follow-up, with no participants reporting they had ‘always’ thought it at post-training. A Friedman’s ANOVA revealed that there were no significant differences in ratings across the three time points, $\chi^2(2) = 5.29, p = .07$.

![Figure 20](image.png)

**Figure 20**

Percentage of participants rating how often they have thought that it might not be too bad to be like Kelly, at each time point (n=73). Changes were not significantly different over time.
Changes in behaviour

Level of Contact Report

The mean Level of Contact Report score at baseline and follow up is shown in Figure 21. A dependent sample $t$-test showed that the average scores at baseline ($M = 7.49, SE = 0.37$), were not significantly different to the average scores at follow-up ($M = 7.57, SE = .39$), $t(72) = -.28, p = .783, r = 0.03$.

![Figure 21](image)

**Figure 21**

Mean Level of Contact Report scores at baseline and follow-up (n=73). The Level of Contact Report was not administered at post-training. Scores were not significantly different over time.
Mental Health First Aid Questions

Of the six items asking about knowledge and behaviours relating to mental health first aid, the first four were administered at baseline and follow-up only, while the last two were administered at all three time points.

Results for the first item *In the last 6 months have you had contact with anyone who you think might have an eating disorder?* are shown in Figure 22. At baseline, 60% said ‘yes’, 14% said ‘not sure’ and 26% said ‘no’. At follow-up, 56% said ‘yes’, 14% said ‘not sure’ and 30% said ‘no’. To assess whether there was a significant change in frequency across time, a Wilcoxon signed-rank test was conducted. It showed that there was no significant change in contact from baseline to follow-up, $T = 13.56$, $p = .768$, $r = -0.02$.

![Figure 22](image)

Percentage of participants indicating they had contact with someone they thought might have an eating disorder, in the last 6 months (n=73). Changes were not significantly different over time.
Results for the second item *If yes, how many people have you had contact with?* are shown in Figure 23. At baseline, the modal number of contacts was 1 person \((n = 19)\), and the total number of contacts reported by participants was 78. However at follow-up, the modal number was 2 people \((n = 16)\), and the total number was 97. Twenty-two participants reported an increase in the amount of contact across time. Given that the scale of measurement was not strictly continuous (i.e. a participant could not have contact with 1.5 people) a Wilcoxon signed-rank test was conducted. This showed that there was no significant change in the number of contacts from baseline to follow-up, \(T = 22, p = .377, r = -0.07\).

![Figure 23](image-url)

**Figure 23**

*Frequency of number of contacts with someone who may have an eating disorder, among participants at baseline and at follow-up (n=73). Changes were not significantly different over time.*
Results for the third item *If you have had contact with someone who has an eating disorder, in the last 6 months, have you offered any help?* are shown in Figure 24. At baseline, the modal response was ‘no help’ whereas at follow-up it was ‘a little help’. At baseline, 26% of participants reported providing no help and 16% reported providing a little, whereas this changed to 15% reporting no help and 22% providing some help at follow-up. The proportion of participants reporting some help (16%) or a lot of help (4%) remained constant. A Wilcoxon signed-rank test showed that there was no significant change in level of help offered between baseline and follow-up, $T = 18.77, p = .940, r = -0.006$.

![Figure 24](image)

**Figure 24**

Percentage of participants indicating how much help they had offered to people with eating disorders whom they had contact with in the last 6 months. There were no significant changes over time.
In response to the question *If you offered help, what type of help was it?* 28 participants responded at baseline, whereas 31 responded at follow-up. To assess whether there was a significant change in the type of help offered, participant descriptions were coded into nine different categories, as shown in Table 20. A series of McNemar tests were conducted to assess whether the frequency of each type of help changed between baseline and follow-up. These indicated that there were no significant changes.

**Table 20**

*Counts of type of help offered to someone with an eating disorder in the last 6 months, at each time point, and results of McNemar tests (baseline n=28; follow-up n=31).*

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<th></th>
<th>Baseline</th>
<th>Follow-up</th>
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<th>p-value</th>
</tr>
</thead>
<tbody>
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<td>Asked someone more appropriate than myself</td>
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<td>8</td>
<td>1.78</td>
<td>.18</td>
</tr>
<tr>
<td>Talked to the person</td>
<td>15</td>
<td>15</td>
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<td>Offered general support</td>
<td>6</td>
<td>3</td>
<td>0.57</td>
<td>.45</td>
</tr>
<tr>
<td>Offered information about illness/available services</td>
<td>3</td>
<td>5</td>
<td>0.12</td>
<td>.72</td>
</tr>
<tr>
<td>Encouraged/assist with professional help</td>
<td>4</td>
<td>9</td>
<td>1.45</td>
<td>.23</td>
</tr>
<tr>
<td>Encouraged self-help</td>
<td>1</td>
<td>4</td>
<td>0.80</td>
<td>.38</td>
</tr>
<tr>
<td>Offered practical help</td>
<td>6</td>
<td>2</td>
<td>1.13</td>
<td>.29</td>
</tr>
<tr>
<td>Offered emotional support</td>
<td>11</td>
<td>8</td>
<td>0.27</td>
<td>.61</td>
</tr>
<tr>
<td>Risk assessment/monitoring</td>
<td>1</td>
<td>4</td>
<td>0.80</td>
<td>.38</td>
</tr>
</tbody>
</table>

For all tests df = 1
Results for the final Mental Health First Aid question regarding participant confidence in providing help are shown in Figure 25. Given the ordinal nature of the scale, a Friedman’s ANOVA was conducted. This revealed that confidence ratings were significantly different across time points, $\chi^2(2) = 74.59, p < .001$. Wilcoxon signed rank tests indicated that both post-training, $T = 15, p < .001, r = -0.55$, and follow-up scores, $T = 20.09, p < .001, r = 0.37$, were significantly higher than baseline.

![Mean confidence scores across time points (n=73). The mean confidence score increased from baseline ($M = 2.2$) to post-training ($M = 3.5$). Despite a fall from post-training to follow-up ($M = 2.7$) scores remained significantly higher than baseline.](image-url)
Mental Health Service Use

To assess whether participant help-seeking changed after the training, three items were administered at baseline and again at follow up. At baseline, seven participants (10%) indicated that they had received treatment or advice from a professional, specifically for problems with eating. Of those participants, three mentioned seeing a dietitian or nutritionist, two a GP and one participant each mentioned the following: a counselor, a psychologist, an alternative therapist, a specialist eating disorder service and a gynaecologist for fertility problems relating to their disorder. Twenty-five participants (34%) indicated that they had previously received treatment or advice from a professional, specifically for other emotional problems, such as being anxious or depressed. Of these participants, 12 mentioned seeing a counselor, 11 a psychologist, six a GP, two a psychiatrist and one a dietitian or nutritionist. Twelve participants indicated they had received treatment or advice from a professional, specifically for problems with weight, such as trying to lose or gain weight. Of those, seven mentioned seeing a dietitian or nutritionist, two mentioned seeing a personal trainer, and one each mentioned: GP, psychologist, psychiatrist, and commercial weight loss centre. One participant noted that they were seeking help to gain weight.

At follow-up, again seven participants (10%) indicated that they had received treatment for a problem with eating. Two of these participants had not mentioned seeking treatment for a problem with eating at baseline. Both participants mentioned seeing a psychologist and one mentioned a GP, nutritionist and psychiatrist. Twenty-eight participants mentioned having sought treatment for a mental health problem other than an eating disorder, at follow-up. Seven of those had not mentioned seeking treatment at baseline. Three of these participants mentioned seeing a psychologist, two a
counselor, and one each of: a GP, social worker and psychiatrist. Finally, 10 participants indicated they had ever sought treatment for a problem with weight at follow-up, one of whom did not mention seeking treatment at baseline.

First Aid Experiences

To assess whether participants had been presented with a situation where it may have been appropriate to provide mental health first aid, the first questionnaire item asked Since completing the ‘Mental Health First Aid Training Course for Eating Disorders’ have you come across someone you thought might be developing or experiencing an eating disorder?. In response, 41% (n = 30) of participants replied ‘yes’. A series of questions followed about whether the participant had been able to assist the person and how they felt the intervention had gone. Those who responded ‘no’ (n = 43, 59%) were asked a series of open-ended questions about what they would do in the future if a situation arose.

Participants who did not experience a first aid situation (n = 43)

When asked Is this what you would have expected, or is it somewhat surprising not to have come across such a situation?, 17 participants indicated that they were surprised, whereas another 17 participants responded that they had expected not to encounter someone with an eating disorder. Eight participants mentioned that they may have been in contact with someone with an eating disorder, but were not aware of the illness because their friendship was not intimate enough to detect symptoms (e.g. I believe there is likely to be someone around me who would have a problem like this, but most likely not someone close enough for me to notice the subtle changes). Furthermore, three participants mentioned that prior to the course they had contact with an individual
with an eating disorder and that this contact has remained unchanged in the last six months.

Next, participants were asked In the future, if you were to come across someone who you believed was experiencing an eating disorder, how well prepared would you feel to deal with the situation?. In response, 33 participants indicated that they felt prepared, the majority indicating that they were ‘well’ or ‘very well’ prepared. One participant noted that they did not feel at all prepared. Nine participants mentioned that they felt more prepared as a result of the training. Five participants mentioned feeling as though they had all the information and knowledge required to assist, but remained uneasy about the prospect of approaching someone about their concerns (e.g. I would feel quite prepared, but there is no rule that says how every individual is going to act when they have an eating disorder, so there will always be an element of feeling unprepared).

Finally, participants were asked How has attending the 'Mental Health First Aid Training Course for Eating Disorders' changed how you relate to or feel about people who experience eating disorders?. Fifteen reported feeling as though they knew more about eating disorders. Fourteen reported knowing more about how to assist someone, or feeling more confident in providing assistance. Interestingly, 14 participants reported feeling that as a result of the training they felt more empathy towards those with eating disorders and had a greater understanding of the distress experienced (e.g. It has given me cause to have a little more sympathy and compassion for people with [these] disorders. I used to view it a little as a sign of weakness, but really it is more than that). Finally, eight participants mentioned that it had not changed their knowledge or feelings
towards people with eating disorders, two of whom qualified their response by indicating that they had a high level of knowledge and experience prior to the training.

Participants who experienced a first aid situation (n = 30)

Among those who had contact with someone with a suspected eating disorder, 70% (n = 21) were students and 30% (n = 8) were staff. Of the 69 students in the sample, 30% had contact with someone with a suspected eating disorder, and of the 21 staff in the sample, 38% had. A chi-square analysis found no significant difference between the proportion of students and staff who had encountered a first aid situation $\chi^2(1) = .001, p = .98$.

To assess the nature of the first aid experience, participants were first asked *Could you tell us something about the situation(s) and the problem(s) you believed the person was experiencing?* In response, 15 participants described that they had witnessed a change in eating habits, with a particular focus on intake restriction (e.g. *Only eating very small portions of very healthy foods, such as salad*). Binge eating was mentioned by two participants. Eleven participants mentioned witnessing a change in exercise, or a belief that exercise was excessive (e.g. *Has to exercise every day*). Vomiting was mentioned once. Seventeen participants mentioned a change in weight, however all comments were about weight loss and none mentioned witnessing fluctuations in weight or weight gain (e.g. *Noticed massive weight loss*).

Participants were then asked *Did you try to assist the person you thought might be developing or experiencing an eating disorder?*. Those who responded ‘yes’ (n = 20) were then given a series of questions about what assistance had been given. Those who responded ‘no’ (n = 10) were asked about the circumstances leading to assistance not being provided.
No assistance given (n = 10)

In response to the question *What was the reason(s) that you were not able to assist that person?*, five participants mentioned that they felt they were not close enough to the person to provide the first aid and that there were other individuals who were more appropriate, because of an existing relationship. Four participants mentioned that the person was already receiving adequate care from others and one mentioned that their offer of assistance had been refused.

Assistance provided (n = 20)

In response to the item *Can you give us an example of something you did to assist the person?*, it was expected that participants would list some or all of the actions in the ALGEE action plan (see Table 3). Given that it is not necessary to complete the entire action plan, depending on the situation or the person’s problem, it was not expected that all participants would list all actions. However, the first two; *A – Approach the person, assess and assist* and *L - Listen non-judgmentally*; are primary actions, which should be completed each time mental health first aid is provided. Eleven participants mentioned approaching the person and having a discussion about their concerns. A further seven participants mentioned that they had discussed their concerns with an individual who would be a more appropriate person than themselves to provide first aid. This was most often a peer who were seen to have a closer friendship (e.g. *I brought the problem to the attention of her closer friends, and asked them to keep an eye on her [as] I'm not close enough for either of us to be comfortable with me talking to her*) or an authority figure within the residential college who had a duty of care (e.g. *Informed the head of pastoral care at my college of the situation*). Two participants mentioned that they had offered information and resources to the person about eating disorders, six mentioned
encouraging the person to seek professional help and five mentioned encouraging other supports (e.g. *I tried spending more time with her, encouraged her to come to meals with me*).

Participants were then asked to respond to the question *When assisting the person did you use the information provided in the 'Mental Health First Aid Training Course for Eating Disorders'*? using the forced-choice options. Fourteen responded ‘yes’, none ‘no’ and six ‘not sure’. The next item *How successful do you think you were in assisting the person?* used a 5-point Likert scale, listing options from ‘very successful’ to ‘very unsuccessful’. However, only two of the response options were used by participants; ‘successful’ (*n* = 9) and ‘neither successful nor unsuccessful’ (*n* = 11). This item was followed by an open response question *Would you like to comment on what happened?* to which 13 participants provided responses. Two mentioned they were unaware of the outcome because they were not the person providing the first aid. Three mentioned that the person had received professional help, three that the person had started to recover, and three that they felt the person had started to make some changes but were unsure how much recovery had progressed. In addition to questions about success, participants were asked *Do you think the information in the 'Mental Health First Aid Training Course for Eating Disorders' contributed to the level of success you had in assisting the person?*. In response, six participants said ‘very much’, 12 said ‘a little’, and one each said ‘not sure’ and ‘not really’.

When asked *When assisting the person, did you do anything differently from what you would have done before attending the 'Mental Health First Aid Training Course for Eating Disorders'?*, 11 participants responded ‘yes’, four responded ‘no’ and five responded ‘not sure’. The 11 who responded ‘yes’ provided details about how they had
changed. Of these, seven mentioned that they changed the way they approached the person (e.g. *I changed how, when, and where I approached the individual*) or that before they wouldn’t have approached the person at all (e.g. *I approached them, which is something I might not have done without the knowledge of the first aid training*). Four participants noted that because they were more knowledgeable about eating disorders, they noticed more symptoms. Three noted that they felt comfortable suggesting appropriate professional help, and two said they were able to be more empathic and supportive of the person than before.

Participants were also asked if they had encouraged the person to seek professional help. A large majority (*n = 10*) said that they had suggested it, three said they had not, four said they were ‘not sure’ and three mentioned that the person they were assisting was already seek appropriate help. When asked if the person had sought help as a result of their suggestion, seven participants responded ‘yes’, seven said ‘not sure’, and six ‘not applicable’.

**Assistance with other mental health problems**

To assess whether the information particular to eating disorders provided in the training, generalised to providing assistance to individuals with other mental health problems, the First Aid Experiences Questionnaire also asked *Since completing the ‘Mental Health First Aid Training Course for Eating Disorders’ have you tried to assist someone you thought might be developing or experiencing a mental illness or a mental health crisis, other than an eating disorder?*. Twenty-one participants (29%) said ‘yes’. Among those, 62% (*n = 13*) were students and 38% (*n = 8*) were staff. Of the 69 students in the sample, 19% had contact with someone with a suspected mental health problem, and of the 21 staff in the sample, 38% had. A chi-square analysis found no
significant difference between the proportion of students and staff who had encountered a possible first aid situation $\chi^2(1) = 1.7, p = .19$. Thirteen (62%) of the participants who assisted someone with a suspected mental health problem had also assisted someone with a suspected eating disorder.

When asked what problem or crisis participants thought the person they were assisting might have been experiencing, 10 said depression, four said anxiety and depression, four mentioned recovering from grief or a traumatic experience and two mentioned suicide or self-harm. Schizophrenia and substance abuse were each mentioned once.

Participants were also asked to provide examples of how they were able to assist. Fifteen mentioned talking to the person, assessing their wellbeing and level of risk, or assisting them to recover or manage (e.g. *Listened for a while, made certain that she no longer felt any suicidal thoughts, and offered any help I could give regarding the problems she was experiencing*). Nine participants mentioned trying to reassure the person and provide emotional support (e.g. *I tried to take the stigma off the problem, and 'normalise' it in a sense but still emphasise that it's serious and it's good to seek help - she was in the process of seeking help for it so I just reaffirmed this*). Suggesting that the person seek professional help was also common among participants’ strategies for providing assistance, as nine also mentioned this. In addition, eight participants mentioned trying to encourage the person to seek out other supports (e.g. *Asked them what things I could do around the house that would support them feeling better. We also began to make plans to do social outings to look forward to*).

In response to the question *When assisting the person did you use the information provided in the 'Mental Health First Aid Training Course for Eating Disorders'?* seven
participants responded ‘yes’, nine responded ‘no’ and five ‘not sure’. In response to the question *How successful do you think you were in assisting the person?*, three participants responded ‘very successful’, 14 responded ‘successful’, three responded ‘neither’ and one ‘not successful’. As was the case with assisting an individual with an eating disorder, when asked to comment on how they felt about the success of their assistance, participants frequently mentioned the ongoing nature of the person’s recovery ($n = 7$). Four participants also mentioned how they believed the person had felt supported by their intervention (e.g. *She really trusted me and my opinions and I think she felt less alone knowing I was there for her*) and an additional four mentioned that the person was seeking ongoing professional help.

In response to the question *When assisting the person, did you do anything differently from what you would have done before attending the 'Mental Health First Aid Training Course for Eating Disorders'?*, four participants responded ‘yes’, 10 responded ‘no’ and seven responded ‘not sure’. Those who responded ‘yes’ provided details about how they had changed. Of these, three mentioned that they assessed for level of suicide risk where they would not have done so before (e.g. *I flat-out asked this person if they had considered suicide. I did not simply take control of the situation, but tried to indicate to the person that their issues were serious and concerned me greatly*). In addition, three participants noted that they felt the training had helped them to regulate their own response to the person’s situation in a more helpful and supportive way (e.g. *I assessed how serious the situation was and made sure not to freak out or become overly aware and paranoid about possibly symptomatic behaviours*). One participant mentioned that although they had not done anything differently to before, the training reassured them that they had previously been doing the ‘right’ things.
When asked if they had encouraged the person to seek professional help, 11 said ‘yes’, one said ‘no’ and nine responded that the person they were assisting was already seeking appropriate help. When asked if the person had sought help as a result of their suggestion, nine participants responded ‘yes’, four said ‘no’, one ‘not sure’, and seven ‘not applicable’.

**Changes in mental health status**

**EDE-Q**

The mean EDE-Q total score at baseline and at follow up are shown in Figure 26. A dependent sample *t*-test showed that the average scores at follow-up (*M* = 1.07, *SE* = 0.12), *(72) = 2.27, *p* = .026, *r* = 0.26, were significantly lower than at baseline (*M* = 1.23, *SE* = 0.11).

![Figure 26](image)

**Figure 26**

Mean EDE-Q total scores at baseline and follow-up (n=73). EDE-Q was not administered at post-training. Scores were significantly different over time.
The mean K10 total score at baseline and follow up is shown in Figure 27. A dependent sample $t$-test was showed that the average score at baseline ($M = 18.07, SE = 0.55$), was not significantly from the average score at follow-up ($M = 17.20, SE = .59$), $t(72) = 1.53, p = .129, r = 0.18$.

![Figure 27](image)

**Figure 27**

Mean K10 total scores at baseline and follow-up (n=73). K10 was not administered at post-training. Scores were not significantly different over time.

**Participant Feedback**

At the very end of the follow-up questionnaire, participants were asked *Is there anything else that you would like to say about the 'Mental Health First Aid Training Course for Eating Disorders' and its value to you?*. Fourty-four participants did not provide a response. Of the 29 who did, 16 indicated that they felt the training had been useful or valuable to them (e.g. *Found session most informative and useful. Gave me*...
Five participants mentioned that they had found the training enjoyable or interesting (e.g. *I really enjoyed the whole process, I found it informative and important, especially for my age group, and being a female*). Two participants mentioned that they were grateful for the training materials to refer back to, while a further two recommended the training be presented over two sessions. Five participants thanked the researcher for providing a free and ‘valuable’ course (e.g. *I would just like to thank you for helping me understand people with eating disorders*).

**Discussion**

The aim of the current study was to examine whether a training intervention on mental health first aid for eating disorders is effective in changing knowledge, attitudes and behaviours towards people with eating disorders. This study evaluated whether training in mental health first aid for eating disorders was effective in increasing mental health literacy, decreasing stigmatising attitudes towards people with eating disorders, increasing the provision of first aid behaviours, promoting help-seeking behaviours in those who attend and among those who are recipients of first aid. It involved delivering a 4-hour single session training program to young adults and welfare staff in contact with young people at risk of developing an eating disorder, and evaluated the effects of the intervention via a series of self-report questionnaires, provided at baseline, post-training and six months follow-up. The evaluation also gathered information about first aid experiences, changes in health service use or mental health status.

**Changes in knowledge**
Change in knowledge was assessed using an item about eating disorder symptoms, the MHLQ-B, the FAKT and one question about the Mental Health First Aid action plan. The knowledge of eating disorder symptoms item produced an odd result, in that there was a trend for knowledge scores to decrease from post-training to follow-up. However, changes in scores across time were non-significant. It is possible that this finding is the result of participants lodging less detailed or specific answers across time, as the follow-up questionnaire was sent to the majority of participants between October and November, which marks the exam period and the end of the academic year. It is therefore conceivable that participants were too busy during the follow-up period to respond with the same amount of detail to the open-ended items as they did at baseline or post-training. It is also possible that the training failed to produce a significant increase in knowledge scores over time because there was not enough emphasis placed on eating disorder specific signs and symptoms throughout the curriculum. In fact, the training emphasises the importance of recognising the development of non-specific signs of distress, as this is the best opportunity to provide timely mental health first aid. As such, participants were taught to look for a change in “a person’s thinking, emotional state and behaviour, which disrupts the ability to work or carry out other daily activities and engage in satisfying personal relationships” (Kitchener, et al., 2010, p. 4), which is how the MHFA program defines the onset of a mental health problem.

Future evaluations may therefore benefit from an item designed to measure a change in knowledge regarding the most appropriate time to provide mental health first aid, rather than specific knowledge relating to the wide range of eating disorder signs and symptoms.
Unlike knowledge of signs and symptoms, accurate recognition of the problem in the MHLQ-B vignette as ‘bulimia nervosa’ increased significantly immediately after the training. Furthermore, recognition of the problem as any eating disorder also increased, and this change was sustained over time. Importantly, this effect of increased recognition, was not generalised to any mental health problem; participants were not more likely to label the problem in the vignette with general terms relating to mental ill-health at follow-up, indicating that the improved recognition was specific to eating disorders, and in particular to bulimia. It is interesting that participants’ increased recognition of the problem as any eating disorder was more robust than the specific recognition of the problem as bulimia. Given that the training encourages participants to look for changes in eating and exercise behaviours that are interfering with function, rather than encouraging participants to look for indicators of diagnostic categories, this result is perhaps more desirable than having a sustained increase in the specific recognition of the problem as bulimia.

The *Knowledge of effective treatments and professionals* scale in the MHLQ-B showed that participants’ knowledge of effective treatments for eating disorders also significantly improved over time. It is encouraging that this change was associated with a medium effect size. Post-hoc tests revealed that increases in knowledge occurred across all items of the scale; ‘helpful’ ratings for each of the professionals and interventions known to be effective for eating disorders significantly improved from baseline to post-training and this was maintained over the follow-up period. Changes were particularly strong for knowledge about the effectiveness of antidepressants, CBT, psychiatrists and psychologists. These results therefore provide preliminary support for the impact MFHA training can have on mental health literacy for eating disorders.
Unfortunately this was not true for the *Knowledge of informal help-seeking scale*. While it was found that total scale scores significantly improved after the training, these improvements were not maintained at follow-up. Post hoc analyses revealed that the only item within the scale showing significant improvement after the training was the use of a self-help manual. This result, however, is perhaps not unexpected. While the treatment literature recognises the importance of friends and family in the help-seeking and recovery process, it is also apparent that the social network can have a negative influence on the development of mental illness and barriers to care (Roberts, 1988; Taylor, et al., 2006). It is therefore true that the effectiveness of individuals in facilitating help-seeking and recovery will depend on their level of knowledge, skill and empathy. As this concept was discussed as part of the training, it is perhaps not a surprise that ‘helpful’ ratings did not change across time. It is also important to acknowledge that this study is the first time the *Knowledge of informal help-seeking scale* had been implemented. Given its construction from just 4-items, further testing of its psychometric properties would further elucidate its utility in future evaluations of MHFA training. Furthermore, future evaluations may benefit from an examination of changes to inappropriate informal help-seeking, rather than a narrow focus on changes in the small number of appropriate strategies.

The FAKT showed that participant knowledge of first aid skills improved significantly after the training and, despite a drop-off in the follow-up period, this improvement was maintained at follow-up. Furthermore, this increase was associated with a medium-to-large effect size, indicating that the training was associated with a substantial gain in knowledge, which was sustained over time. As this is the first time the FAKT instrument has been implemented, the psychometric properties are not well
known. It is therefore possible that increases from baseline to post-training were the result of re-test effects. However, given that there was a drop in knowledge from post-training to follow-up, it appears that each re-testing event does not necessarily result in ongoing improvement over time.

Responses to the Mental Health First Aid item, which asked participants how they would help ‘someone like Kelly’, indicated that the training was associated with a significant increase in knowledge of the appropriate actions a person should take when providing a first aid intervention, as outlined by the MHFA action plan. However, this change was not sustained over time. There are two possible explanations for this result. One is that, given the open-ended response format for this item, participants provided less detailed responses at follow-up, due to their academic time constraints, and hence scored more poorly than at post-training. Another plausible explanation is that the training was insufficient in duration to produce a lasting effect. It is perhaps not unsurprising that participants could not remember these five specific actions, six months after receiving a 4-hour intervention. Furthermore, given that a previous evaluation of the full MHFA training program found an increase in knowledge of the action plan, which was maintained at six month follow-up (Kelly, et al., In press), it is likely that had the current training involved more time to discuss and role-play the action plan, retention of information would have been maintained over time.

Overall, results for the items assessing knowledge showed that the training was associated with an immediate and lasting improvement in eating disorder problem recognition, knowledge of effective treatments, and consensus-based first aid strategies. Although results showed that there were increases in knowledge for informal help-
seeking strategies and the MHFA action plan, these changes were not maintained over time, perhaps indicating that the intervention was too brief to produce lasting effects.

**Changes in attitudes**

Attitudes towards people with bulimia were assessed using the Social Distance Scale and three items from the MHLQ-B. Beliefs about the helpfulness of interventions and attitudes towards treatment were assessed using a further six items from the MHLQ-B.

Scores on the Social Distance Scale remained unchanged after the training and during the follow-up period, compared to baseline. Interestingly, in a review performed by Jorm and Oh (2009), interventions aimed at reducing stigmatising attitudes of similar length to the current training, were found to have similar results whereby no significant changes in the total score were found over time. It therefore appears that the current intervention may have been too short and required more direct contact with people affected by eating disorders, to achieve the desired reduction in social distance. Jorm and colleagues have postulated that scales assessing stigmatising attitudes are subject to a re-test effect, whereby participant scores increase over time as their answers become less affected by social desirability and more frank in nature (Jorm, Kitchener, Fischer, et al., 2010). Any intervention aimed at decreasing stigma must therefore overcome an inherent trend towards scores increasing over time. It is therefore possible that any small decreases in stigmatising attitudes resulting from the training were overshadowed by the trend for increasing scores across re-test occasions (Jorm, Kitchener, Fischer, et al., 2010). While disappointing that the intervention did not achieve a decrease in stigma scores, it is at least encouraging that they remained stable over time. Furthermore, it is unfortunate that there is no prior research investigating social distance
towards individuals with bulimia, with which the mean scores in the current study can be compared. In addition, due to the novel inclusion of a neutral category, the scores from the current study cannot be directly compared to previous research investigating social distance towards individuals with different mental illnesses, such as schizophrenia. It is therefore hoped that future investigations will be able to establish social distance norms against which this sample could be compared.

At baseline, participant beliefs about the most helpful interventions were largely concordant with the previously developed guidelines. This was shown through the absence of participants selecting inappropriate interventions such as ‘trying to deal with the problem on her own’ or ‘commercial weight loss programs’, as ‘most helpful’. Furthermore, effective interventions such as antidepressants and psychologists were selected by around one third of the sample. Even though results were positive at baseline, analyses still indicated that the training was associated with significant changes in beliefs about the most helpful interventions. In particular, beliefs about treatments or activities, and medications, became more concordant with the guidelines overtime, the latter of which was maintained at follow-up.

Three items on the MHLQ-B assessed attitudes towards treatment. These found that participants generally believed bulimia is difficult to treat and that even with treatment, problems would most likely reoccur in the future. Despite this, all participants believed Kelly’s prognosis would be better with treatment than without. Because the focus of the training was on decreasing barriers to help-seeking and increasing knowledge of effective treatments, it was expected that the greatest change would occur in beliefs about Kelly’s prognosis with treatment, when compared to the other items. Indeed, the training was associated with a significant shift in beliefs about
prognosis with treatment. In particular, after the training significantly more participants believed that Kelly would experience full recovery with no further problems, if she received treatment, and significantly less participants believed that Kelly would experience partial recovery but with problems recurring in the future. However, as was found with other measures administered at follow-up, these changes were not sustained over time. In contrast to the changes in beliefs about prognosis with treatment, beliefs about prognosis without treatment did not change over time. This is expected however, given that at baseline the majority of participants believed Kelly would either get worse or at least experience no improvement without treatment, and that the training emphasises the importance of early intervention and the consequences of delayed treatment seeking. The training was also associated with no changes in beliefs about how difficult treatment would be. This result may reflect attitudes about the difficult interpersonal nature of psychotherapy, rather than negative attitudes about the skills and abilities of treating clinicians, and is not unexpected given that this information was not a primary focus of the intervention.

The MHLQ-B item assessing participant ratings of how distressing they believed Kelly’s problem would be, found that there were no significant differences associated with the training, despite some small fluctuations in ratings. Two plausible explanations for this result can be considered. First, it is possible that there was an insufficient ‘dosing’ effect, whereby the intervention was too short to provide lasting effects over time. If this were true, a longer intervention or booster session should produce the desired result. The second possibility is that participants were at ceiling when first measured at baseline. Given the high proportion of participants who rated believing they would find Kelly’s problem either ‘very’ or ‘extremely’ distressing, it is possible that
the intervention was unable to produce any further increase. As a point of comparison, a community-based survey of adolescent girls’ mental health literacy for eating disorders found that most respondents believed that it would be ‘very’ (40.0%) or ‘extremely’ distressing (45.0%) to have a problem like Kelly’s, indicating that there was little need for an intervention to educate participants about the distressing nature of the condition (Mond & Marks, 2007).

The MHLQ-B also assessed participants’ level of sympathy towards someone like Kelly. Results found that there were significant changes associated with the training, such that more participants indicated that they would be ‘extremely’ sympathetic towards someone with Kelly’s problem immediately after the training and less indicated that they would be either ‘very’ or ‘moderately’ sympathetic. However, these changes were not maintained over time.

The desirability of bulimic symptoms was also assessed with a MHLQ-B item, which found that the majority of participants reported that they had ‘never’ or ‘rarely’ thought that ‘it might not be too bad to be like Kelly given that she has been able to lose a lot of weight’. This finding is in contrast to previous evaluations of MHLQ-B, which have found much higher levels of desirability. The current finding may be an artefact of older adults and male participants being included in the sample, rather than a non-representative sample per se. That the desirability ratings remained stable over time and showed no significant change after the training, can be explained in two ways. First it is possible that the training had no effect on how desirable participants found bulimic symptoms. However, it is also possible that there was a ceiling effect. Given that it is expected the intervention would have the strongest effect among participants who
considered bulimia desirable, though most did not indicate any desirability for bulimic symptoms at baseline, the beliefs of the current sample left little room for improvement.

Taken together, the MHLQ-B items assessing attitudes towards bulimia indicate that the sample at baseline were already very empathic. Furthermore, without comparable data on social distance scores for bulimia, it is unknown how open the current sample were to engaging with someone with the disorder. It is therefore difficult to infer from these results whether the intervention was effective in changing attitudes about eating disorders. It is possible that in a sample with a lower level of empathic attitudes at baseline, and a training protocol allowing more time to discuss the lived experience of eating disorders, the intervention would have resulted in significant changes. However, it remains a welcome finding that members of the community, without any or very little prior training in eating disorders or mental health first aid, already express empathic attitudes towards individuals with eating disorders.

**Changes in behaviour**

Different behaviours were measured with a range of instruments, including the Level of Contact Report, Mental Health First Aid questions, the First Aid Experiences Questionnaire and Mental Health Service Use questions. The amount of contact participants had with individuals with eating disorders was measured using the Level of Contact Report and two Mental Health First Aid questions. Across all measures, there were no significant differences found between the amount of contact with individuals with eating disorders before the training and the amount of contact after the training. Although the total number of contacts increased from 78 individuals with an eating disorder at baseline, to 97 individuals at follow-up, this difference was not statistically significant. One possible explanation for this finding is that the environment in which
the participants studied, worked and resided, was not amenable to producing a change in the amount of contact a participant may experience. For example, the large majority of students and staff undertake residence at a college for an academic year, beginning at the start of March and ending in late November. Between these months, there is very little change in the composition of staff or students in the colleges. In the current study, the baseline measurement, training and follow-up period all fell within the 2010 academic year. Furthermore, because residential colleges are an environment where individuals live in very close contact with one another, and the welfare of students is closely monitored by pastoral care teams, it is possible that the majority of individuals with eating disorders, who were present within the college system, were already identified at baseline and this number could not be significantly improved upon after the training and during the follow-up period. Another possible explanation for the non-significant change in contact is that the training intervention had no effect on participant behaviour toward those with eating disorders. However, given that there was a significant increase in the ability to accurately recognise an eating disorder, that knowledge of effective first aid strategies significantly increased, and there was no increase in social distance, it appears unlikely that the intervention would not influence contact to some degree. A second and longer follow-up period, crossing over more than one academic year, may elucidate any effect of the college environment on the level of contact found among participants. However, it should be noted that some previous evaluations of MHFA training have also recorded no change in the level of contact with those with mental illness (Jorm, et al., 2004; Kitchener & Jorm, 2002b).

One Mental Health First Aid item was designed to assess change in the amount of help provided to those with eating disorders. No significant increase was found after the
training. However, results suggest that the proportion who responded ‘no help’ may have significantly decreased over time, and the proportion who responded ‘a little help’ may have significantly increased, but because the omnibus test was not significant (most likely due to the lack of change across all other response options) further significance testing was not undertaken. Some previous MHFA training evaluations have also failed to find an increase in amount of help provided. Of the four studies that have used the same method of evaluating help provided, two studies found no significant differences between baseline and follow-up (Jorm, Kitchener, Sawyer, et al., 2010; Kitchener & Jorm, 2004).

The current study also found no change in the type of help provided by participants to people with eating disorders. Given the relatively small number of participants who reported providing first aid, it is possible that there was inadequate power to detect an effect. This postulate is supported by the finding that the majority of participants who provided first aid reported on the First Aid Experiences Questionnaire, that they had done things differently to before they received the training. Furthermore, the training was associated with a significant increase in participant confidence in providing first aid and this effect was maintained at follow-up. In combination then, these results suggest that if a second and longer follow-up testing was administered, which would allow participants more time to be in contact with and provide assistance to individuals with eating disorders, the existence of any significant increase associated with the training would be clarified.

In response to the questions regarding participant history of mental health service use, it appeared as though there were a number of participants who mentioned seeking help for the first time at follow-up. Unfortunately however, the number of participants
who sought help after training cannot be quantified from these data. Because the question to participants stated *Have you ever sought treatment...* both at baseline and at follow-up, it is possible that some participants who received treatment prior to training did not disclose this history at baseline, but did disclose at follow-up. Therefore, novel mentions of treatment at follow-up cannot be taken as a direct indication of a new treatment episode. Furthermore, it is also possible that participants with a prior treatment history went on to seek treatment after training, yet their treatment status would remain unchanged in the follow-up period. It is recommended that future implementation of this instrument be modified for specific use in a repeated measures design, such that the follow-up questions ask for treatment seeking in the follow-up time frame only. It did not appear as though the type of help participants had sought was different after the training.

The First Aid Experiences Questionnaire was designed to gather information about the nature of first aid interventions being provided by participants. Responses to these questions were largely positive, as many indicated that the training allowed them to feel more knowledgeable, confident and better prepared to recognise and provide assistance to someone developing or experiencing an eating disorder. Although previous quantitative measures found no significant increases in the amount of help provided, the open-ended information gathered by this instrument suggests that participants approached someone they were concerned about with more empathy and patience than before, as a result of the training. Furthermore, the majority of those who had not provided first aid indicated that the training had impacted on the way they viewed eating disorders as mental illnesses worthy of care, understanding and effective treatment. Interestingly, it appeared that the training generalised to assisting individuals with other
mental health problems, as an equal proportion of participants reported providing first aid to individuals with mental illnesses other than eating disorders.

Participants who had provided first aid reported feeling reasonably successful in their intervention, however, many went on to explain that the unresolved nature of the person’s illness contributed to their sense that their intervention was not a complete success. Given that this finding reiterates that of the earlier evaluation of guidelines being downloaded from the internet, future MHFA training would do well to include a discussion of what ‘successful’ first aid might look like and how participants should not expect immediate or necessarily complete recovery, as a result of providing assistance and facilitating appropriate treatment seeking. Interestingly, a much larger proportion of participants who reported assisting someone with another mental health problem reported feeling that their first aid intervention was successful. The ambivalence about success may therefore be particular to assisting in the case of an eating disorder.

Importantly, the First Aid Experiences Questionnaire provided no reports of adverse experiences associated with an attempted first aid intervention. Conversely, participants indicated that as a result of their suggestion and assistance, seven individuals had sought help for their suspected eating disorder, and an additional three were better supported whilst already receiving care. Furthermore, three participants mentioned assessing for suicide risk where they wouldn’t have done so before the training. While statistical inferences from these data are not possible, it is encouraging that these responses indicate the training was associated with a higher level of effective assistance, and ultimately, more appropriate help-seeking.

In sum, the findings from instruments measuring behavior change suggest that there is some limited evidence for a change in first aid behaviours and an increase in
appropriate help-seeking, albeit among a small number of participants. Many of the findings in the current research confer with those of previous MHFA evaluations employing a six month follow-up period, which suggests that a second and longer follow-up period, for example at 12 months after training, might allow for an increase in the size of the sample providing assistance, and thereby an increase in the power to detect any statistical effect on behaviour change associated with the training.

Changes in mental health

The EDE-Q and K10 were implemented to assess any changes in the mental health of participants. Given previous research evaluating preventive interventions for eating disorders has found that providing information about eating disorder symptoms can lead to an increase in eating pathology, the EDE-Q was used in the current study to assess for any negative impact on participants. Despite a normative level of eating pathology among the sample at baseline, global EDE-Q scores were found to be significantly lower at follow-up. This change, however, was associated with a small effect size. There are two possible explanations for the current outcome. The first is that the intervention had a positive effect on eating pathology. The second is that the result is due to a re-test effect, whereby scores improved (decreased) with each testing occasion, as has been shown to be possible with psychiatric instruments designed to assess negative self-characteristics (Jorm, Duncan-Jones, & Scott, 1989). Without the presence of a control group to assess whether there is an inherent decrease in scores on the EDE-Q across time, it is not possible to conclude which of the two explanations is the more plausible. In any case, the current findings suggest no evidence that the training has a negative impact on the eating pathology of participants.
Although there was a slight decrease in K10 total scores from baseline to follow-up, this was not statistically significant. This finding is in accordance with previous evaluations of MHFA training and other mental health literacy interventions, and suggests that the training does not have a negative impact on the psychological distress of participants.

**Limitations**

While this study had many strengths, including the implementation of a broad range of measures, including some that had not previously been used to investigate eating disorders or bulimia specifically, as well as the use of a six month follow-up period rather than just a pre-post assessment; there were also some important limitations to the methodological design.

The absence of a control group is the primary limitation of this research. Without being able to control for extraneous variability in scores over time, concrete conclusions about the role of the training in causing improvements on a number of measures, such as the FAKT and EDE-Q, cannot be reached. However, given that the current research was designed to be a preliminary exploration of how the concept of mental health first aid might be applied to eating disorders, this study has produced some evidence to suggest that providing a training intervention to community members increases knowledge and confidence in providing first aid, as well as important data about how future evaluations could be best implemented.

A second limitation of this research is the composition of the sample at baseline. Prior to training, the majority of participants upheld empathic attitudes towards people with bulimia, had relatively good mental health literacy, a large proportion were already in contact with an individual with an eating disorder and had provided some level of
assistance. In contrast to the community studies completed by Mond and colleagues, it appears as though the current sample were already functioning above average on a number of variables (e.g. Mond, Hay, et al., 2004b; Mond, Hay, et al., 2004c; Mond & Marks, 2007; Mond, Marks, et al., 2007). It was perhaps the nature of the college environment, where students live in close contact with one another, members of staff are highly trained in providing pastoral care, and all are well educated, which resulted in participants scoring relatively highly on most measures at baseline. It is also possible that because recruitment materials contained information about both eating disorders and mental health first aid, participants with favourable baseline scores enrolled in this study. Research that had a much longer time frame for recruiting participants and could engage interested parties in more subtle ways, may have found a different sample composition.

A third limitation of this research is the size of the sample who reported providing a first aid intervention. Although the proportion of participants who reported providing some form of help \( n = 31, 42\% \) was similar to previous evaluations of MHFA training (e.g Kitchener & Jorm, 2004), the power to uncover a statistically significant effect is limited by such small numbers. Importantly, the only investigation to examine first aid experiences in a follow-up period longer than six months, found that 78% of respondents had experienced a situation in which they had provided some help, 19 to 21 months after receiving the training (Jorm, Kitchener, et al., 2005). To ensure sufficient statistical power in future research evaluating MHFA training, a combination of a larger number of trained participants and a longer follow-up period should be employed.

It should also be noted that two important aspects of the trial were not optimal in design; the training instructor and the novel instruments. Because the researcher and the
presenter were the same individual, it is possible that bias was introduced into the interpretation of results. To address this limitation, open-ended data was reviewed by an independent rater where ever possible. However, future research would benefit from the independent conduct of the training intervention and its evaluation, to minimise opportunity for bias. Furthermore, because the psychometric properties for a number of new instruments, such as the FAKT and Knowledge of informal help-seeking scale, were not investigated prior to implementation, it is unknown how their re-test reliability affected the current results. Further investigation of the properties of these instruments would of course elucidate any error introduced during their administration.

**Implications of this research**

Across most measures of knowledge, significant improvements, some with large effect sizes, were found from baseline to post-training. However, these changes were often not maintained at follow-up, as sharp declines occurred in the follow-up period. That the current research was not able to find sustained effects for a number of instruments suggests that the duration or ‘dosing’ effect of the training was inadequate. Given that evaluations of the full MHFA training program, which is presented across four sessions and totals 12 hours, has found much stronger effects at six month follow-up, it would be beneficial for the field of eating disorders for future research to investigate the effect of providing the current training within the full MHFA syllabus. It is also possible that presenting the current training over two or three sessions, with the inclusion of more material focused on the reduction of stigmatising attitudes and modeling of first aid behaviours, would produce lasting significant changes to knowledge, attitudes and behaviours.

**Conclusions**
Despite the short duration of the training’s impact, this research has provided preliminary evidence that mental health first aid training for eating disorders is associated with an increase in accurate recognition of eating disorders, knowledge of effective treatments and consensus-based first aid strategies, and confidence in providing help. The training was also associated with appropriate treatment seeking and appropriate first aid strategies, in a number of first aid interventions provided by participants, to individuals with suspected eating disorders. Furthermore, there was no evidence that the training had a negative impact on the mental health of participants or the first aid they provided to others. Future research is needed to elucidate the optimal duration of the training program needed to achieve sustained increases in knowledge and attitudes, and to assess whether significant changes in first aid behaviour emerge over time. The current investigation, however, can confirm that the concept of mental health first aid can be usefully applied to improve mental health literacy and help-seeking behaviours for the eating disorders.
3. Discussion of research findings and implications for the future
Chapter 3.1: Summary of research findings
This aim of the current research was to establish which strategies should be used by members of the public when providing mental health first aid for eating disorders, and to explore how providing interventions, which describe and encourage the provision of appropriate mental health first aid strategies, affects mental health literacy and help-seeking behaviours. In the first study, this research established that there are a wide range of resources available to the public, which suggest various strategies for assisting someone with an eating disorder, but these are most often value- rather evidence-based. It was found that there are 200 strategies that consumer, carer and clinical experts believe are essential or important to the provision of mental health first aid for eating disorders. These strategies encompass a wide range of knowledge, attitudes and behaviours; such as the importance of listening non-judgmentally to the person’s problem or offering practical assistance in seeking out appropriate professional care. In addition, it was also established that there are inappropriate strategies for assisting someone with an eating disorder, and this is particularly true when assisting a child or young person, as these individuals require more support and less autonomy when it comes to making decisions about their health care. The results of this initial study were used to produce the document *Eating Disorders: First aid guidelines.*

This research has also been able to establish that guidelines on how to provide mental health first aid for eating disorders can be effectively implemented. The second and third studies explored two different ways of providing the public with information about eating disorder first aid. The second study explored how a simple intervention, which made the guidelines document available for free download on the World Wide Web, impacted on web-users. The third study explored how a complex intervention, which involved providing a 4-hour training course in how to provide mental health first
aid, affected the knowledge, attitudes and behaviours of members of the public, towards individuals with eating disorders.

The results of both the second and third studies established that the provision of interventions, which guide the public in how to assist someone with an eating disorder, was associated with successful first aid interventions. Although only small in number, there were participants in both studies who reported suggesting professional help to the person they were assisting, and that as a result of that suggestion, treatment was sought. In addition, in both studies participants reported being able to interact with the person with an eating disorder in a more understanding, caring and appropriate manner than before they had received the intervention. Importantly, some participants mentioned that they undertook a risk assessment where they had a suspicion that the individual they were assisting was thinking about suicide, and that they would not have done so without either reading the information in the guidelines, or receiving the training program. Furthermore, in both studies, there was a complete absence of reports that the mental health first aid information participants received and went on to use, was associated with negative first aid experiences. These results have therefore established preliminary evidence that providing mental health first aid interventions for the public is associated with an increase in the provision of appropriate helping behaviours and successful first aid interactions.

The results pertaining to changes in knowledge and attitudes are, however, more ambiguous. For example, many participants in the second study reported not learning very much from reading the guidelines. Yet, feedback from participants in open-ended responses suggested that this was because of prior experience, rather than the guidelines being ineffective in increasing knowledge per se. Furthermore, while the training
intervention was associated with an increase in knowledge in some areas, such as knowledge of appropriate first aid strategies and effective treatments for eating disorders, the change on knowledge in other dimensions, such as knowledge of the MHFA action plan, was only short lived and had been lost at follow-up testing. Importantly though, participants were significantly more accurate after the training in recognising an eating disorder, as described in the vignette.

Changes in attitudes were also subtle. Participant descriptions of their first aid experiences in both the second and third studies suggested that after receiving the intervention they felt they had more understanding and empathy for individuals with eating disorders, and as a result, were able to assist them in a more supportive way. However, results from the third study showed that only three items showed a statistically significant improvement in participant attitudes. These were beliefs about the ‘most helpful’ interventions, beliefs about Kelly’s prognosis with treatment, and how sympathetic participants believed they would be towards someone with bulimia. Changes on only one item though, were maintained at follow-up; ratings of antidepressants as the medication that would be the ‘most helpful’ for bulimia became more concordant with the guidelines after the training, and this change was still apparent after six months.

Finally, the current results make establishing inferences about how much these interventions contributed to a change in behaviour, quite difficult. For example, the second study, which was designed to gather qualitative information about web-users’ first aid experiences, did not engage a repeated measures design to gather quantitative data about behaviour change. So these data cannot be used to make inferences about increases in behaviour before and after reading the guidelines. In the third study, while
the repeated measures design did allow for the quantification of behaviour, because only a small number of participants went on to provide first aid, it is likely that these data were too underpowered to detect a statistically significant effect. Despite this, qualitative data provided preliminary evidence that the interventions provided were associated with positive first aid interactions.

Importantly though, while these studies have limitations on their internal validity, such that strong causal inferences cannot be made, they are high on external validity, because of their development from consensus-based guidelines and their implementation in ‘real-life’ situations. That guideline implementation on the internet and in the classroom prompted first aid situations among individuals, which were not orchestrated by the research program, is a particular strength of this research. Indeed, it was partly because of the implementation of the guidelines in these situations, that the pre-testing and control groups were difficult to implement.

In summary then, the results of this research suggest that the concept of mental health first aid can be usefully applied to the field of eating disorders as an avenue for improving mental health literacy and help-seeking behaviours.
Chapter 3.2: Comparison with previous research
**Previous eating disorders research**

**Effects on mental health literacy**

This research was associated with increases in some areas of mental health literacy among participants who attended the training session provided in the third study. In comparison with the mental health literacy intervention provided in the *Health and Wellbeing* study (Hay, Mond, et al., 2007) (see Chapter 1.3 for a review), the training intervention used in the current research appears to be better at increasing recognition of eating disorders and knowledge of appropriate treatments. However, without the presence of a control group, this must be considered speculation rather than a definite conclusion.

There was only one item on the MHLQ-B for which the *Health and Wellbeing* study found either a significant change from baseline to follow-up or a significant group by time interaction: significantly fewer of those in the intervention group regarded treatment for bulimia as ‘very’ or ‘extremely’ difficult, when measured at 12 months follow-up, compared to those in the control group. Interestingly, the current research found no change in participant ratings on this item. However, there were a number of other items which showed significant changes over time. For example, there were significant differences in eating disorder problem recognition and knowledge of effective treatments. From baseline to six months follow up, 19% more participants in the current sample thought that the problem described in the vignette was an eating disorder (45% at baseline; 64% at follow-up). By comparison, in the *Health and Wellbeing* study, the increase across the same time frame was 15% (33% at baseline;
48% at follow-up). In the current sample, 12% more participants rated CBT as the 
most helpful treatment after the training intervention (11% at baseline; 23% at follow-
up); whereas this decreased by 7% in the Health and Wellbeing study (34% at baseline; 
27% at follow-up). Ratings of antidepressants as the most helpful medication increased 
by 17% in the current study (34% at baseline; 51% at follow-up); whereas this remained 
constant in the Health and Wellbeing study (16%).

Therefore, the current research provides some preliminary evidence that providing 
training in mental health first aid is more effective than simply providing print material 
about eating disorders, as was the case in the Health and Wellbeing study. Given that 
previous eating disorder prevention program research has found that active interventions 
result in more robust changes in knowledge and behaviour (Stice, Shaw, et al., 2007), it 
is possible that the more active nature of the current intervention, which included group 
discussions and activities, resulted in greater gains in knowledge than the more passive 
model of providing written material. It is important to note however, that neither the 
Health and Wellbeing study, nor the intervention provided in the current research, were 
effective in producing significant sustained changes in attitudes towards bulimia or 
towards treatment (other than participant beliefs about antidepressants, which in the 
current research, became significantly more concordant with the guidelines over time).

**Effects on help-seeking**

In the second study of the current research, 12 participants reported that as a result 
of their suggestion, the person they were assisting had sought professional help for a 
suspected eating disorder, and 11 participants reported seeking professional help for 
themselves after reading the guidelines. In the third study, seven participants reported

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10 As there were no significant differences found between the intervention and the control group in the 
study, the total sample percentages are compared to the current sample.
that the person they were assisting had sought professional help for a suspected eating disorder, and nine had sought help for another mental health problem, as a result of a first aid intervention. In total therefore, this research was associated with 39 participants seeking professional help. Although some participants that attended the training in the third study may have also sought help for themselves, any increase in personal help-seeking after the training is unquantifiable from the current data.

In comparison with the mental health literacy intervention arm of the Health and Wellbeing study (Hay, Mond, et al., 2007), and the NEDSP (see Chapter 1.4, Becker, et al., 2004), the current study appears to be associated with greater numbers of participants seeking help. Hay and colleagues (2007) for instance, reported that 12 participants had sought any form of help at baseline and this increased to 42 participants at 12-month follow-up, across both the intervention and control groups. Of these 30 new help-seeking cases, only 21 had sought professional help from a GP, a dietitian or nutritionist, a psychiatrist or psychologist. It is important to note that to reach their final sample of participants, the authors originally sent postal questionnaires to 10,000 potential participants, received and assessed 5,255 responses, performed 324 face-to-face interviews with participants who screened positive on the EDE-Q, then invited 185 eligible respondents to participate, of which 122 were enlisted and randomised. Similarly, Becker and colleagues (2004) screened 9,069 participants using self-report questionnaires, interviewed 5,787 face-to-face, received and analysed 344 follow-up questionnaires, yet found that only 43 participants had reported having sought professional treatment for their eating disorder. By comparison, in the 10 months the guidelines feedback questionnaire was displayed on the MHFA website, the document Eating Disorders: First aid guidelines was downloaded 4,281 times, 711 participants
responded to the first questionnaire, of which 362 specifically indicated they had accessed the eating disorder guidelines, and 23 reported seeking help within the month since the guidelines were downloaded. Furthermore, 131 participants registered their interest in the training program, 90 completed the first questionnaire, 85 attended the training and completed the post-training questionnaire, 73 completed the follow-up, and 16 reported seeking help within the six months since training. These mental health first aid interventions therefore appear to be more efficient at prompting individuals to seek professional help, and given that these interventions did not involve posting questionnaires to between nine and ten thousand participants, as did the NEDSP and the Health and Wellbeing studies, they could certainly be assumed to be much more cost effective. In addition, given that the intervention provided by Rees and Clark-Stone (Rees & Clark-Stone, 2006) to teachers and school nurses did not result in any new episodes of help-seeking, the current research certainly appears to be more effective than that intervention.

A novel aspect of this research was that it explored the effect of providing interventions to the social networks of people with eating disorders. It may be that one reason why these interventions were more efficient in prompting help-seeking was because they focused on increasing mental health literacy and helping behaviours in the social network, rather than in individuals with eating disorders alone. It is possible that because this intervention model allows the social network to develop knowledge and skills to facilitate individuals with eating disorders to overcome more personal, illness-related and institutional barriers to care, it is more efficient in prompting help-seeking.
Previous MHFA training evaluations

Effects on mental health literacy

With the exception of social distance, the training provided in the current research appears to be as effective in changing mental health literacy as the first three evaluations of the MHFA training (see Chapter 1.5 for a review). For example, in the first uncontrolled trial it was found that at follow-up, 2% more participants correctly identified the problem in the vignette as depression and 11% more correctly identified the problem in the vignette as schizophrenia. While the increase in recognition of depression was not found to be significant, possibly because participants were already near ceiling, the increase in recognition of schizophrenia was a significant improvement. Interestingly, at baseline, more than half (57%) correctly identified schizophrenia. By comparison, only 18% of participants in the current study correctly identified bulimia at baseline and although 11% more correctly identified bulimia at follow-up (29%), this change was not found to be significant. The 19% increase in participants recognising the problem in the vignette as ‘any eating disorder’ at follow-up, was significantly different from baseline.

In the MHFA training controlled trial (Kitchener & Jorm, 2004), there were no significant improvements in problem recognition for either the depression or schizophrenia vignettes alone, or in combination. However, recognition of both disorders was high at baseline (90% for depression, 75% for schizophrenia). Given that participants were near ceiling, it is difficult to know how effective this intervention was. The MHFA training cluster trial (Jorm, et al., 2004) found that, compared to baseline, there were 13% more participants in the intervention group who correctly identified the problem in either the depression or schizophrenia vignettes at follow-up, and although
there was a 2% increase in the control group, a significant group by time interaction was found. It therefore appears that there are not strong differences between the types of training and the resulting improvements on problem recognition, except that the full MHFA training program has been found to have the strongest effect on specific problem recognition for schizophrenia, and the current research to have a more general effect for recognition of any eating disorder.

All three previous evaluation trials of the full MHFA training program were found to be associated with a significant increase in knowledge of helpful or effective treatments. This was also true for the current research. However, one area where there was a strong difference in outcome is social distance. All three previous MHFA evaluation trials found significant decreases in participants’ social distance relating to the schizophrenia vignette, and some also found decreases for that of depression. In the current research though, no changes were found in participant ratings of social distance, suggesting that the intervention provided in the current research was less effective at decreasing stigmatising attitudes than the full MHFA training program.

Although many other items on the MHLQ-B implemented in the current research found that the training was not associated with sustained significant improvements, these items were developed specifically for use in eating disorders research (Mond, Hay, et al., 2004c), and have not been implemented in previous MHFA training trials. The outcomes of these items therefore cannot be compared. In addition, although two more recent trials of MHFA training implemented the ALGEE item measuring knowledge of the MHFA action plan, and although these both found significant improvements where the current training did not, these evaluations are of other versions
of the MHFA training; one of the Vietnamese version (Minas, et al., 2009) and one of
the Youth version (Kelly, et al., In press).

In summary, while the current research failed to find significant improvements on
some aspects of mental health literacy, on other important domains of knowledge, such
as problem recognition and knowledge of effective treatments, there does not appear to
be strong differences between the results of the current research and results of previous
evaluations investigating the full MHFA training program.

Effects on first aid behaviours and help-seeking

In comparison with previous evaluations, the current research appears to be only
slightly less effective than the full MHFA training program at changing helping
behaviours in the social network and prompting help-seeking in individuals with mental
illness. For example, in two of the three previous MHFA evaluations, the number of
participants who reported providing ‘some’ or ‘a lot’ of help to someone with a mental
illness was found to increase significantly after the training. In the uncontrolled trial
(Kitchener & Jorm, 2002b) 7% more participants provided help at follow-up; and in the
cluster trial (Jorm, et al., 2004), 8% more participants in the MHFA training
intervention group provided help at follow-up. In that study, although there was also an
increase in the control group over time (4% more provided help), a significant group by
time interaction was still found. By comparison, in the current study, while 6% more
participants reported providing ‘a little help’ at follow-up, there were no changes in the
amount who reported providing ‘some’ or ‘a lot’. Given these results, it appears that the
full MHFA training program is more effective at increasing the amount of help provided
by participants.
Only one of the three previous evaluations found a significant improvement in the number of participants who suggested professional help when providing mental health first aid. In the controlled trial (Kitchener & Jorm, 2004), professional help was suggested by 1% more participants in the intervention group at follow-up, and as there was a 10% decrease in the control group, a significant group by time interaction was found. By comparison, in the current study, 5% of the 73 participants had suggested professional help to someone they were assisting at baseline. While this increased to 12% at follow-up, the 7% change was not statistically significant. The cluster trial (Jorm, et al., 2004) also found a non-significant change whereby 6% more of the intervention group suggested professional help at follow-up, however, a 1% increase was also found in the control group, and no significant group by time interaction appeared. In the uncontrolled trial (Kitchener & Jorm, 2002b), an unusual result was found whereby the percentage of participants suggesting professional help decreased from 15% at baseline to 9% at follow-up. These results suggest that the full MHFA training program does not necessarily appear to be more effective at increasing participant encouragement of professional help-seeking.

All three previous evaluation studies found a significant improvement in participant confidence in providing first aid, just as the current research did. In the 2002 uncontrolled trial (Kitchener & Jorm, 2002b), 21% more participants felt ‘moderately’, ‘quite a bit’ or ‘extremely’ confident at follow-up compared to baseline; the percentage of participants reporting feeling confident increased from 62% at baseline to 83% at follow-up. A similar 20% increase was found in the intervention group of the controlled trial (Kitchener & Jorm, 2004); 54% reported that they felt confident at baseline and this increased to 74% at follow-up. Although an 8% increase was also seen in the control
group, a significant group by time interaction was found. The cluster trial (Jorm, et al., 2004) found an increase in intervention group confidence score from baseline to follow-up, and a decrease in that of the control group, leading to a significant group by time interaction. By comparison, in the current research, 78% participants reported feeling confident at baseline and this increased by 18%, to 96% at follow-up. It is interesting that a greater proportion of the current sample felt confident at baseline than in the previous evaluation studies, and this perhaps reflects the higher level of mental health literacy and experience in providing help that was found in the current sample at baseline.

Also informative is a comparison of data from the second and third studies in the current research and one previous qualitative evaluation of MHFA training, which used self-report questionnaires to gather data about participants’ experiences with providing first aid, 19-21 months after attending the training (Jorm, Kitchener, et al., 2005). The authors of that research found five key points that consistently presented in the data. The majority of these findings concurred with the results of the current research. For example, the first point was that the majority of respondents had experienced an interaction with someone where mental health issues were salient and the course enabled them to take steps that led to better effects than otherwise might have been the case. While that study found 78% of participants had experienced a situation where they believed someone they knew was experiencing a mental health problem, the proportion of participants in the current research was much lower. This is perhaps a function of the much shorter follow-up periods; there was only a one month delay between participant download of the guidelines and lodging of qualitative data about first aid experiences in the second study of the current research, and a six month follow-up period after the
training intervention was provided in the third study. However, the current research did find evidence in the qualitative data gathered, in both the second and third studies, to suggest that participants felt better prepared and able to provide appropriate assistance, as a result of receiving either the guideline document via the internet or the training intervention.

The second point observed in the previous evaluation was that participants experienced increased empathy towards individuals they were helping, increased confidence in being able to provide appropriate assistance, as well as feeling better able to handle crises. These experiences led to participants’ positive evaluation of the training they received. These themes were also present in data from the current research; in both the second and third studies many participants mentioned feeling more understanding of individuals with eating disorders and believing that they were able to provide more empathic support as a result of the information they had received. In the second study, although confidence was not assessed directly, some participants mentioned feeling more confident in being able to provide assistance to someone with an eating disorder. In the third study, a significant increase was found in participant ratings of confidence. In both studies, participants mentioned providing risk assessments and suicide interventions where they would not have done so before receiving information about how to assist in a mental health crisis.

The third point observed previously was that the positive effects, outlined in point two, were experienced by a wide range of people with varied expectations and needs. This is perhaps not as apparent in the current data, given the specific focus on eating disorders. It was, however, an interesting finding that in the third study the training intervention appeared to generalise to other mental illnesses, whereby participants
reported providing as much assistance to individuals with other mental health problems as they did to individuals with eating disorders. Furthermore, participants felt that the first aid interventions provided for other mental health problems were more successful than interventions provided for eating disorders.

The fourth point was that there was no evidence of people over-reaching themselves because of confidence in providing first aid. The current data also showed no evidence that the significant increase in participant confidence, even in the absence of significant increases in some aspects of mental health literacy, led to inappropriate or negative first aid experiences.

Finally, the fifth point outlined was that those who attended were able to identify quite specific benefits and many thought that the course was not only very useful, but were also keen to see it repeated and extended. Participants in the current research also commented on the value of both the guideline documents which they downloaded and the training course they attended. A number recommended that the guidelines be made widely available to the public, especially in the workplace, or that the training be rolled out on a community-wide basis, given the prevalence of eating disorders particularly among young women in the university setting.

These results suggest that the findings of the current research are largely similar to previous evaluations of the full MHFA training program, as both have been associated with positive appraisals among participants of the value of mental health first aid, increased confidence in participants’ ability to provide appropriate assistance, participant reports of being more empathic and supportive towards individuals with mental illness, and most importantly, more positive first aid interactions. The most important difference to arise from a comparison of the current research with previous
evaluations of MHFA training appears to be that the current research found a smaller proportion of participants provided assistance to someone with a mental health problem.

This finding may be related to the failure of the current interventions to produce sustained changes in some aspects of mental health literacy, such as decreases in social distance, where previously the full syllabus had been successful. If the current interventions had been more potent in their effects on knowledge and attitudes, they may have resulted in behaviour change among a larger number of participants. However, this finding may also be related to the narrow focus on eating disorders alone. For example, because the full MHFA training program provides information on how to assist in a wide range of situations, such as when a person is experiencing psychosis, an acute stress reaction following a traumatic event, depression, anxiety or a series of mental health crises, participants of this training may provide assistance in a range of scenarios and thereby provide assistance to a number of individuals. By comparison, the training intervention provided in the third study focused only on assisting individuals experiencing or developing an eating disorder, which would limit the number of individuals a participant could assist.

In summary, an analysis of previous research illustrates that the current research has made an important contribution to the field because it has established that implementing interventions that describe and encourage the provision of mental health first aid for eating disorders, are associated with successful first aid interventions and the facilitation of help-seeking among those with eating disorders, and interestingly, also among those with other mental health problems. While the interventions provided in the current research appear to be more effective in prompting help-seeking than previous interventions focusing on eating disorders, they do not appear to be quite as
effective as the full MHFA training program in prompting helping behaviours in the social network. This is perhaps because the current research was not able to produce the same significant and sustained decreases in stigmatising attitudes that the full MHFA training program was found to produce, or because of the limited focus of the current research on only individuals with eating disorders.
Chapter 3.3: Limitations of the current research
Each study undertaken in the current research had important limitations. In the first study, the small number of participants on the consumer panel meant that there was imprecise estimation of the level of consensus. In the second study, the low participation rate in the second questionnaire meant that the data gathered may not be representative of the larger body of web-users downloading the guidelines. In the third study, the absence of a control group meant that strong causal inferences about the role of the training in improving scores on items such as the FAKT, EDE-Q and MHLQ-B, could not be made.

An important limitation of the broader research program as a whole, however, is that without being able to measure the help-seeking behaviours of first aid recipients prior to their receipt of a first aid intervention, it remains unclear whether the help-seeking events recorded in the second and third studies were a true increase, or whether these individuals would have sought treatment irrespective of whether they received assistance. Although the wording of the questionnaires attempted to address this issue by asking *As a result, did the person you were assisting seek mental health care from a professional?*, the item still relies on participant interpretation of what motivated the individual to seek treatment. The current research can therefore only be considered to provide preliminary evidence for the effectiveness of mental health first aid interventions in increasing help-seeking in individuals with eating disorders.

There has been very little investigation of the impact of receiving mental health first aid on individuals with mental health problems. One exception is the small trial of MHFA training for football coaches (see Chapter 1.5, Pierce, et al., 2010). While there is an inherent assumption that increasing appropriate help-seeking and empathic assistance is beneficial, it remains unknown how first aid interventions provided by
participants have affected individuals experiencing an eating disorder or other mental health problem. In the football trial, no implications either positive or negative, were found for footballers whose coaches had attended the training. However, neither the number of first aid interventions conducted by coaches, nor the number of help-seeking events by players, were measured, so the effect of any first aid behaviours was in fact, not directly assessed. Given that in both the previous evaluations of MHFA training and in the current research, recipients of first aid have remained anonymous, it has not been possible to collect data about their experiences. It is therefore important that future research encompass a methodological design that allows researcher contact with first aid recipients to assess any effects that the provision of first aid may have on these individuals, including for example, an increase in help-seeking. Future carefully designed trials, which focus on gathering data about first aid recipients, would overcome this important limitation.
Chapter 3.4: Future research
Direct extensions of the current research

In particular the findings of the third study provided some very valuable data that could be used to guide the design and implementation of a full scale randomised controlled trial of a mental health first aid for eating disorders intervention. That participant responses to both the guidelines in the second study and to the training program in the third study, were largely positive; and that the uptake of the guideline document on the internet and the uptake of the training program among University staff and students was strong, indicates that there is desire in the community to learn more about eating disorders and become more confident and capable in assisting those they know who are experiencing an eating disorder. Furthermore, that these interventions were associated with 39 people seeking professional help, either for themselves after reading the guidelines, or after a suggestion from someone who had provided first aid, provides preliminary evidence that these interventions are associated with help-seeking behaviours. There is, therefore, value in further evaluation of mental health first aid interventions for eating disorders.

In accordance with the findings of the third study, future evaluations of a training intervention would benefit from a number of changes to the current training protocol. These include providing a longer training intervention to allow more time to be spent on role-playing first aid behaviours and discussing the lived experience of eating disorders. A video depicting an optimal first aid intervention may aid both behavioural learning regarding providing assistance, and the opportunity for indirect contact with someone with an eating disorder, to have a positive and lasting effect on participant attitudes towards individuals with eating disorders.
A number of changes to evaluation instruments would also be valuable. These include the addition of a measure to assess changes in knowledge of when it is appropriate to provide mental health first aid, rather than knowledge of specific disorder signs and symptoms. A different measure of help-seeking for the self, specifically developed for a repeated measures design, would also overcome the limitation of the current research in not being able to conclude whether any increases in help-seeking at follow-up were the result of new disclosures or new help-seeking events.

The inclusion of a control group in the evaluation design would also facilitate causal inferences about the training and its effect on knowledge, attitudes and behaviours. In particular, the employment of two different types of control conditions would provide valuable data on the effect of intervention design. For example, if downloading and reading of the guidelines document *Eating Disorders: First aid guidelines* was used as one control condition, and a training program unrelated to eating disorders or mental illness, such as the physical first aid training provided by Red Cross or St. John Ambulance, was used as another control condition, any differences in knowledge, attitudes or behaviours, between the guidelines and the training interventions could be assumed to be due to the nature of the intervention. Furthermore, any changes on these dimensions between the mental health first aid and physical first aid training could be assumed to be due to the content of the intervention.

The manipulation of booster session conditions would also help to elucidate any ‘dosing’ effect and provide guidance on the optimal length of the training program. For example, it may be that providing the training materials over three, weekly, two-hour sessions produces the strongest change on the dimensions of interest, or perhaps it would be more effective to provide the training over one six-hour, single-day session.
Given that meta-analyses of eating disorders prevention programs found that the interventions with multiple, short sessions produced the largest and most enduring results (Stice & Shaw, 2004; Stice, Shaw, et al., 2007), perhaps the former would be preferable. Whatever the outcome, the results of such an evaluation could also be used to inform the design of future mental health literacy interventions for other disorders which are yet to be researched, such as bipolar disorder.

Alternatively, it would be interesting to evaluate the effect of providing the current training protocol within the existing MHFA standard syllabus. It is possible that the repetition of the MHFA action plan and exposure to personal stories of individuals with mental illnesses, which occur throughout each of the four sessions of the 2-day program, would be sufficient to overcome the limitations of presenting the eating disorders training in isolation, as per the current research.

**Broader issues for future research**

Whichever the design of the training protocol, future evaluations of mental health first aid interventions would benefit from the inclusion of a third follow-up period, perhaps at 12-months, to develop an understanding of how the provision of first aid behaviours changes over time. In this sense, an even greater longitudinal investigation of helping behaviours would be warranted, once the efficacy of a training intervention had been established in the short term. Such longitudinal research could also be used to investigate the particular individual characteristics associated with the provision of mental health first aid. For example, if longitudinal research included measures of familiarity with disorder, likelihood of contact with potential recipients (in occupational
role for example), personality, emotional intelligence, or other traits that might relate to likelihood of providing first aid; and if the research assessed which participants went on to provide assistance; then a longitudinal analysis could elucidate which individual traits best predict helping behaviours. Furthermore, such data could be used to examine whether particular traits are associated with an increase the quality or type of help provided. It may be, for example, that those who are higher on measures of traits like altruism or empathy, or those in particular occupational roles like teaching or nursing, are more likely to provide supportive assistance than those who are lower on such measures.

Information about which individual characteristics predict the provision of assistance would also be useful for an examination of the relative benefits of selective versus universal training. It may be true that only some individuals who receive training ever go on to provide first aid. In this case, selecting out those individuals who are the most likely to provide assistance in the future, would be a more cost effective method of providing training to community members. Inversely, it is possible that given the high proportion of mental illness in the community, and the likelihood that every member of the public will at some time across their lifespan, come into contact with someone with a mental health problem that warrants assistance, then providing training at the population level provides the greatest value for the community.

While these are interesting questions for future research, it is also important that future evaluations of mental health first aid do not focus solely on the provision of helping behaviours. Given that seven broad aims of the MHFA training program have been outlined (see Chapter 1.5), it is important that further evaluations also focus on the broader effects that increasing mental health literacy at a population level might have
for the community, such as decreasing stigmatising attitudes and increasing social support for those with mental illness.

In summary, a carefully designed full scale evaluation trial of training in mental health first aid for eating disorders would be of benefit to the field, because it could establish the effectiveness of the intervention in improving mental health literacy and helping behaviours in the social network. If the trial also included baseline measures of help-seeking in potential first aid recipients, the research could also establish the effectiveness of the intervention in increasing help-seeking. In addition to analyses of these domains at the individual level, it might also be of value to assess the effects at the population level, by providing training on a community-wide basis.
Chapter 3.5: Practical implications of this research
In 2010, the curriculum for the Standard and Youth versions of the MHFA training programs were revised to reflect the newly established consensus-based guidelines on how to provide mental health first aid (Kelly, et al., In press). A chapter on eating disorders was included in the second edition manual *Youth Mental Health First Aid: A manual for adults assisting young people* (Kelly, Kitchener, & Jorm, 2010) and in the corresponding training program. These were based on the *Eating Disorders: First aid guidelines* document, the participant booklet and teaching notes, developed in the first and third studies of the current research. Since the second edition became available in February 2010, 300 instructors have been trained by the MHFA organisation in how to present the program, and more than 3,350 members of the public have attended courses across Australia. The current research has therefore already had practical implications for the teaching and practice of mental health first aid for eating disorders.

Although the new editions of the Youth and Standard MHFA training have yet to be evaluated, a full-scale randomised controlled trial is planned for late 2011. This research program will evaluate the effect of providing the full 14-hour, 2 day, Youth version of the MHFA training to parents of adolescents. It will evaluate changes to mental health literacy and help-seeking in both the parent who attends the training and the adolescent who does not. As the materials used to present and evaluate the eating disorders component of this training, were informed by the outcomes of the current research, the findings from the three studies presented here, will continue to have a range of practical implications for future mental health first aid research and practice.
Chapter 3.6: Conclusions
Eating disorders are a significant health issue. They commonly affect young women, create considerable disability and impose great burden on individuals, their family and community. Despite the availability of effective treatments, very few people with a diagnosable eating disorder seek appropriate treatment and public knowledge of symptoms and their effects is poor. If the considerable burden caused by eating disorders is to be reduced, interventions that increase the public’s knowledge, and the likelihood of help-seeking by individuals with eating disorders, are needed. Interventions that target the social network appear to be the most promising because of the important role family and friends can play in recognising an eating disorder, reducing stigmatising attitudes and facilitating engagement with treatment.

Mental health first aid training courses provide information to the public about how to assist those with mental illness to seek appropriate help and support them to manage symptoms, and are known to be effective in increasing mental health literacy, the provision of assistance, and in decreasing stigmatising attitudes. The development of mental health first aid interventions for eating disorders provides a promising avenue for increasing appropriate help-seeking and ultimately decreasing the burden the caused by these disorders. This research aimed to establish which strategies should be used by members of the public when providing mental health first aid for eating disorders, and to explore how providing interventions, which describe and encourage the provision of appropriate mental health first aid strategies, affects mental health literacy and help-seeking behaviours.

This research found that there are appropriate mental health first aid strategies which members of the public should use when providing assistance to someone developing or experiencing an eating disorder. These strategies were used to create the
document *Eating Disorders: First aid guidelines*. This research also found that these guidelines can be usefully implemented and are associated with the provision of appropriate mental health first aid strategies and positive first aid interactions for people with eating disorders and other mental health problems. Despite the short duration of the intervention’s impact in the third study, this research has provided preliminary evidence, which suggests that providing information about appropriate mental health first aid strategies for eating disorders is associated with an increase in accurate recognition of eating disorders, knowledge of effective treatments and consensus-based first aid strategies, and confidence in providing help. Future research is needed to elucidate the optimal duration of the training to achieve sustained increases in other areas of knowledge and attitudes, and to assess whether statistically significant changes in first aid behaviour emerge over time. Furthermore, future investigation of the effects on first aid recipients is needed to ascertain whether the guidelines and training interventions are associated with true increases in help-seeking and positive health outcomes in those with mental illness. Despite some important limitations, the current research has provided valuable data about how a full scale randomised controlled trial might be implemented in the future to provide further analysis of these issues and has had practical implications for the curriculum provided in the Youth version of the MHFA training program. In addition, the current research confirms that the concept of mental health first aid can be usefully applied to the field of eating disorders, as an avenue for increasing the mental health literacy and helping behaviours in the social network, and ultimately improving help-seeking behaviours, and reducing burden and disability, in individuals with eating disorders.
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Appendices
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