

# **Prevalence and Treatment of Anxiety and Depression in Arab People and the Potential of Internet-Delivered Cognitive Behavioural Therapy**



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## LIST OF ABBREVIATIONS

|          |  |
|----------|--|
| BA       | <i>Behavioural Activation</i>                                      |
| BAI      | <i>Beck's Anxiety Inventory</i>                                    |
| BDI      | <i>Beck's Depression Inventory</i>                                 |
| BOCF     | <i>Baseline-Observation-Carried-Forward</i>                        |
| BP       | <i>Bipolar Disorder</i>  |
| C        | <i>Completer Analysis</i>  |
| CALD     | <i>Culturally and Linguistically Diverse</i>                       |
| CAM      | <i>Cultural Accommodation Model</i>                                |
| CAPM     | <i>Cultural Adaptation Process Model</i>                           |
| CAPS     | <i>Clinician-Administered PTSD Scale</i>                           |
| CBT      | <i>Cognitive Behavioural Therapy</i>                               |
| CDI      | <i>Children Depression Inventory</i>                               |
| CPT      | <i>Cognitive Processing Therapy</i>                                |
| CRIES    | <i>Children's Revised Impact of Event's Scale</i>                  |
| CS       | <i>Case Studies</i>  |
| CSEI     | <i>Coopersmith Self-Esteem Inventory</i>                           |
| CSF      | <i>Cultural Sensitivity Framework</i>                              |
| CTRL     | <i>Control Group</i>   |
| <i>d</i> | <i>Cohen's d (effect size)</i>                                     |
| DALY     | <i>Disability Adjusted Life Years</i>                              |
| DASS-21  | <i>Depression Anxiety Stress Scale – 21 item</i>                   |
| DICA-R   | <i>Diagnostic Interview for Children and Adolescents – Revised</i> |
| DRR      | <i>Diagnostic Remission Rate</i>                                   |
| DSM      | <i>Diagnostic and Statistical Manual</i>                           |
| EBT      | <i>Evidence-Based Treatments</i>                                   |
| EMDR     | <i>Eye Movement Desensitization and Reprocessing</i>               |
| EVM      | <i>Ecological Validity Model</i>                                   |
| F%       | <i>Percentage of Females</i>                                       |
| FB       | <i>Facebook</i>  |
| FG       | <i>First Generation</i>  |
| FMAP     | <i>Formative Method for Adapting Psychotherapy</i>                 |



|         |  |
|---------|--|
| GEE     | <i>Generalised Estimation Equation</i>                           |
| HAS     | <i>Hamilton Anxiety Scale</i>                                    |
| HSCL-25 | <i>Hopkins Symptom Checklist for Depression and Anxiety</i>      |
| HTQ     | <i>Harvard Trauma Questionnaire</i>                              |
| iCBT    | <i>Internet-Delivered Cognitive Behavioural Therapy</i>          |
| ICD     | <i>International Classification of Diseases</i>                  |
| IDR     | <i>Incidence Density Ratio</i>                                   |
| IPA     | <i>Intimate Partner Abuse</i>                                    |
| ITT     | <i>Intent-to-Treat</i>   |
| LOCF    | <i>Last Observation Carried Forward</i>                          |
| MDD     | <i>Major Depressive Disorder</i>                                 |
| mhGAP   | <i>WHO Mental Health Gap Action Programme</i>                    |
| mo      | <i>Month</i>   |
| MT      | <i>Music Therapy</i>   |
| MUM     | <i>Macquarie University Model</i>                                |
| N       | <i>Number of participants in the total sample</i>                |
| n       | <i>Number of participants in the treatment/control condition</i> |
| NET     | <i>Narrative Exposure Therapy</i>                                |
| NICE    | <i>National Institute for Health and Care Excellence</i>         |
| nRCT    | <i>Non-Randomised Control Trial</i>                              |
| ns      | <i>Not Specified</i>   |
| NSMHWB  | <i>National Survey of Mental Health and Wellbeing</i>            |
| OR      | <i>Odds Ratio</i>  |
| PSQI    | <i>Pittsburgh Sleep Quality Index</i>                            |
| PTSD    | <i>Posttraumatic stress disorder</i>                             |
| PTSS-C  | <i>Posttraumatic Stress Symptoms – Child version</i>             |
| QED     | <i>Quasi-Experimental Design</i>                                 |
| RCT     | <i>Randomized Controlled Trial</i>                               |
| SAD     | <i>Separation Anxiety Disorder</i>                               |
| SDTAF   | <i>Selective and Directed Treatment Adaptation Framework</i>     |
| SGOT    | <i>Single Group Open Trial</i>                                   |
| SIT     | <i>Stress Inoculation Therapy</i>                                |

|        |  |
|--------|--|
| SG     | <i>Second Generation</i>                               |
| SNRI   | <i>Serotonin and Norepinephrine Reuptake Inhibitor</i> |
| SPSS   | <i>Statistical Packages for Social Sciences</i>        |
| SSRI   | <i>Selective Serotonin Reuptake Inhibitor</i>          |
| STAI   | <i>State and Trait Anxiety Inventory</i>               |
| TF-CBT | <i>Trauma-focused Cognitive Behavioural Therapy</i>    |
| TAU    | <i>Treatment as usual</i>                              |
| TV     | <i>Television</i>                                      |
| U.K.   | <i>United Kingdom</i>                                  |
| U.S.   | <i>United States of America</i>                        |
| VAS    | <i>Visual Analogue Scale</i>                           |
| WHO    | <i>World Health Organisation</i>                       |
| WL     | <i>Waitlist Control Group</i>                          |
| YLD    | <i>Years Lived with Disability</i>                     |

## **ABSTRACT**

Little is known about the prevalence of anxiety and depressive disorders amongst Arab people. Furthermore, it is not clear if psychological treatments for disorders of anxiety and depression designed for Western populations are effective with Arab populations. This thesis aimed to: 1) Identify rates of psychological distress, barriers to treatment seeking, and acceptability of psychological treatments in Arab people; 2) Explore strategies for recruiting Arab people into psychological research; and 3) Determine the efficacy of Internet-delivered cognitive behavioural therapy (iCBT) for Arab people with symptoms of anxiety and depression. Using survey methodology, the results of Study 1 and 2 indicated that regardless of location, Arab people reported difficulty accessing treatment, high rates of psychological distress, but were willing to try face-to-face and online mental health services, such as iCBT. Study 3 found that Facebook was a more time-effective method for recruiting participants than traditional print and radio media. Using open trial designs, the results of Study 4 and 5 indicated that iCBT was efficacious and acceptable when administered in the English language to Arab people. Study 6, another open trial, found that iCBT was efficacious and acceptable for Arab people when administered in both the English and Arabic languages. The first two studies contribute to our understanding of the mental health needs of Arab people. Study 3 contributes to our understanding of effective recruitment methods for hard-to-reach populations. Studies 4, 5 and 6 contribute to data indicating that iCBT is efficacious for non-Western people with symptoms of anxiety and depressive disorders. Thus, in combination, these studies contribute to an emerging body of literature regarding the unmet mental health needs of Arab people and highlight the potential of iCBT for improving their access to evidence-based psychological treatments.

## STATEMENT OF CANDIDATE

I certify that the work in this thesis entitled *Prevalence and Treatment of Anxiety and Depression in Arab People and the Potential of Internet-Delivered Cognitive Behavioural Therapy* has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in this thesis.

The research presented in this thesis was approved by the Macquarie University Human Research Ethics Review Committee (Study 1, Approval Number: 5201200460, Date: 19 July, 2012; Study 2, Approval Number: 5201400971, Date: 10 December, 2014; Study 3, Approval Number: 5201300657 (in the recruitment section of the ethic's application for Study 5), Date: 17 January, 2014; Study 4, Approval Number: 5201300603 , Date: 27 August, 2012; Study 5, Approval Number: 5201300657 (Amendment), Date: 5 August, 2014; Study 6, Approval Number: 5201200603 (Amendment), Date: 21 January, 2015).

Signed,

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Rony Kayrouz (41981022)

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## LIST OF PUBLICATIONS

- Kayrouz, R., Dear, B. F., Johnston, L., Keyrouz, L., Nehme, E., Laube, R., & Titov, N. (2014). Intergenerational and cross-cultural differences in emotional wellbeing, mental health service utilisation, treatment seeking preferences and acceptability of psychological treatments for Arab Australians. *International Journal of Social Psychiatry*, 61(5), 484-491. doi:10.1177/0020764014553004
- Kayrouz, R., Dear, B. F., Johnston, L., Gandy, M., Fogliati, V. J., Sheehan, J., & Titov, N. (2015). A feasibility open trial of guided Internet-delivered cognitive behavioural therapy for anxiety and depression amongst Arab Australians. *Internet Interventions*, 2(1), 32-38. doi:10.1016/j.invent.2014.12.001
- Kayrouz, R., Dear, B. F., Karin, E., Gandy, M., Fogliati, V. J., Terides, M. D., & Titov, N. (2016). A pilot study of self-guided Internet-delivered cognitive behavioural therapy for anxiety and depression among Arabs. *Internet Interventions*, 3, 18-24. doi:10.1016/j.invent.2015.10.005
- Kayrouz, R., Dear, B. F., Karin, E., & Titov, N. (2016). Facebook as an effective recruitment strategy for mental health research of hard to reach populations *Internet Interventions*. doi:10.1016/j.invent.2016.01.001
- Kayrouz, R., Dear, B. F., Karin, E., Fogliati, V. J., & Titov, N. (in press). A pilot study of a clinician-guided Internet-delivered Cognitive Behavioural Therapy for anxiety and depression amongst Arabs in Australia, presented in both English and Arabic languages. *Internet Interventions*.
- Kayrouz, R., Dear, B. F., Karin, E., Terides, M., Gandy, M., Fogliati, V., & Titov, N. (submitted). Acceptability of mental health services for anxiety and depression in an Arab sample. *Community Mental Health Journal*.

## 1.0 - A Review of the Literature

### 1.1 Introduction

The *Arab world* or *Arab league* refers to the 22 countries and territories where Arabic is the national language. These countries and territories are located in North Africa and the Middle East and include Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, and Yemen. Symptoms and treatments of psychological disorders have been reported in the medical literature of the Arab world for millennia. For example, the famous Egyptian medical documents, *The Ebers Papyrus* (Bryan, 1930/1500 BCE; Okasha, 2005) describes what mental health professionals now recognise as symptoms of depression and anxiety. In the section on the *treatise of the heart*, the experience of sadness that is recognised today as a core characteristic of depression, is eloquently described as follows:

When the heart is afflicted and has tasted sadness, behold his heart is closed in and darkness is in his body because of anger which is eating up his heart (Bryan, 1930/1500 BCE, p. 129).

In the same section, the experience of fear and anxiety is described in this example:

When his heart trembles and there is much fat under his left breast, behold it is his heart which causes a little of the sinking because his disease is spreading. When his abdomen palpitates, it is caused by a swelling therein. (Bryan, 1930/1500 BCE, p. 129).

The Arab world also has a rich history of non-drug treatments for the symptoms of anxiety and depression that predates treatments used in the Western world. For



example, Arab physicians have used the primary Cognitive Behaviour Therapy (CBT) technique of cognitive restructuring (Beck, Rush, Shaw, & Emery, 1979) throughout history to treat psychological symptoms. Namely, information about cognitive restructuring strategies to treat psychological symptoms (e.g., anger, sadness, worry and obsessions) are recorded in books written by Al-Kindi (873/2002), (Al-Balkhi, 1479/2013), Rhazes (925/1950), Avicenna (1037/1984), Maimonides (1204/1964), and Razi (1209/1992), which have been translated or updated by Jayyusi-Lehn (2002), Badra (2013), Arberry (1950), Gruner, (1984), Bar-sela et al. (1964) and Ma'sumi (1992), respectively. For example, Al-Balkhi placed the primacy of cognitions as a maintaining factor of psychological symptoms in his description of his internal method by stating that:

One suffering from psychological disturbance can fight his symptoms internally by developing within the soul thoughts that neutralize the symptoms and desensitize their provocation (Al-Balkhi, 1479/2013, pp. 34-35).

In addition to providing some of the earliest known descriptors of symptoms and treatment of anxiety and depression, ancient Arab physicians also developed a systematic body of treatments, including a combination of supernatural and natural processes to help patients manage psychological symptoms (Mohit, 2001; Okasha, 2005). Moreover, evidence indicates that the ancient Arab world operated contrary to Western models of mind-body dualism and that Arab physicians perceived psychological symptoms to be at least as important as physical symptoms (Al-Balkhi, 1479/2013). Consistent with this holistic approach, one of the world's first hospitals, the *Bimaristan* that included specialist wards for people with mental disorders was built in Cairo in 872-873 (Carnevali & Masillo, 2007-2008; Gorini, 2007-2008).

Unfortunately, today the Arab world no longer appears as informed about the treatment of mental illness (Mohit, 2001). Moreover, due to the absence of epidemiological studies, little is known about the current mental health literacy or wellbeing of Arab people, particularly those who have moved from their original homeland, the *Diaspora*. The term *Arab people* refers to individuals of an Arabic-speaking background with origins from the 22 countries in the Arab world (Victorian Arabic Social Services, 2010). However, based on the internationally recognised and significant difficulties faced by Arab people and the limited availability of public mental health psychological services in the Arab world, it appears likely that there is a considerable and unmet need.

This thesis has three primary aims. First, it aims to contribute to knowledge about the psychological distress of Arab people in Australia and worldwide, including gaining information about the prevalence of psychological distress, barriers to treatment, and treatment seeking history and preferences. In this thesis, the terms emotional wellbeing and mental health will be used interchangeably. Second, it aims to evaluate innovative recruitment strategies that may increase Arab participation in mental health research and treatment. Finally, this thesis aims to evaluate the efficacy and acceptability of Internet-delivered CBT (iCBT) amongst Arab people who experience symptoms of anxiety and depression.

This chapter begins with a review of the prevalence and burden of anxiety and depression globally and in the Arab world. It then reviews the literature on barriers to mental health services, including barriers that are unique to Arab people. This chapter is followed by a review of Western mental health treatments for anxiety and depression, including Internet-delivered psychological treatments, with a focus on CBT. Finally, a review of the literature on the efficacy of culturally-adapted CBT and iCBT among Arab

populations is examined. The author's hope in preparing this thesis is to contribute to work that will enable greater access to help for Arab people with psychological difficulties.

## **1.2 Anxiety and Depression**

### **1.2.1 Prevalence of Anxiety and Depression**

The two most widely used psychiatric diagnostic and classification systems are the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) and the International Statistical Classification of Diseases and Related Health Problems (ICD-10; World Health Organisation, 1990). Large epidemiological surveys conducted by the World Health Organisation (WHO) using these systems of classification have revealed anxiety and depression to be amongst the most prevalent of mental disorders across the world (Kessler et al., 2009). The lifetime prevalence of anxiety and mood disorders across 17 countries have been estimated as approximately 16% and 12% respectively. However, these surveys indicate significant variability. For example, higher lifetime prevalence rates of anxiety and mood disorders have been found in Western and non-Western countries such as Australia (26% and 15%; Slade, Johnston, Oakley Browne, Andrews, & Whiteford, 2009), the United States (31% and 21%), New Zealand (25% and 20.4%), France (22% and 21%) and Columbia (25% and 15%) (Kessler et al., 2009). Overall, these surveys indicate that disorders of anxiety and depression are common across several countries.

Unfortunately, much less is known about the prevalence of anxiety and depression in the Arab world. To date, only five (i.e., Egypt, Iraq, Lebanon, Morocco and Qatar) of the 22 countries of the Arab world have examined the prevalence of mental

health disorders using epidemiological tools, and only three of these five surveys used a similar methodology to the aforementioned WHO surveys. The results are nonetheless instructive. These surveys revealed that the lifetime prevalence rates of anxiety and mood disorders were 17% and 13% in Lebanon (Karam et al., 2006), 8% and 14% in Iraq (Alhasnawi et al., 2009), and 17% and 17% in Qatar (Bener, Abou-Saleh, Dafeeah, & Bhugra, 2015). The use of different diagnostic and methodological tools makes it difficult to compare the results of the other two studies, which were conducted with samples from Morocco (Kadri et al., 2010) and Egypt (Ghanem, Gadallah, Meky, Mourad, & El-Kholy, 2009). Nevertheless, as a whole, these data indicate that anxiety and depressive disorders are prevalent in Arab countries and their prevalence appears to be comparable with Western countries.

An important limitation of the existing data is the absence of estimates of prevalence rates of anxiety and mood disorders in the Arab Diaspora, that is, Arab people who have migrated or sought refuge in Western countries. However, as a result of the significant difficulties faced in many countries of the Arab world, there has been a significant increase in the number of the Arab Diaspora worldwide. For example, in last 15 years, the Arab community living in Australia has grown by approximately 50% (Australian Bureau of Statistics, 2006, 2011) and is now the sixth largest group of immigrants comprising 1.4% of the total Australian population (Australian Bureau of Statistics, 2011). Large relative increases have also been reported in other Western countries including the United States of America (U.S.) where since 2000, the Arab population has increased by 25% and is now estimated as 0.5% of the total population (Asi & Beaulieu, 2013). To date, only three studies have examined the mental health of the Arab Diaspora and these studies have been limited to states or specific target groups, rather than nationally representative studies. First, in Michigan in the United States, one

study examined the suicide rate between 2000 and 2007, and found significantly lower suicide rates in Arab Americans compared with the non-ethnic American population (El-Sayed, Tracy, Scarborough, & Galea, 2011). They propose that these lower suicide rates may be explained by the religious beliefs among Arabs that suicide is *haram* (forbidden) and that families with individuals who have committed suicide may be ostracised by the community. Second, in Australia, a study that examined the mental health of Arab Australians born in Lebanon and living in the state of New South Wales found that 20% had elevated levels of psychological distress; a rate twice that of the general Australian population (Centre for Epidemiology and Research, 2010). Third, and also in Australia, a study of Iraqi refugees found they were two to five times more likely to be diagnosed with Post Traumatic Stress Disorder (PTSD) when compared to the general Australian population (Slewa-Younan et al., 2014). In addition, 39% of Iraqi refugees had symptoms of psychological distress in the extremely severe range compared with 10% of the Australian population (Australian Bureau of Statistics, 2008). In summary, there is important but comparatively limited information about the prevalence of anxiety and depression in the Arab world and Arab Diaspora. The available data does, however, indicate that higher levels of distress may be found in some subgroups (e.g., refugees) and the prevalence of anxiety and depression are likely to be at least as high as seen in Western populations.

### **1.2.2 Burden of Anxiety and Depression**

Throughout the world mental disorders such as anxiety and depression are recognised as having significant public health consequences including elevated levels of disability. For example, the Global Burden of Disease (2010) study conducted across 85 countries, concluded that mental disorders such as the anxiety and mood disorders

were amongst the leading causes of years lived with disability (YLD) and number of years lost because of illness, disability or premature death (DALY; Whiteford et al., 2013). Specifically, that study reported that anxiety and mood disorders themselves accounted for 14.6% and 47.5% of the 183.9 million DALYs attributed to mental disorders respectively (Whiteford et al., 2013). This finding is comparable to the DALYs associated with cancer related disease. These results highlight the significant and global burden of anxiety and depression.

Untreated anxiety and depression have been associated with a wide array of adverse life and health outcomes. For example, untreated anxiety and depression are associated with reduced educational attainment (Kessler, Foster, Saunders, & Stang, 1995), teenage parenthood (Kessler et al., 1997), marital instability (Kessler, Walters, & Forthofer, 1998) and low occupational and financial status (Kessler et al., 1997; Kessler et al., 1995; Kessler et al., 1998). In addition, mental health disorders can further complicate other health conditions. For example, it has been estimated that 33% of all the *days out of role* associated with chronic health conditions are, in fact, due to mental disorders in the U.S., and that this may also be the case in other Western countries (Kessler et al., 2009).

Anxiety and depression have also been found to have disabling effects on the Arab population. For example, the World Health Organisation found that mental and behavioural disorders accounted for 10.5 million DALYs in the Arab world (World Health Organisation, 2010). Moreover, consistent with Western countries, anxiety and major depressive disorders accounted for 17.3% and 39.9% of the 10.5 million DALYs respectively, in the Arab world (Mokdad et al., 2014). Furthermore, a comparison of 1990 and 2010 data found that major depressive and anxiety disorders had increased in rank from 8th to 5th and 23rd to 15th as leading causes of DALYs respectively, in the

Arab world (Mokdad et al., 2014). Thus, similar to other Western countries, Arab populations experience a significant loss of potential as a result of anxiety and depression, and the impact of these conditions appears to be increasing.

In summary, prevalence and burden of anxiety and depression in the Arab Diaspora and Arab world appear similar to Western countries. However, there is a lack of specific national data in many Arab countries and the Arab Diaspora, and this limits the ability to inform, plan and develop appropriate services for these populations in Western countries (e.g., Australia) and the Arab world. Consequently, an aim of this thesis is to examine psychological distress levels of Arab people living in Australia and the Arab world.

Given the high prevalence and considerable burden of anxiety and depression, access to effective treatments is essential for reducing long-term adverse life and health outcomes. Unfortunately, there are often considerable barriers to accessing mental health treatments and services. These barriers and related issues are discussed in the following section.

### **1.3 Barriers to Accessing Mental Health Treatments**

Information about barriers to accessing mental health care and treatment has been collected in 25 WHO World Mental Health surveys with over 121,000 participants from across 23 countries (Belgium, Brazil, Bulgaria, Colombia, France, Germany, India, Iraq, Israel, Italy, the Netherlands, New Zealand, Nigeria, Lebanon, Mexico, Portugal, People's Republic of China, Northern Ireland, Romania, South Africa, Spain, Ukraine, and the United States). These surveys found that the most common barriers to mental health care were, in order from most common; 1) low perceived need for professional

treatment; 2) attitudinal barriers, and; 3) structural barriers (Andrade et al., 2014). These barriers have considerable implications for the planning and delivery of mental health services and are discussed below.

With respect to the most commonly endorsed barrier, that is, low perceived need for professional treatment, of the respondents that met criteria for a 12-month disorder and reported no mental health service use, 60% reported no perceived need for professional treatment (Andrade et al., 2014). However, those with more severe conditions reported a greater perceived need for professional treatment (48%) compared to those with moderate (43%) and mild (31%) conditions. The second most common set of barriers reported were attitudinal barriers. For the overall sample in the WHO surveys, at least, one attitudinal barrier was reported by 96% of respondents who recognised a need for treatment but did not receive treatment. The most common attitudinal barriers were the following (Andrade et al., 2014): (1) wanting to manage the problem on their own (64% of respondents endorsed this barrier); (2) a belief that their problem was not severe (24%); (3) a belief it would get better on its own (16%); (4) perceived ineffectiveness of treatment (16%); and (5) stigma (8%). Finally, and with respect to structural barriers, the WHO surveys found that those respondents with more severe disorders (36%) who recognised a need for treatment and did not seek help endorsed structural barriers at a higher rate than those with mild disorders (16%). Specifically, they endorsed the following in order: (1) financial constraints (24%); (2) lack of availability of services (21%); (3) inconvenience of services (13%); and (4) transportation difficulties (11%).

In summary, even when people have clinical symptoms of anxiety and depression, many people report not needing professional help and a preference to



manage on their own. Moreover, even when they do decide they want treatment, many report practical barriers to accessing treatment.

### **1.3.1 Common and Culture-Specific Barriers to Accessing Mental Health**

#### **Treatments among Arab People**

##### **1.3.1.1 Common barriers.**

Research indicates that Arab populations not only experience similar barriers to accessing psychological treatments as other Western and non-Western populations, but also experience several unique barriers (Gearing et al., 2012). A systematic review of research focussed on barriers to accessing psychological treatment in Middle-Eastern Arab people, which included 22 studies across seven Arab countries (i.e., Egypt, Israel, Jordan, Kuwait, Palestine, Saudi Arabia, and United Arab Emirates), found that poor mental health literacy, attitudinal and structural barriers were commonly reported barriers in the Arab world (Gearing et al., 2012). Similar to the aforementioned findings of the WHO surveys (Andrade et al., 2014), the review found evidence of the following among Middle-Eastern Arab people (Gearing et al., 2012): (a) a low perceived need for professional mental health treatment; (b) similar attitudinal barriers of perceived ineffectiveness of, and stigma associated with psychological interventions; and (c) similar structural barriers of financial constraints, transport difficulties and lack of availability of appropriate mental health services. However, the same review also indicated there are a number of specific barriers to treatment, which are unique to Arab populations (Gearing et al., 2012).

### **1.3.1.2 Culture-specific barriers.**

#### ***1.3.1.2.1 Gender norms.***

Gender norms and related beliefs have been identified as one unique barrier to treatment, especially among some female Arab populations (Gearing et al., 2012). For example, some of these gender-related beliefs dictate that females must be accompanied by their husbands in public, which can limit their access to professional help in instances where they do not want their husband to know about their difficulties or if their husband is unwilling or unable to accompany them to treatment (Al-Krenawi & Graham, 1999; Gearing et al., 2012). Moreover, because of the stigma associated with mental illness, females who experience mental illness and seek treatment could damage their reputation and marriage prospects or impact their current marital relationships (Al-Krenawi & Graham, 1999; Gearing et al., 2012; Shalhoub-Kevorkian, 2005), and so may not seek help. Thus, compared to males in the Arab world, females experience additional stigma when experiencing mental illness and seeking treatment.

#### ***1.3.1.2.2 Aetiology of mental illness.***

Culture-specific beliefs associated with aetiology of mental illness are another set of barriers unique to Arab populations. For example, many Arab people believe that mental illness is caused by the affliction of supernatural processes, such as *jinn* (evil spirits or the devil), *Hassad* (evil-eye), or *Sehr*, (curse or magic) (Al-Darmaki, Thomas, & Yaaqeib, 2016; Al-Sahel & Al-Khawajah, 2012). Consequently, many Arab people believe that healing or the treatment of mental illness is the domain of religious and traditional healers (Al-Darmaki, 2011; Al-Darmaki et al., 2016; Al Riyami, Al Adawi, Al Kharusi, Morsi, & Jaju, 2009), and thus, have a preference for traditional/religious healers over mental health professionals.

#### ***1.3.1.2.3 Recruitment to mental health research.***

A third group of barriers for Arab populations relates to the under-representation of Arab participants in clinical trials, which means there is limited information about the efficacy of psychological treatments with Arab populations (Hussain-Gambles, Atkin, & Leese, 2004; Redwood & Gill, 2013). Consequently, clinicians treating Arab populations may not be confident using standard non-adapted treatments that have been developed for Western populations. This under-representation indicates the importance of reducing barriers associated with recruiting Arab people to mental health research. Reports indicate that Arab people are reluctant to participate due to barriers such as limited trust, stigma, religious beliefs, gender, and fear of deportation (Brown, Marshall, Bower, Woodham, & Waheed, 2014). Fortunately, there is emerging evidence that suggests non-traditional recruitment strategies such as social media may be more effective than traditional recruitment strategies such as email, print and TV media for some migrant groups (Ünlü Ince, Cuijpers, van 't Hof, & Riper, 2014). However, to date, no studies have compared the effectiveness of traditional or non-traditional recruitment strategies in reducing barriers and increasing participation of Arab populations in mental health research. Consequently, the second aim of this thesis is to examine strategies for increasing participation of Arab people in mental health research.

#### ***1.3.2.1.4 Summary of barriers.***

This review suggests that many of the attitudinal and structural barriers to treatment experienced by Arab people are similar to those experienced by Western populations. However, Arab people and particularly Arab women face culture-specific barriers of gender norms and attributions of mental illness to supernatural processes that may reduce the acceptability of Western psychological interventions.

## **1.4 Treatments for Anxiety and Depression**

This section summarises the efficacy of pharmacological and psychological treatments for anxiety and depression, beginning with pharmacological treatments. It then reports the outcomes of face-to-face and Internet-delivered treatments for Western populations before discussing issues in the use of these treatments with Arab populations. Finally, it reviews the empirical evidence for Internet-delivered CBT (iCBT) in the treatment of anxiety and depression among Arab populations.

### **1.4.1 Psychopharmacological Treatments**

Several types of psychopharmacological treatments have been shown to be clinically effective for anxiety and depression. The most frequently prescribed medications are selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine inhibitors (SNRIs), monoamine oxidase inhibitors, tri-cyclic antidepressants (TCAs), benzodiazepines, anti-psychotics and anti-convulsants (Ravindran & Stein, 2009; Rush & Nierenberg, 2009). Of these medications, SSRIs are recommended for the treatment of anxiety and depression because of their lower risk of side-effects and higher tolerability to patients (National Institute for Health and Clinical Excellence, 2015a, 2015b). A recent meta-analysis comparing psychopharmacological treatment with placebo-based controls found that for the treatment of depression, SSRIs (Odds Ratio (*OR*) = 1.69) and TCAs (*OR* = 1.75) have the most empirical support for effectiveness in primary care settings (Linde et al., 2015). Consistent with this meta-analysis, another meta-analysis comparing psychopharmacological treatment with placebo-based controls for the treatment of anxiety found the SSRI, Fluoxetine, was the most effective (61% remission), and the SSRI, Sertraline, (49% tolerability) was the

most tolerable when compared with other SSRIs and SNRIs (Baldwin, Woods, Lawson, & Taylor, 2011). However, although pharmacological treatments have been shown to be effective at reducing symptoms of anxiety and depression, high relapse rates are known to follow cessation (National Institute for Health and Clinical Excellence, 2009b). This relapse risk has led to recommendations to combine pharmacological treatments, wherever possible, with psychological treatments as combining treatments is known to significantly reduce the risk of relapse and to have clinical effects that persist well after treatment cessation (National Institute for Health and Clinical Excellence, 2009b).

#### **1.4.2 Face-to-Face Psychological Treatments**

##### **1.4.2.1 CBT and Western populations.**

Meta-analyses have shown that psychological treatments such as CBT are an effective form of treatment for anxiety disorders and depression (Butler, Chapman, Forman, & Beck, 2006; Cuijpers, 2015; Cuijpers et al., 2014; Cuijpers et al., 2013; Cuijpers, van Straten, Andersson, & van Oppen, 2008; Stewart & Chambless, 2009) in Western populations when delivered in a traditional face-to-face format. CBT is defined here as a structured approach that employs cognitive and behavioural techniques for reducing symptoms of anxiety and depression, derived from cognitive and behavioural models of anxiety and depression. It is important to note that meta-analyses indicated that CBT has at least similar if not superior efficacy as other psychological treatments (Marcus, O'Connell, Norris, & Sawaqdeh, 2014; Wampold et al., 1997). Hence, CBT will be the treatment focused on in this thesis.

#### **1.4.2.2 CBT and Arab people.**

Before examining evidence from clinical trials exploring the efficacy of CBT with Arab populations, this section will consider issues relating to models of cultural adaptation and evidence for the cultural fit of CBT with Arab culture and beliefs.

##### ***1.4.2.2.1 Models of cultural adaptation.***

A key question faced by clinicians working with non-Western groups is the nature and amount of cultural adaptation required to maintain the acceptability and efficacy of Western developed treatments (Bernal & Domenech Rodríguez, 2012). Cultural adaptation has been defined as “the systematic modification of an evidence-based treatment or intervention protocol to consider language, culture, and context in such a way that it is compatible with the client’s cultural patterns, meanings, and values” (Bernal, Jimenez-Chafey, & Domenech Rodriguez, 2009, p. 362). There are two broad positions regarding the necessity for cultural adaptation: the nomothetic (generalised) position and the idiographic (individualised) position. The nomothetic position proposes that cultural adaptation is not necessary as there are consistencies in the way individuals respond to psychological interventions and the same treatment protocol is effective for all cultures (Tharp, 1991). In contrast, the idiographic position proposes that cultural adaptation is necessary and that treatment needs to be tailored to the unique cultural expression of psychological distress (Hinton & Lewis-Fernández, 2010; Nichter, 1981) associated with each specific culturally and linguistically diverse (CALD) group (Tharp, 1991). In Australia, the term CALD is a “broad and inclusive descriptor for communities with diverse language, ethnic background, nationality, dress, traditions, food, societal structures, art and religion characteristics” (Ethnic Communities Council Victoria, 2016, p. 1). The term CALD is synonymous with the term ethnic communities and will be used throughout this thesis.

Several models of cultural adaptation, which reflect these positions have been developed in the last 20 years. These models include the ecological validity model (EVM; Bernal, Bonilla, & Bellido, 1995), the cultural accommodation model (CAM; Leong, 1996), the cultural sensitivity framework (CSF; Resnicow, Soler, Braithwaite, Ahluwalia, & Butler, 2000), the cultural adaptation process model (CAPM; Domenech Rodriguez & Weiling, 2005), the selective and directed treatment adaptation framework (SDTAF; Lau, 2006), the heuristic framework (M. Barrera & Castro, 2006), and the formative method for adapting psychotherapy (FMAP; Hwang, 2009). All of these models and frameworks aim to describe how evidence-based treatments (EBTs) originally developed for Western populations can be modified for safe and effective use with people of different CALD groups. However, differences between these models include different emphases on how to adapt content and process, or how the interventions should be administered. For example, the EVM and CSF emphasise adapting content by providing researchers with a list of potential targets for content adaptation (Bernal et al., 1995) and also propose a method of differentiating between surface (i.e., people, places, language, food, music etc. ) and deep (i.e., changes in content and method of intervention to incorporate cultural values and context) level adaptations (Resnicow et al., 2000). In contrast, models such as the CAM, the SDTAF, and the FMAP, share in common a focus on the “how to adapt” and provide guidelines of the key processes that need to be considered when adapting interventions. In addition, models such as the CAPM consider both the content and processes of cultural adaptation.

Whilst all of these models having important merits there have been no systematic attempts to compare the relative strengths and weakness of each model. As a result, there is no widely accepted approach to the cultural adaptation of Western psychological

interventions for other populations (Domenech Rodríguez & Bernal, 2012a). Domenech and colleagues (2012b) note that this situation may reflect that many of these models were developed around the same time and that there appeared to be little knowledge by the creators of the other models (Domenech Rodríguez & Bernal, 2012b). Notwithstanding the absence of systematic comparisons of these approaches, the model of cultural adaptation that arguably has the most rigorous emerging evidence base is the selective and directed treatment adaptation framework (Lau, 2006, 2012; Lau, Fung, Ho, Liu, & Gudiño, 2011; McCabe, Yeh, Lau, & Argote, 2012).

Unlike other models and frameworks, the SDTAF approach starts with the premise that cultural adaptation is not always necessary and that sometimes adaptations can lead to “impoverished drifts away from fidelity that may be inert or even detrimental to treatment outcomes” (Lau, 2012, p. 133). The SDTAF suggests researchers test this premise by empirically examining the generalizability of a non-adapted EBT to the target CALD community before considering adaptation (Lau, 2006). If the EBT is not generalizable, then the SDTAF offers a pragmatic approach that selects and directs cultural adaptation when there is empirical data to support such adaptation. SDTAF’s selective component proposes that cultural adaptation is necessary when there is evidence of a poor fit between EBT and the targeted CALD community. In addition, the framework suggests that if there is empirical evidence for the existence of protective factors against the development of clinical problems, the approach selects and mobilises naturally occurring resources within the target CALD community in the adaptation process (Lau, 2012). For example, in Western (Bonelli & Koenig, 2013) and Arab (Wahass & Kent, 1997; Younis, Al-Noaimi, & Al-Dabass, 2012) people who have religious beliefs, religious involvement including prayer, religious social support, acts of charity, and attending religious ceremonies have been found to be protective factors



for better mental health. Hence, the SDTAF approach would endorse referencing and encouraging these activities in an intervention with these CALD groups. In summary, the SDTAF framework appears to have the potential for informing the cultural adaptation of Western psychological treatments for Arab populations.

#### ***1.4.2.2.2 Potential of CBT for Arab people.***

Two factors have been identified that are likely to facilitate the use of CBT with Arab people. First, Arab mental health professionals have observed that Arab people prefer short-term and directive psychological treatments with a focus on practical skills, but which do not require the in-depth discussion of personal experience (Abudabbeh & Hays, 2006; Al-Krenawi & Graham, 2000; Chaleby, 1992). Second, the principles of CBT are consistent with the principles of the Islamic tradition (Al Hadi, Algahtani, & Salem, 2012; Thomas & Ashraf, 2011) that is important given that approximately 90% of Arab people are Muslim (Pacini, 1998). For example, the widely known Islamic concept of *Husn al-Dhun*, or maintaining a good opinion about God, others and the future (Thomas & Ashraf, 2011, p. 186) is compatible with the CBT principles of challenging negative cognitions about oneself, the world and the future. For example, maintenance of a good opinion requires a process of identifying and challenging negative opinions about God, others and the future.

#### ***1.4.2.2.3 Studies reporting the use of CBT with Arab people.***

To date, 28 studies ( $N > 2,300$ ; see Tables 1.1 - 1.3) have examined the efficacy of CBT and related interventions with Arab populations (Neuner et al., 2008; Veronese, Said, & Castiglioni, 2014). As indicated in Tables 1.1 to 1.3, most 71% (20/28) of these studies were conducted in Arab countries and 29% (8/28) with Arab people living in Western countries. In total these studies have included a broad range of age groups (i.e.,

10 -73 years) with similar rates of males and females. With respect to design, 36% of the research designs were RCTs and 32% single group open trials, 54% employed a one-to-one treatment format and 46% group-based treatment format. Approximately 43% of the studies targeted PTSD and trauma-related conditions, and 40% specifically targeted depression or anxiety.

Overall, the studies summarised in Tables 1.1 to 1.3 provide encouraging, though preliminary evidence for the efficacy and acceptability of CBT for Arab people living in the Arab world and the Arab Diaspora. These results indicate that dropout rates in these trials ranged from 0 to 40%, with an average of 9% indicating good overall acceptability (van Ballegooijen et al., 2014). Results for the efficacy of the tested CBT interventions were also promising with 89% (25/28) of the studies reporting a statistically significant reduction in psychological symptoms at posttreatment. Consistent with these findings, 83% (10/12) of the studies that collated follow-up data reported that reductions of psychological symptoms were maintained at follow-up. Furthermore, 36% (10/28) of the trials reported diagnostic remission rates (i.e., no longer met diagnostic criteria) and of those trials the mean remission rate was 43%.

A second and important observation about the studies summarised in Tables 1.1 to 1.3 is that none of the studies made explicit mention of any of the aforementioned cultural adaptation models, and all studies utilised the core techniques of CBT with minor cultural modifications. Nevertheless, the two most salient dimensions described by researchers in their cultural adaptation of CBT were language, with 89% reporting having translated the intervention into Arabic, and personnel, with 82% using Arabic-speaking clinicians. Other less frequently reported modifications included changing content to incorporate values and/or traditions (18%), culturally relevant metaphors (18%) and context (14%).

In summary, these studies indicate that CBT appears to be an acceptable and effective psychological treatment for Arab people and the Arab Diaspora. Further, these studies also indicate that although it is important that CBT treatments are adapted to ensure Arab people can understand them, deeper level adaptation may not be necessary. If subsequently shown to be accurate, this surface level of adaptation reduces an additional barrier to making interventions available to Arab people.

Table 1.1

*Summary of CBT Studies of Arab People with PTSD, Anxiety or Depressive Disorders*

| Authors                            | Design              |  |  | Sample   | Results                           |   |
|------------------------------------|---------------------|--|--|--|-----------------------------------|---|
|                                    | Conditions<br>(n)   | Treatment Duration<br>(design, primary<br>measure)         | Cultural Adaptation  |  | Drop out (%)<br>Posttreatment DRR | Posttreatment and Follow-up†<br>(C or ITT, Effect Size) |
| Alatiq (2014)                      | CBT (4)             | 8 to 15 weekly or bi-weekly sessions<br>(CS, BDI and BAI)  | Arabic translation, Arabic-speaking clinicians, technical adjustments not adaptations were made (e.g. greater emphasis on psychoeducation, e.g., increase understanding of psychological factors related to mental illness as opposed to superstitious beliefs about mental illness) | Saudi females comorbid<br>(4, 29.8, 100%, Saudi Arabia)          | Dropout ns<br>DRR ns              | Reduction in BDI and BAI<br>follow-up ns<br>(NA)        |
| Al Saif and Almoshawah (2014)      | CBT (7)<br>TAU (7)  | 8 x 60 min weekly group<br>(n=7) sessions<br>(RCT, BDI)    | Arabic translation, Arabic-speaking clinicians, no explicit cultural adaptation processes reported   | Saudi females with breast cancer<br>(14, ns, 100%, Saudi Arabia) | CBT (0%)<br>TAU (0%)<br>DRR ns    | CBT = TAU<br>follow-up ns<br>(ns)                       |
| Barron, Abdallah, and Smith (2013) | CBT (90)<br>WL (50) | 5 x 90 min weekly group<br>(n=10) sessions<br>(RCT, CRIES) | Arabic translation, Arabic-speaking clinicians, no explicit cultural adaptation processes reported   | School children<br>(140, 11.9, 43%, Palestine)                   | CBT (0%)<br>WL (0%)<br>CBT (67%)  | CBT > WL<br>follow-up ns<br>(ns)                        |

|                                      |   |   |  |  |   |   |
|--------------------------------------|---|---|--|--|---|---|
| Bolton et al. (2014)                 | CPT (114)<br>BA (101)<br>WL (66)                      | 8 – 12 weekly sessions<br>(RCT, HSCL-25)                        | Arabic translation, Arabic-speaking clinicians, adaptation for low literacy and poverty levels, and included information about societal expectations around acceptable and unacceptable activities, and discussion of values was more collectivist | Kurdish survivors of Trauma<br>(281, 40.2, 58%, Iraq)        | CPT (21%)<br>BA (28%) WL (18%)<br>DRR ns      | BA > CPT > TAU<br>follow-up ns<br>(C, 0.44 – 0.84)      |
| Damra, Nassar, and Ghabri (2014)     | TF-CBT (9)<br>WL (9)                                  | 10 X 60-min bi-weekly sessions<br>(RCT, PTSS-C)                 | Arabic translation, Arabic-speaking clinicians, Adaptations included matching parent and child on gender   | Boys victims of abuse<br>(18, 11.3, 0%, Jordan)              | TF-CBT (0%)<br>WL (05)<br>TF-CBT 40%<br>WL 3% | TF-CBT > WL<br>Maintained at 4 mo<br>(C, 4.43)          |
| Dhamrah and Abueita (2014)           | TF-CBT+MT (12)<br>TF-CBT (12)<br>MT (12)<br>CTRL (12) | ns group (n=14) sessions<br>(nRCT, PTSS-C)                      | Arabic translation, Arabic-speaking clinicians   | Syrian children war-related trauma<br>(48, 10-12, ns, Syria) | Dropout ns<br>DRR ns                          | TF-CBT + MT > TF-CBT, MT > CTRL<br>follow-up ns<br>(ns) |
| El Kady, Ibrahim, and Mohamed (2012) | CBT (133)   | 4 x 30 min group (n= 7-10) sessions over a week<br>(SGOT, PSQI) | Arabic translation, Arabic-speaking clinicians, no explicit cultural adaptation processes reported   | Institutionalised older adults<br>(133, 72.2, 54%, Egypt)    | CBT (0%)<br>DRR (17%)                         | Sleep quality improved<br>follow-up ns<br>(ns)          |

|   |                            |   |  |   |  |  |
|---|----------------------------|---|--|---|--|--|
| Farhood, Richa, and Massalkhi (2014)      | CBT (10)                   | 8 x 60-mins group sessions<br>(SGOT, Qualitative measure of satisfaction) | Arabic translation, Arabic-speaking clinicians, adapted to Lebanese culture and inclusion of content from the WHO training sessions in Arabic language with no examples reported | War-related trauma<br>(10, 40.6, 80%, Lebanon)    | CBT (0%)<br>DRR ns   | Satisfaction with CBT reported follow-up ns<br>(ns)  |
| Habib and Seif El Din (2007)              | CBT (17)                   | 9 x 60-90 min weekly sessions<br>(SGOT, CDI, CSEI)                        | Arabic translation, Arabic-speaking clinicians used  | School Children<br>(17, 12-14, 59%, Egypt)        | CBT (6%)<br>DRR ns   | Significant improvements in depressive and self-esteem symptoms<br>Maintained 3 mo<br>(C, 2.5) |
| Hamdan-Mansour, Puskar, and Bandak (2009) | CBT (44)<br>CTRL (40)      | 10 x 45 min weekly group (n=11) sessions<br>(RCT, BDI)                    | Arabic translation, Arabic-speaking clinicians, cultural variations considered but no examples reported.   | University Students<br>(84, 17-24, 45%, Jordan)   | Dropout ns<br>DRR ns   | CBT > CTRL<br>Maintained at 3 mo<br>(C, 1.59)  |
| Hamdan-Mansour et al. (2011)              | CBT (32)                   | 5 x 60 min + 3 x 120 min weekly group (n=10-11) sessions<br>(SGOT, BDI)   | Arabic translation, Arabic-speaking clinicians, adaptation involved development of community action against Intimate Partner Abuse.  | Females reporting IPA<br>(32, 32.4, 100%, Jordan) | Dropout ns<br>DRR ns   | Reduction in depressive symptoms.<br>follow-up ns<br>(C, 0.78)                                 |
| Karam, Fayyad, et al. (2008)              | CBT+SIT (116)<br>CTRL (93) | 12 x 60 min daily sessions<br>(QED, DICA-R for MDD, SAD, PTSD)            | Arabic translation, Arabic-speaking teachers, war-context considered   | School children<br>(209, 11.8, 50%, Lebanon)      | Dropout CBT+SIT (0%)<br>CTRL (0%)<br>DRR CBT+SIT (99%)<br>CTRL (98%) | CBT+SIT = CTRL<br>Maintained at 12 mo<br>(ns)  |

|   |                          |   |  |   |                                    |  |
|---|--------------------------|---|--|---|------------------------------------|--|
| Malik and Ouafia (2010)                     | CBT (30)<br>TAU (ns)     | 8 x (ns) weekly group<br>(ns) sessions<br>(RCT, HAS)                | French translation, French-speaking clinicians, and no adaptation reported   | Algerian inpatients<br>(30, ns, ns, Algeria)            | Dropout ns<br>DRR ns               | CBT > TAU<br>follow-up \<br>(ns)                                       |
| Murray et al. (2014)                        | Transdiagnostic CBT (12) | 5-13 X 60 min individual sessions<br>(SGOT, HSCL-25, HTQ)           | Arabic translation, Arabic-speaking clinicians, adaptation involved tailoring analogies and example situations to local context (e.g. graded exposure of women fear of making bread, which is critical for the family) | Iraqis with comorbid presentation<br>(12,45, 25%, Iraq) | Transdiagnostic CBT<br>(8%) DRR ns | Reduction in PTSD, depression and anxiety<br>follow-up ns<br>(C, 3.33) |
| Qouta, Palosaari, Diab, and Punamäki (2012) | CBT (242)<br>WL (240)    | 8 x 120 mins bi-weekly group (n=15) sessions<br>(RCT, CRIES)        | Arabic translation, Arabic-speaking clinicians, adapted for suit war situation   | School children<br>(482, 11.3, 49%, Palestine)          | CBT (0%)<br>WL (0%)<br>DRR ns      | CBT > WL<br>CBT = WL at 6 mo<br>(C, 1.04)                              |
| Yahav and Cohen (2008)                      | CBT (36)<br>CTRL (20)    | 60-mins weekly group (n=15-18) sessions over 8 weeks<br>(RCT, STAI) | Arabic translation, Arabic-speaking clinicians, tailored for Arab-Israeli adolescents  | Arab Israeli adolescents<br>(56, 14.8, 54%, Israel)     | CBT (0%)<br>CTRL (0%)<br>DRR ns    | CBT > CTRL<br>Follow-up<br>(C, 0.80)                                   |

*Note.* † = Statistically significant differences between groups on the primary outcome measure; BA = Behavioural Activation Treatment; BAI = Beck's Anxiety Inventory; BDI = Beck's Depression Inventory; BP = Bipolar Disorder; C = Completer Analysis; CAPS = Clinician-administered PTSD Scale; CBTArb = Arab Australians receiving CBT; CBTAus = Australians receiving CBT; CDI = Children's Depression Inventory; CS = Case Study; CSEI = Coopersmith Self-Esteem Inventory; CPT = Cognitive Processing Therapy; CRIES = Children's Revised Impact of Events Scale; CTRL = Control group; DASS-21 = Depression Anxiety Stress Scale – 21-item version; DICA-R = Diagnostic Interview for Children and Adolescents- Revised; DRR = Diagnostic Remission Rate; F% = percentage of Females in sample; HAS = Hamilton Anxiety Scale; HSCL-25 = Hopkins Symptom Checklist for Depression and Anxiety; HTQ = Harvard Trauma Questionnaire; IPA = Intimate Partner Abuse; ITT = Intent-to-treat analysis;; MDD = Major Depressive Disorder; mo = month; MT = Music Therapy; n = number of participants in each treatment condition; N = number of participants in the total sample; NA = not applicable; NET = Narrative exposure therapy; nRCT = non-randomised control trial; ns = not stated; PD = Panic Disorder; PDS = Posttraumatic Stress Diagnostic Scale; PSQI = Pittsburgh Sleep Quality

Index; PTSS-C = Posttraumatic Stress Symptoms – Child version; PTSD = Posttraumatic Stress Disorder; QED = Quasi-experimental design; SAD = Separation Anxiety Disorder; SIT = Stress Inoculation Therapy; SGOT = Single group open trial; STAI = State and Trait Anxiety Inventory; TAU = Treatment as usual; TF-CBT = Trauma Focused Cognitive Behavioural Therapy; WL = Waiting List.



Table 1.2

*Summary of CBT studies of the Arab Diaspora with PTSD, Anxiety or Depressive Disorders*

| Authors  | Design                |  |   | Sample   | Results                           |   |
|--|-----------------------|--|---|--|-----------------------------------|---|
|  | Conditions<br>(n)     | Treatment duration<br>(design, primary<br>measure)       | Cultural Adaptation   |  | Drop out (%)<br>Posttreatment DRR | Posttreatment and Follow-up†<br>(C or ITT, Effect Size)                           |
| Knipscheer (2011)  | EMDR +<br>CBT (1)     | Individual therapy<br>(CS)                               | No Arabic translation, Dutch-speaking clinician, and adaptation involved use of metaphors and sayings from Quran. | Moroccan Male<br>(1, ns, ns, 0%, Netherlands)                                  | Dropout ns<br>DRR ns              | Posttreatment ns<br>follow-up ns<br>(NA)  |
| McIndoo and Hopko<br>(2014)  | Manualised<br>CBT (1) | 14 x 60-mins individual<br>sessions<br>(CS, BAI, BDI)    | No cultural adaptation reported as individual was assess as being acculturated.                                   | Arab-college student with<br>social phobia and depression<br>(1, 26, 0%, U.S.) | Dropout ns<br>DRR ns              | Reduction in symptoms of<br>social anxiety and depression<br>follow-up ns<br>(NA) |
| Mirabel-Sarron, Siobud-Dorocant, Cheour-Ellouz, Kadri, and Guelfi (2006) | CBT (34)              | 20 x 60-mins sessions<br>(SGOT, Medication<br>adherence) | French translation, French-speaking clinicians, no cultural adaptation reported.                                  | Patients with BP<br>(34, ns, 74%, France, Tunisia, Morocco)                    | Dropout ns<br>DRR ns              | Improved medication adherence as<br>compared at baseline<br>follow-up ns<br>(ns)  |

|  |                 |  |   |   |                  |   |
|--|-----------------|--|---|---|------------------|---|
| Stenmark, Catani, Neuner, Elbert, and Holen (2013) | NET (51)        | 16 x 45-60 min sessions                  | If not fluent in Norwegian or English certified translators were used (but no adaptation reported)  | Arab refugees<br>(81, 35, 31%, Norway)                  | Dropout NET (0%) | NET > TAU<br>Maintained at 6mo<br>(C, 2.50) |
|  | TAU (30)        | (RCT, CAPS)                              |   |   | TAU (0%)         |   |
| Taloyan, Alinaghizadeh, and Löfvander (2013)       | CBT (209)       | 4 x group sessions                       | No cultural adaptation reported but interpreter used for group CBT to reduce back pain  | Arab people with backache<br>(209, 35.5, 59%, Sweden)   | CBT (14%)        | Reduction in depression, pain-related worry |
|  | 20% Middle East | (SGOT, VAS)                              |   |   | DRR ns           | Follow-up ns<br>(ns)                        |
| R. Wagner, Derrick, Claire, and Jackie (2008)      | CBTArb (50)     | 8 x 60-mins group or individual sessions | No Arabic translation used for CBT group but bilingual psychologist used for individuals with poor English literacy, no cultural adaptation reported. | Australian Arabs with PD<br>(100, 31.2, 74%, Australia) | CBTArb (10%)     | CBTAus > CBTArb                             |
|  | CBTAus (50)     | (QED, DASS-21)                           |   |   | CBTAus (18%)     | CBTAus=CBTArb at 2 mo<br>(C, 0.25 - 0.37)   |
|  |                 |  |   |   | DRR ns           |   |

*Note.* † = Statistically significant differences between groups on the primary outcome measure; BAI = Beck's Anxiety Inventory; BDI = Beck's Depression Inventory; BP = Bipolar Disorder; CAPS = Clinician-administered PTSD Scale; CBTArb = Arab Australians receiving CBT; CBTAus = Australians receiving CBT; CS = Case Study; DASS-21 = Depression Anxiety Stress Scale – 21-item version; DRR = Diagnostic Remission Rate; EMDR = Eye Movement Desensitisation and Reprocessing; F% = percentage of Females in sample; ITT = Intent-to-treat analysis;; mo = month; n = number of participants in each treatment condition; N = number of participants in the total sample; NA = not applicable; NET = Narrative exposure therapy; ns = not stated; PD = Panic Disorder; QED = Quasi-experimental design; RCT= Randomised Control Trial; SGOT = Single group open trial; TAU = Treatment as usual; VAS = Visual Analogue Scale; WL = Waiting List.

### **1.4.3 Internet-Delivered Treatments**

One relatively recent innovation with the potential to significantly improve access to psychological treatments is their delivery via the Internet. In the past 15 years, there has been a significant growth in research into the efficacy and effectiveness of Internet-delivered treatments in Western countries (Hedman, Ljótsson, & Lindefors, 2012). A broad range of therapeutic models have been delivered via the Internet, including psychodynamic (Andersson et al., 2012; Johansson et al., 2013; Johansson, Ekbladh, et al., 2012), acceptance and commitment therapy (Bohlmeijer, Fledderus, Rokx, & Pieterse, 2011; Carlbring et al., 2013; Lappalainen, Langrial, Oinas-Kukkonen, Tolvanen, & Lappalainen, 2015), problem solving (Hoek, Schuurmans, Koot, & Cuijpers, 2012; Kleiboer et al., 2015), interpersonal therapy (Dagöo et al., 2014; Donker et al., 2013), and mindfulness (Boettcher et al., 2014; Thompson et al., 2010). However, to date, the majority of studies of Internet-delivered psychological treatments have evaluated the Internet delivery of CBT (iCBT).

iCBT treatments are highly structured interventions, which deliver similar content as face-to-face delivered CBT. iCBT typically comprise systematically presented online lessons or modules, homework and supplementary resources (Titov, 2011). iCBT can be delivered in several ways, including with or without clinician support, that is, in a clinician-guided or self-guided format. In clinician-guided iCBT treatments, contact between the patients and clinician may occur via telephone, secure email or via online forums. The role of the clinician in iCBT is typically less intense than in traditional face-to-face CBT where the clinician does most of the teaching of content. In iCBT, because the treatment materials provide much of the education, the role of the clinician is conceptualised as that of a “guide”, who provides support and encouragement, answer questions, clarifies content contained in the treatment and

provides feedback (Andersson, 2009). In self-guided iCBT treatments, contact between patients and clinicians does not occur during treatment (Titov et al., 2010) but can occur before and after treatment for diagnostic and assessment purposes. However, self-guided treatment may also be fully automated, where no contact occurs between patients and clinicians before, during or after treatment (Christensen, Griffiths, Mackinnon, & Brittliffe, 2006).

#### **1.4.3.1 Advantages and disadvantages of iCBT.**

iCBT has several unique advantages over traditional face-to-face treatments. For example, because it does not require clinicians and patients to be physically present together in one location, iCBT may reduce barriers relating to geographical distance and the lack of mental health services in remote and rural areas (Barak, Klein, & Proudfoot, 2009). Second, by being accessible outside of usual business hours, iCBT may reduce time-related barriers to treatment and allow patients to access treatment at times that are convenient to them (Cuijpers et al., 2009). Third, iCBT may increase the capacity of mental health services by introducing significant efficiencies of delivery relative to face to face delivered CBT. Thus, reducing the time required to deliver high quality care, and increasing the number of people who can receive services (Andrews, Davies, & Titov, 2011; Hedman, Andersson, Ljótsson, Andersson, Rück, Mörtberg, et al., 2011; B. Wagner, Horn, & Maercker, 2014). Fourth, and related to the previous advantage, iCBT requires less clinician time than traditional face-to-face treatments and, thus, is relatively cost-effective (Donker et al., 2015; Hedman, Andersson, Ljótsson, Andersson, Rück, & Lindefors, 2011; Hedman, El Alaoui, et al., 2014). Fifth, iCBT is associated with high treatment fidelity, as the structured and relatively fixed nature of the content ensures that

patients are given the same information and taught the same skills to manage psychological symptoms (Titov, 2011).

iCBT may also reduce attitudinal barriers to seeking and receiving treatment. For example, self-guided iCBT may enable individuals who prefer to manage their own symptoms, a common attitudinal barrier reported in the aforementioned WHO surveys (Andrade et al., 2014), to still access evidence-based information about their symptoms and provide exposure to efficacious skills for managing their symptoms. Second, iCBT offers the advantage of privacy and anonymity because it does not require patients to attend a physical treatment facility (Farrer, Christensen, Griffiths, & Mackinnon, 2012). This advantage of privacy may be particularly helpful for conditions and populations where stigma and other attitudinal factors significantly affect treatment seeking. For example, it may enable Arab females to access treatment from their own home and, thus, alleviate concerns about reputational damage and the need to let the family know about their difficulties in order to attend treatment. Third, iCBT may reduce attitudinal barriers by increasing mental health literacy, by virtue of providing evidence-based and accessible information about psychological symptoms and practical skills to manage these symptoms.

It should be noted, however, that iCBT have a number of outstanding issues and disadvantages. First, use of iCBT requires minimum reading skills, some computer skills, and access to relevant Internet services and hardware. These requirements may limit access to people already disadvantaged by the so called digital divide (Kontos, Blake, Chou, & Prestin, 2014; Levy, Janke, & Langa, 2015). Second, the typical requirement for disclosing personal information over the Internet may serve as a barrier for some people (Metzger, 2004), particularly given concerns about cyber security and privacy. Third, an outstanding issue is that little is known about how best to integrate

iCBT into existing mental health services. It has been proposed that iCBT can be made available as an initial and low-intensity option, that is, a service which does not require significant resources (Bennett-Levy, Richards, & Farrand, 2010; van Straten, Hill, Richards, & Cuijpers, 2015), within a stepped care system. These challenges, and related issues are addressed later in this thesis. However, notwithstanding these challenges, iCBT offers several advantages for increasing access, particularly for patients who might not otherwise receive evidence-based care.

#### **1.4.3.2 The efficacy and effectiveness of iCBT in Western samples.**

A large number of controlled and uncontrolled trials have examined the efficacy and effectiveness of iCBT for anxiety and depression. These trials have explored important issues including the efficacy of disorder-specific iCBT, the potential of tailored or transdiagnostic iCBT treatments that simultaneously treat multiple disorders, the relative efficacy of iCBT treatments and traditional face-to-face treatments, and the effectiveness of iCBT in routine care. Until recently, the majority of research evaluating iCBT has been concerned with evaluating the efficacy of disorder-specific iCBT interventions for specific anxiety and depressive disorders. Meta-analyses of such studies have consistently indicated that disorder-specific iCBT is efficacious for multiple disorders including generalised anxiety disorder, social anxiety disorder, panic disorder, depressive disorder, specific phobia, obsessive-compulsive disorders, eating disorders, and major depressive disorder (Andersson & Cuijpers, 2009; Andersson, Cuijpers, Carlbring, Riper, & Hedman, 2014; Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Cuijpers et al., 2009; D. Richards & Richardson, 2012; D. Richards, Richardson, Timulak, & McElvaney, 2015). Importantly, these meta-analyses have also typically reported that clinician-guided interventions produce superior outcomes to self-

guided interventions. For example, Andersson and Cuijpers (2009) reported the mean effect size of clinician-guided iCBT for depression was 0.61, compared with 0.24 for self-guided interventions.

An emerging body of research has explored the efficacy of tailored or transdiagnostic iCBT interventions that aim to simultaneously target and treat a broad range of symptoms that are common to disorders of anxiety and depression in Western populations (Carlbring et al., 2011; Craske et al., 2009; Craske, Stein, Sullivan, & et al., 2011; Cuijpers, Donker, van Straten, Li, & Andersson, 2010; Dear, Staples, et al., 2015; Dear, Titov, Schwencke, et al., 2011; Dear et al., 2013; Dear, Zou, Ali, Lorian, Johnston, Sheehan, et al., 2015; Johansson, Sjöberg, et al., 2012; Johnston et al., 2014; Mullin et al., 2015; Nordgren et al., 2014; Silfvernagel, Gren-Landell, Emanuelsson, Carlbring, & Andersson, 2015; Titov, Dear, Ali, et al., 2015; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov, Dear, Johnston, & Terides, 2012; Titov, Dear, Schwencke, et al., 2011; Titov, Dear, Staples, Terides, et al., 2015). For example, a recent series of studies indicated that transdiagnostic iCBT produces similar results to disorder-specific iCBT for generalised anxiety disorder (Dear, Staples, et al., 2015), major depressive disorder (Titov, Dear, Staples, Terides, et al., 2015), social anxiety disorder (Dear et al., in press), and panic disorder (Fogliati et al., 2016). These recent findings are a significant development in clinical psychology given the documented issues associated with disseminating disorder-specific treatments and the obvious pragmatic advantages of having one treatment that is effective for a broad cross section of patients (McHugh & Barlow, 2010). Consistent with these findings, a recent meta-analysis (47 studies;  $N = 3746$ ) was supportive of the efficacy of clinician-guided iCBT or face-to-face CBT manualised transdiagnostic treatments, with moderate ( $g = 0.65$ ) and large ( $g = 0.80$ ) average clinical effects found for symptoms of anxiety and depression respectively

(Newby, McKinnon, Kuyken, Gilbody, & Dalgleish, 2015). Interestingly, this meta-analysis found that transdiagnostic iCBT may be more effective for depression than disorder-specific iCBT (Newby et al., 2015). Thus, although this area of research is still evolving and many questions remain, there is encouraging evidence for the efficacy of tailored or transdiagnostic iCBT for the common anxiety and depressive disorders among Western populations.

Another emerging body of research is exploring the relative efficacy of iCBT when compared with face-to-face administered CBT. To date, nine RCTs ( $N = 820$ ) have reported the results of direct comparisons of face-to-face group and individual CBT with clinician-guided iCBT for specific disorders of anxiety or depression (Andersson et al., 2009; Andrews et al., 2011; Bergström et al., 2010; Botella et al., 2010; Carlbring et al., 2005; Hedman, Andersson, Ljótsson, Andersson, Rück, Mörtberg, et al., 2011; Kiropoulos et al., 2008; Spek et al., 2007; B. Wagner et al., 2014). A meta-analysis exploring the results of these nine RCTs reported similar treatment outcomes for face-to-face and disorder-specific iCBT in the treatment of the anxiety disorders and depression, with typically large clinical improvements noted (Andersson et al., 2014). Thus, based on the available evidence, disorder-specific iCBT appears to be as effective as face-to-face CBT in the treatment of anxiety or depressive disorders among Western countries.

A fourth emerging body of research has explored the effectiveness of iCBT in routine care. A recent overview found 12 studies ( $N = 3888$ ) reporting on the outcomes of iCBT treatment for treating anxiety and depressive disorders when used in routine clinical settings across three Western countries; specifically, Australia, Sweden, and the Netherlands (Andersson & Hedman, 2013). Of note, when iCBT was administered in routine care settings large to moderate effect sizes were found approximating to those



obtained in validation clinical trials. Importantly, in the three years since this overview was conducted, numerous additional trials have emerged with similar findings across an even broader range of clinics and Western countries (El Alaoui, Hedman, Ljótsson, & Lindefors, 2015; Hadjistavropoulos et al., 2014; Hedman, Ljótsson, et al., 2014; Herrera-Mercadal et al., 2015; Mewton, Hobbs, Sunderland, Newby, & Andrews, 2014; Nordgren et al., 2014; Titov, Dear, Staples, Bennett-Levy, et al., 2015; Whiteside et al., 2014; Williams, O'Moore, Mason, & Andrews, 2014). However, several studies examining the use of iCBT in routine care have indicated the interventions are no more effective than treatment as usual conditions (de Graaf et al., 2011; de Graaf, Hollon, & Huibers, 2010; Gilbody et al., 2015; Kivi et al., 2014). These more recent studies highlight the need for more research examining the factors associated with successful implementation of iCBT into routine care and the identification of optimum models of implementation if the potential of iCBT is to be realised in routine care for Western populations.

#### **1.4.3.3 The efficacy of iCBT in Arab samples.**

To date, relatively little is known about the efficacy and acceptability of iCBT for Arab populations. Only four studies ( $N = 254$ ) have reported outcomes of iCBT with Arab people (Haj-Hasan, 2008; Knaevelsrud, Brand, Lange, Ruwaard, & Wagner, 2015; B. Wagner, Brand, Schulz, & Knaevelsrud, 2012; B. Wagner, Schulz, & Knaevelsrud, 2012). All four studies focussed on Iraqi populations and targeted symptoms of PTSD, anxiety and depression (see Table 1.3), using a combination of open trial and RCT designs. The average dropout rate was 39% across three studies indicating moderate acceptability, although it should be noted that at least one trial was conducted in extremely challenging circumstances during the Iraqi war (Knaevelsrud et al., 2015).

Results for the efficacy of the iCBT interventions were also promising with 75% (3/4) of the studies reporting statistically significant reductions in psychological symptoms of PTSD, anxiety and depression at post treatment. Encouragingly, consistent with other studies of iCBT, the only study to report follow-up data found treatment-related reductions in psychological symptoms were maintained at three-month follow-up. Furthermore, based on two trials, diagnostic remission rates (i.e. participants no longer met diagnostic criteria) were a mean of 43%, consistent with the results of face-to-face delivered CBT with Arab people. Thus, although still in its infancy, the available literature indicates that iCBT may have potential as a means of increasing access to treatment for Arab people with depression and anxiety. However, further research is required to confirm conclusions about the efficacy, acceptability and, thus, potential of iCBT for Arab people.

Table 1.3

*Summary of iCBT Studies of Arab People with PTSD, Anxiety or Depressive Disorders*

| Authors                         | Design                   |  |  | Sample<br><br><i>Arab sample</i><br>(N, Age, F%, Country) | Results   |   |
|---------------------------------|--------------------------|--|--|---|---|---|
|                                 | <i>Conditions</i><br>(n) | <i>Treatment duration</i><br>(design, primary measure)                       | <i>Cultural Adaptation</i>   |   | <i>Drop out (%)</i><br><br><i>Posttreatment DRR</i> | <i>Posttreatment and Follow-up†</i><br>(C or ITT, Effect Size)                                |
| Haj-Hasan (2008)                | Self-Guided iCBT (ns)    | 5 weeks, 2 x 45 mins weekly written CBT assignments per week (SGOT, PTSD)    | Arabic translation, Arabic-speaking clinicians, culturally relevant metaphors  | Iraqis adults with PTSD (ns, ns, 74%, Iraq)               | Dropout ns<br>DRR ns                                | Follow-up ns (ns)   |
| B. Wagner, Brand, et al. (2012) | iCBT (42)<br>WL (13)     | 5 weeks, 2 x 45 mins weekly written CBT assignments per week (RCT, PDS, WAI) | Arabic translation, Arabic-speaking clinicians, cultural adaptation considered but no examples reported  | Iraqis with torture or trauma (55, 27.7, 78%, Iraq)       | iCBT +WL (15%)<br>DRR ns                            | iCBT > WL<br>follow-up ns (ns)  |
| Knaevelsrud et al. (2015)       | iCBT (79)<br>WL (80)     | 5 weeks, 2 x 45 mins weekly written CBT assignments per week (RCT, PDS)      | Arabic translation, Arabic-speaking clinicians, cultural adaptation included given explicit advice to match Arabs preference for directive approach, quotes and metaphors from the Koran were used to challenge thoughts | Iraqis with torture or trauma (159, 28.1, 72%, Iraq)      | iCBT (40%)<br>WL (41%)<br>DRR-iCBT (62%)<br>WL (2%) | Reduction in PTSD, depression and anxiety symptoms<br>Maintained at 3mo<br>(ITT, 0.79 – 1.03) |

|                                     |                           |   |   |  |                                  |  |
|-------------------------------------|---------------------------|---|---|--|----------------------------------|--|
| B. Wagner, Schulz,<br>et al. (2012) | Self-Guided-<br>iCBT (40) | 5 weeks, 2 x 45 mins<br>weekly written CBT<br>assignments per week<br><br>(SGOT, PDS) | Arabic translation, Arabic-<br>speaking clinicians, cultural<br>adaptation considered but no<br>examples reported | Iraqis with torture or trauma<br>(15, 29.3, 87%, Iraq) | iCBT (63%)<br><br>DRR-iCBT (25%) | Reduction in PTSD, depression<br>and anxiety symptoms<br><br>follow-up ns<br><br>(C, 1.43) |
|-------------------------------------|---------------------------|---|---|--|----------------------------------|--|

*Note.* C= Completer analysis; DRR = Diagnostic Remission Rate; F% = percentage of Females in sample; iCBT = Internet-delivered Cognitive Behavioural Therapy; ITT = Intention to treat analysis; ns = not stated; PDS = Posttraumatic Stress Diagnostic Scale; RCT = Randomised Control Trial; SGOT = Single group open trial; WAI = Working Alliance Inventory; WL = Waiting List.

## **1.5 Summary and Aims of the Present Thesis**

### **1.5.1 Summary**

This chapter has reviewed the available literature concerning the psychological distress of Arab people and has identified several gaps in our knowledge about the mental health of Arab people and the treatment of common mental disorders among Arab people. First, this chapter identified that, compared with Western populations, relatively little is known about the mental health of Arab people. However, based on the available literature, it does appear that anxiety and depression are at least as common among Arab populations as Western populations. Second, Arab people are relatively under-represented in mental health research and are difficult to recruit as participants in mental health research (Gearing et al., 2012). Thus, research is urgently needed to explore methods of increasing participation rates. Third, the studies that have evaluated the efficacy of CBT and iCBT for treating anxiety and depression in Arab people have produced encouraging results. However, much more research is needed, exploring the potential of iCBT as a way of increasing access to psychological treatment for Arab people.

### **1.5.2 Aims and Studies**

The studies in this thesis aim to contribute to informing the gaps noted above. Specifically, this thesis has the following three aims:

1. To examine the levels of psychological distress, perceived barriers to treatment and treatment seeking and preferences of Arab people. This information will facilitate planning of mental health services for Arab people living in the Arab world as well as in Western countries (Studies 1 and 2).

2. To explore the effectiveness of using social media to recruit Arab people to mental health treatment and research. This information will inform attempts at reducing barriers and increasing participation of Arab populations in mental health research (Study 3).
3. To replicate and extend results of studies of iCBT for Arab people. This replication and extension will inform about the potential of iCBT as a treatment option for Arab people with anxiety or depression (Studies 4 to 6).

By addressing these aims in the studies in this thesis, I sincerely hope the work in this thesis will contribute to improving the emotional wellbeing of Arab people around the world. The aims of each Study were as follows.

#### **1.5.2.1 Study 1.**

Study 1 sought to generate data about the mental health of Arab Australians. The aim of this study was to use online survey methodology to measure levels of distress, treatment-seeking experiences and preferences, perceived barriers to treatment, and the acceptability of Internet-delivered and face-to-face psychological treatments.

#### **1.5.2.2 Study 2.**

Study 2 sought to generate information about the psychological distress and treatment preferences of Arab people around the world. Using survey methodology, Study 2 aimed to evaluate levels of psychological distress, as well as the relative acceptability of traditional face-to-face and Internet-delivered mental health services among Arab people around the world.

#### **1.5.2.3 Study 3.**

Study 3 sought to evaluate innovative ways of recruiting Arab people to mental health research. Specifically, the aim of Study 3 was to compare the relative benefits of traditional recruitment methods such as print and radio media versus using Facebook in the recruitment of Arab people to mental health research.

#### **1.5.2.4 Study 4.**

Studies 4, 5, and 6 sought to extend knowledge about the potential of iCBT with Arab populations with anxiety and depression, using open-trial designs. The aim of Study 4 was to examine the efficacy and acceptability of a clinician-guided and culturally adapted transdiagnostic iCBT treatment, presented in the English language, for Arab Australians with symptoms of depression and anxiety.

#### **1.5.2.5 Study 5.**

The aim of Study 5 was to replicate and extend the results of Study 4 by examining the efficacy and acceptability of a self-guided and culturally adapted transdiagnostic iCBT treatment, presented in the English language, for Arab people in different countries with symptoms of depression and anxiety.

#### **1.5.2.6 Study 6.**

The aim of Study 6 was to explore the efficacy and acceptability of a clinician-guided and culturally adapted transdiagnostic iCBT treatment for Arab Australians with symptoms of depression and anxiety, presented in both the English and Arabic languages.

## **2.0 - Study 1: Intergenerational and Cross-Cultural Differences in Emotional Wellbeing, Mental Health Service Utilisation, Treatment-Seeking Preferences and Acceptability of Psychological Treatments for Arab Australians**

A version of the following chapter was published. The candidate (i.e., lead author) designed and promoted the study, led the translation of survey, conducted the analyses and drafted the manuscript:

Kayrouz, R., Dear, B. F., Johnston, L., Keyrouz, L., Nehme, E., Laube, R., & Titov, N. (2014). Intergenerational and cross-cultural differences in emotional wellbeing, mental health service utilisation, treatment-seeking preferences and acceptability of psychological treatments for Arab Australians. *International Journal of Social Psychiatry*, 61(5), 484-491. doi: 10.1177/0020764014553004

### **2.1 Introduction**

The Arabic-speaking communities in Australia (*Arab Australians*) include diverse groups of people with origins from 22 countries in North Africa and the Middle East. In the last 15 years, this community has grown by about 50% (Australian Bureau of Statistics 2006; Australian Bureau of Statistics, 2011) and is now the sixth largest group of immigrants to Australia comprising 1.4% of the total Australian population with 38.5% born in Australia (Australian Bureau of Statistics, 2011). Surprisingly, however, little is known about the mental health of this growing population. A small body of research has identified comparatively high rates of psychological distress and multiple barriers to treatment in this population. For example, a study examining the mental health of Arab Australians born in Lebanon and living in NSW reported that 20%



had elevated levels of psychological distress, a rate twice that of the general population (Centre for Epidemiology and Research, 2010). An earlier study identified that Arab Australians (Youssef & Deane, 2006) experience similar barriers to accessing mental health treatment as Arab Muslim Americans (Aloud & Rathur, 2009), and Arab adolescents in Israel (Guterman, Haj-Yahia, Vorhies, Ismayilova, & Leshem, 2010) including low mental health literacy, shame, stigma and personal beliefs about treatment, and lack of trust in mental health professionals (Gearing et al., 2012; Guterman et al., 2010). Unfortunately, no Australian research has explored the prevalence of psychological distress and barriers to treatment in the same study, which would assist the planning of mental health services for Arab Australians.

An additional gap in the literature is information about the mental health status of first- compared to second-generation Arab Australians. First generation (FG) are individuals born in an Arabic-speaking country who have migrated to Australia; second-generation (SG) are the children of parents who have migrated to Australia from an Arabic-speaking country and born in Australia. Such information is important because research in other countries indicates that the risk and, therefore, the need for services may differ between FG and SG individuals. For example, research has found that FG Middle-Easterners living in Sweden (Hjern & Allebeck, 2002), and California (Nasseri & Moulton, 2011) have lower risk levels of death by suicide when compared to their SG counterparts. Further, a meta-analysis examining the risk for psychotic disorders amongst first and second generation immigrants from several different cultures found that an increased risk for psychotic disorders continued into the second generation (Bourque, van der Ven, & Malla, 2011).

The aim of the present study was to contribute to the emerging data about the mental health status and needs of Arab Australians. Specifically, the present study

sought to explore intergenerational (FG vs. SG) and cross-cultural (Australian vs Arab Australian) differences in mental health status, treatment-seeking experiences and preferences, the barriers to treatment as well as the acceptability of different treatments to Arab Australians. To explore these issues, an online survey was developed based on protocols used in similar research with other populations (Lu, Dear, Johnston, Wootton, & Titov, 2013; Spence et al., 2011; Wootton, Titov, Dear, Spence, & Kemp, 2011). Based on previous research from the intergenerational differences in Arab and other CALD populations it was hypothesised that when compared to their SG counterparts, FG Arab Australians would: (1) have lower rates of psychological distress, functional impairment and mental health service utilisation, and (2) be less likely to try psychological treatments. Further based on previous findings (Aloud & Rathur, 2009; Bourque et al., 2011; Gearing et al., 2012; Slade et al., 2009; Youssef & Deane, 2006) it was expected that compared to the general Australian population, Arab Australians would have: (3) higher levels of psychological distress; and (4) lower rates of mental health service utilisation and a greater preference for ‘non-medical’ support from family, friends and religious leaders. Finally, Hypothesis 5 predicted that a significant proportion of respondents would be willing to try psychological treatments, including Internet-delivered treatment for symptoms of stress, anxiety and low mood.

## **2.2 Method**

### **2.2.1 Participants**

Between October 2012 and April 2013 an anonymous online survey was conducted and promoted via multiple parallel channels. The survey was promoted via published articles in Arabic newspapers and radio interviews on Arabic radio shows. It

was also promoted via the circulation of the survey to over 100 organisations providing services to Arab Australians, to over 100 Arabic-speaking service providers (e.g., general practitioners, medical specialists, allied health professionals, psychologists, social workers and counsellors) and to 20 spiritual leaders of an Arabic-speaking background in Australia.

Over that time, 261 people provided informed consent and volunteered to participate. Participants were invited to complete the Internet survey via a research website ([www.ecentreclinic.org](http://www.ecentreclinic.org)). Inclusion criteria were: (1) Resident of Australia; (2) overseas-born or Australian-born person who self-identified as being of Arabic ancestry; and (3) being over the age of 18. Of the 261 respondents, nine were excluded for not completing a measure of psychological distress, the Kessler 10-item (K10; Kessler et al., 2002), leaving 252 eligible for analysis. Entry into a draw to win an iPad was offered as compensation for participation.

### **2.2.2 Survey Questionnaire and Ethics**

A bilingual (i.e., English and Arabic) 33-item online survey was developed for the present study. Items were drawn from a review examining the barriers to, and strategies for, effective treatment implementation in Middle Eastern countries (Gearing et al., 2012) as well as several previous surveys (Lu et al., 2013; Spence et al., 2011; Wootton et al., 2011). The items were presented in both English and Arabic for all participants in order to aid understanding.

The bilingual survey was translated using a 3-stage process. First, a professional translator (LNK) conducted the forward translation; that is, a translation from English to Arabic. Second, the lead author (RK), in consultation with two bilingual speakers

(MK and EN), conducted the backward translation; that is, from Arabic to English. Third, a bilingual psychologist (MM) reviewed the final translation. The questions and functionality of the survey were piloted with a small non-clinical convenience sample ( $n = 6$ ) of Arab Australians. Questions were subsequently modified to improve the comprehension, interpretability and functionality of the survey. No formal analysis of validity was conducted.

The survey comprised the following six sections:

- 1) *Demographic Questions*. Fourteen items examined the age, marital status, education, country of birth, country of birth of parents or grandparents or great-grandparents, the length of time living in Australia, religion, proficiency using the Internet, average time spent on the Internet per week, and English proficiency and reading ability.
- 2) *Psychological Distress Questions*. The Kessler 10-Item Scale (K-10; Kessler et al., 2002) and the Sheehan Disability Scale (SDS; D. Sheehan, Harnett-Sheehan, & Raj, 1996) were used to assess psychological distress and functional impairment, respectively. The K-10 is a 10-item scale measuring non-specific psychological distress strongly related to diagnoses of anxiety and depression, with a total score of  $\geq 22$  indicating a high level of psychological distress (Andrews & Slade, 2001). The SDS is a three-item scale used to assess functional impairment in school or work, social and family life (D. Sheehan et al., 1996). Both measures are widely used and known to have good psychometric properties. Cronbach's alpha for the K-10 and the SDS were 0.93 and 0.91, respectively, in the present study.
- 3) *Help-Seeking*. Seven items were completed by respondents who endorsed having concerns about their stress, anxiety and low mood in the last 12 months. Existing

validated measures (e.g., General Help Seeking Questionnaire) were not used because they did not include response options that were targeted to our research focus and Arab population (i.e., whether Arabs use the internet to seek help, and the role of religious healers)). Thus, response options were based on published literature (Gearing et al., 2012), and assessed the form of help sought by participants experiencing distress, their preferences for seeking help, and the barriers that stopped them from seeking help from mental health services in Australia (e.g., *I had language difficulties*) using *yes* and *no* response options.

- 4) *Adjusting to Life in Australia*. Three items examined perceived opportunities (e.g., “Education”), current challenges faced living in Australia using open text responses, and services that may have facilitated adjustment (e.g., *Information about community support services*).
- 5) *Preferred Model of Service Delivery (i.e. face-to-face vs. the Internet)*. Three items assessed respondents’ preferences to utilising the Internet and/or face-to-face treatment for symptoms of stress, anxiety or depression.
- 6) *Interest in Future Research*. Three items enquired whether people were interested in future research and if they would like to enter the draw to win an iPad.

The Human Research Ethics Committee of Macquarie University granted ethics approval, and based on previous surveys (Lu et al., 2013; Spence et al., 2011; Wootton et al., 2011), the current survey was designed to take approximately 15 minutes to complete.

### 2.2.3 Statistical Analysis

The relationship between demographic variables (i.e., age and number of years since migration to Australia) and psychological distress were examined using Pearson's correlations. The relationship between demographic variables (gender, marital status, and educational levels) and level of psychological distress (i.e., low vs. high; based on a cut-off score of  $K-10 \geq 22$ ) were examined using chi-square tests. Using the McNemar test (Sheskin, 2000), differences were analysed between the following variables: (a) the preferences for Internet and face-to-face treatments; and (b) Country of origin and preferences for the Internet and face-to-face treatment. Respondents with missing data were omitted from specific analyses where the missing information occurred.

Hypotheses were tested by creating categorical groups. The first and second hypotheses were tested by dividing respondents into FG (overseas-born) or SG (Australian-born) and comparing the intergenerational differences on K-10 and SDS scores, the frequency of mental health service utilisation, treatment barriers and preferences for psychological treatment. The third hypothesis was tested by dividing respondents into *Low* and *High* distress groups based on K-10 scores. The fourth hypothesis was tested by measuring the frequency of mental health service utilisation of Arab Australians in the current study. The fifth hypothesis was tested with each preferred mode of delivery of treatment (i.e., the Internet versus face-to-face) divided into either *No* or *Yes/Maybe* groups. Differences between groups were assessed using chi-square and McNemar tests, while mean differences in age, intergenerational status (i.e., FG vs. SG) and symptom severity scales (i.e., K10 and SDS) were assessed using one-way ANOVAs. Analyses were performed using the Statistical Package for Social Sciences (SPSS) version 20.0 for Windows (SPSS Inc., Chicago, IL).

## 2.3 Results

### 2.3.1 Demographic Characteristics

More females ( $n = 148$ ; 59%) than males ( $n = 104$ ; 41%) participated. The age range and mean age of respondents was 18 to 73 and 37.2 ( $SD = 12.6$ ), respectively. The majority of respondents were either married/de facto ( $n = 138$ ; 55%) or single ( $n = 99$ ; 40%) and Christian ( $n = 223$ ; 88%) or Muslim ( $n = 24$ ; 9.5%). Most were born in Australia ( $n = 176$ ; 70%) or Lebanon ( $n = 60$ ; 23%). Respondents born overseas ( $n = 76$ ; 30%) reported that they had lived in Australia for a mean of 25.5 years (range: 1 to 60;  $SD = 14.2$ ). Forty-one percent of the sample ( $n = 107$ ) had attained at least an undergraduate degree, 38% ( $n = 99$ ) had attained a trade or other certificate, while 21% ( $n = 55$ ) completed some level of High School. The greatest proportion of participants reported residing in New South Wales ( $n = 217$ ; 86%), followed by Victoria ( $n = 24$ ; 9.5%), Australian Capital Territory ( $n = 7$ ; 3%), South Australia ( $n = 3$ ; 1%), and Queensland ( $n = 1$ ; 0.5%). One hundred and sixty-one (65%) respondents reported spending at least 10 hours per week using the Internet. Most respondents rated their English proficiency ( $n = 196$ ; 78%) and Internet skills ( $n = 154$ ; 61%) as either *average* or *very good*.

### 2.3.2 Hypothesis 1: No Differences in Intergenerational Differences of Mental Health Status

There was no significant difference in K-10 scores between FG and SG respondents,  $F(1, 250) = 0.39$ ,  $p = .53$ . However, SG respondents reported marginally higher SDS scores when compared to FG,  $F(1, 250) = 3.83$ ,  $p = .052$ . In terms of mental health service utilisation, of the 81 respondents who experienced high levels of

psychological distress and sought help, the FG respondents (4/22; 18%) were not significantly less likely to seek help from a mental health professional when compared to SG (14/59; 23%). In terms of treatment barriers, there were no significant differences in barriers to treatment between FG and SG respondents.

### **2.3.3 Hypothesis 2: Intergenerational Differences in Preferences for Psychological Treatments**

The McNemar test (Sheskin, 2000), using binomial distribution, showed a significant difference between the preference for Internet treatment and intergenerational status ( $N = 76$ ;  $p < 0.001$ ). Of the 76 FG and SG respondents who experienced high levels of psychological distress and responded to the question about preference for Internet-delivered treatment, FG Arab Australians (16/22; 73%) were significantly more likely to indicate that they would try Internet-delivered treatment compared to SG (30/54; 55%). Finally, there was no significant intergenerational difference in preferences for the Internet versus face-to-face treatments.

### **2.3.4 Hypothesis 3: Higher Levels of Psychological Distress Amongst Arab Australians**

Psychological distress levels did not differ significantly as a function of gender, marital status (categorised into *married* and *not married*), educational levels (categorised into *up to year 12*, *at least a tertiary certificate*, and *at least a bachelor's degree*), and country of birth (categorised into *FG* and *SG*), ( $p$  range = 0.48 to 0.88). The sample mean on the K-10 was 19.1 (range: 10 to 45;  $SD = 7.6$ ). Thirty-two percent (81/252) of the respondents reported high psychological distress level on the K-10 (K-



$10 \geq 22$ ;  $M = 28.5$ ;  $SD = 5.4$ ). Moderate to high levels of functional impairment, as measured by the SDS (total score  $\geq 7$ ), were reported by 43% of respondents ( $M = 9.5$ ;  $SD = 1.8$ ).

### **2.3.5 Hypothesis 4: Lower Mental Health Service Utilisation Among Arab**

#### **Australians**

Table 2.1 shows that of the 147/252 (58%) respondents who reported concerns about their stress, anxiety and low mood in the last 12 months, 47/147 (32%) sought some form of help. Overall, 47/252 (18%) sought help from a mental health professional (i.e., psychiatrists, psychologists or counsellors) in the previous year. In addition, 22% (18/81) of the participants with high distress sought help from a mental health professional. The most frequently endorsed help-seeking behaviours of this sample, in order, included talking to friends, medical doctors, mental health professionals, followed by talking to family, engaging in exercise, relying on self-discipline or information from books, and consulting religious leaders and the Internet.

Table 2.1

*Types of Help Utilised by Arab Australians for Managing Psychological Distress*

| Type of help  | N, Number seeking help |
|---|------------------------|
| <b>Medical</b>  |                        |
| Medical doctor  | 27 / 47 (57%)          |
| Mental health professionals (psychiatrists, psychologists or counsellors) | 27 / 47 (57%)          |
| <b>Traditional culture-specific</b>                                       |                        |
| Religious leaders   | 12 / 47 (26%)          |
| <b>Non-medical</b>  |                        |
| Talk to friends   | 28 / 47 (60%)          |
| Talk to family  | 23 / 47 (49%)          |
| Exercise  | 23 / 47 (49%)          |
| Find information from books   | 19 / 47 (40%)          |
| Rely on self-discipline or self-will                                      | 19 / 47 (40%)          |
| Find information from the Internet  | 11 / 47 (23%)          |
| Self-help groups  | 1 / 47 (2%)            |

Respondents with high psychological distress who answered questions about barriers to accessing treatment ( $n = 47$ ) cited the reasons described in Table 2.2. These have been divided into reasons relating to cultural barriers, mental health literacy and practical barriers.

Table 2.2

*Reported Barriers to Seeking Mental Health Services Reported by Respondents with High Psychological Distress*

| <b>Types of Barriers</b>   | <b>N</b> | <b>%</b> |
|--|----------|----------|
| <b>Cultural barriers</b>   |          |          |
| It would be shameful/ my family or I would “lose face” if others found out | 25 / 47  | 53       |
| I do not trust mental health services                                      | 21 / 47  | 45       |
| I would be seen as crazy or mad if others found out                        | 16 / 47  | 34       |
| Someone told me not to seek treatment                                      | 7 / 47   | 17       |
| My religious beliefs stopped me from getting help                          | 6 / 47   | 14       |
| I had language difficulties  | 6 / 47   | 14       |
| <b>Mental Health Literacy</b>  |          |          |
| I didn’t think my problem was severe/serious enough                        | 42 / 47  | 89       |
| I wasn’t aware of the treatment services in my local area                  | 30 / 47  | 64       |
| I did not know what the symptoms of stress, anxiety and low mood are       | 24 / 47  | 51       |
| I did not believe that I could be helped                                   | 23 / 47  | 49       |
| <b>Practical barriers</b>  |          |          |
| I had a lack of time   | 38 / 47  | 81       |
| Treatment was too expensive or I had transportation difficulties           | 23 / 47  | 49       |

### **2.3.6 Hypothesis 5: Psychological Treatments Are Acceptable to Arab Australians**

The majority of participants who answered the question about preferences for treatment (220/233; 94%) indicated they would or might be prepared to try psychological treatments for their concerns about stress, anxiety or depression. The McNemar test (Sheskin, 2000), using binomial distribution, showed a significant difference between participants who had a preference for Internet or face-to-face treatments ( $N = 233$ ;  $p < 0.001$ ). Specifically, analyses revealed that a greater number (209/233; 90%) of respondents indicated they would or might try face-to-face treatment than those who indicated they would or might try Internet-delivered treatment for their concerns about stress, anxiety or depression (128/233; 55%). Further, of the 81 respondents who experienced high levels of psychological distress, 76 answered the question related to the preferred mode of psychological treatment. These respondents also indicated a significantly greater preference ( $N = 76$ ; exact  $p < 0.001$ ) for face-to-face treatment (66/76; 86%) over Internet-delivered treatment (46/76; 61%).

## **2.4 Discussion**

The aim of the present study was to contribute to the emerging data about the intergenerational (FG vs. SG) and cross-cultural (Australians vs. Arab Australians) differences in mental health status, treatment-seeking experiences and preferences, the barriers to treatment and the acceptability of face-to-face and Internet-delivered treatment to Arab Australians.

The first part of hypothesis 1, that FG would have lower psychological distress and functional impairment when compared to SG was not supported, despite the marginal trend that FG reported lower disability levels. The second part of hypothesis

1, that FG would be less likely to prefer psychological treatments when compared with their SG counterparts was also not supported. In contrast, FG Arab Australians were more likely to prefer Internet-delivered treatment when compared with their SG counterparts.

The second hypothesis, that FG would have lower rates of mental health service utilisation and experience greater barriers to treatment when compared with their SG counterparts, was also not supported.

However, the three remaining hypotheses were all supported. Specifically, that, compared to the general Australian population Arab Australians would have: (3) relatively higher levels of psychological distress; (4) there would be lower rates of mental health service utilisation and a preference for non-medical support from family, friends and religious leaders. Finally, Hypothesis 5 predicted that a significant proportion of respondents would be willing to try psychological treatments for symptoms of stress, anxiety and low mood was also supported.

No significant intergenerational differences were found in mental health status, barriers to treatment and preferences for psychological treatment (except for Internet-delivered treatment) indicating a fairly homogeneous sample. The present study did not support previous findings, which indicated a greater level of psychological distress, greater risk of suicide and psychotic disorders developing for SG when compared to FG (Bourque et al., 2011; Hjern & Allebeck, 2002; Nasserri & Moulton, 2011). However, this present study found no intergenerational differences in psychological distress levels, and a marginal trend indicating greater functional impairment levels in SG respondents. The similar intergenerational treatment barriers, lower mental health literacy and treatment utilisation rates may account for this unexpected finding. These three

contributing factors may also explain the high psychological distress across generations reported in this sample.

Irrespective of generational status, Arab Australians in this sample reported having a lack of awareness about local treatment services, did not think their problem was serious enough to warrant professional help, and a lack of awareness about mental health symptoms, indicating intergenerational poor mental health literacy. Further, Arab Australians also reported other structural and attitudinal barriers such as a lack of time, cost and transportation, shame for family and loss of face, and being seen as crazy if others found out. These treatment barriers, in the context of poor mental health literacy, may contribute to the lower intergenerational utilisation rates and higher psychological distress levels found in the present study. This pattern of findings replicates previous findings with Arab sample in Israel (Al-Krenawi, 2002), Qatar (Bener & Gbuloum, 2011), and a cross-national study of Arab students in Israel, Palestine, Kuwait and Egypt (Al-Krenawi, Graham, Al-Bedah, Kadri, & Sehwal, 2009). The encouraging finding is that across generations that Arab Australians were willing to try psychological treatments. Overall their preference was for face-to-face treatment, with FG having a greater preference for Internet-delivered when compared to SG.

The present study found cross-cultural differences with higher levels of psychological distress reported amongst Arab Australians completing the Survey when compared to the general Australian population. Indeed, respondents reported mean K-10 scores ( $M = 19.1$ ;  $SD = 7.6$ ) slightly higher than those reported by the general Australian population ( $M = 14.2$ ;  $SD =$  none reported; Australian Bureau of Statistics, 2008). Moreover, 33.7% of the respondents reported high to very high levels of psychological distress ( $K-10 \geq 22$ ) compared to 9.6% in the general Australian population (Australian Bureau of Statistics, 2008). Respondents in the present survey

also indicated elevated levels of functional impairment indicating that psychological distress is disrupting some Arab Australians' vocational, social life, recreational, family, and home responsibilities. These findings are consistent with results of a recent survey identifying high levels of psychological distress among people born in Lebanon and living in NSW (Centre for Epidemiology and Research, 2010) and highlights that, compared with the general population (Australian Bureau of Statistics, 2008), significantly higher symptoms of psychological distress are present amongst this sample of Arab Australians.

Also, compared with the general Australian community (Slade et al., 2009), consistent with other similar surveys (Lu et al., 2013; Spence et al., 2011), and other Arab-based surveys (Al-Krenawi, 2002; Aloud & Rathur, 2009) Arab respondents reported lower rates of mental health service utilisation. In particular, 22% of the sample that reported high levels of psychological distress sought treatment from a mental health professional. This is lower than the rates of treatment seeking amongst the general Australian population, where 35% with symptoms of stress, anxiety and depression reported seeking treatment (Slade et al., 2009). These findings of lower rates of utilisation of mental health services in an Arab migrant population compared with the dominant host population replicated previous findings of Arabs and Jews living in Israel (Al-Krenawi, 2002). This lower rate of mental health service utilisation may be related to the barriers to treatment seeking identified by respondents.

Of those who reported they sought treatment, many preferred to seek informal and non-medical help from friends and family, replicating findings from previous research with Chinese immigrant (B. Chan & Parker, 2004), Chinese students in Australia (Lu et al., 2013), Qatari Arab (Bener & Gbuloum, 2011), and Arab Muslim populations (Al-Krenawi et al., 2009; Al-Krenawi & Graham, 2011; Aloud & Rathur,

2009). Surprisingly, respondents reported a preference for seeking help from mental health professionals compared to what might be considered more traditional options, such as seeing a religious leader. This is not consistent with some previous research that, for example, found that Arab Americans had a more negative view of mental health professionals and preferred to seek out religious leaders (Aloud & Rathur, 2009).

However, this is consistent with other studies that have found a differential pattern of using mental health service, based on nationality (Al-Krenawi et al., 2009), gender (Al-Krenawi, 2002; Bener & Gbuloum, 2011) and religion (Al-Krenawi & Graham, 2011). For example, Palestinian and Israeli Arabs reported a greater preference to seek mental health treatment for a psychological problem compared to their Kuwaiti and Egyptian counterparts (Al-Krenawi et al., 2009); Arab males in Israel and Qatar were more likely to seek mental health treatment when compared to their female counterparts (Al-Krenawi, 2002; Bener & Gbuloum, 2011), and; Arab Christian students in Israel reported being more open to mental health treatment and less likely to endorse traditional healers when compared to their Muslim counterparts (Al-Krenawi & Graham, 2011). The current study did not find any differences based on country of origin (i.e. Australian-born vs overseas-born), gender or religion in preferences for seeking help from mental health services, with Arab females and Muslims who are experiencing high psychological distress as likely to seek psychological treatment as their male and Christian counterparts respectively. Unfortunately, the small sample of overseas-born respondents ( $n = 76$ ) prevented subgroup analyses based on Arab country of origin.

The lack of gender and religious differences in the current sample could be attributed to the acculturation levels. Al-Krenawi and Graham (2000) postulated that as Arab people become more acculturated to Western culture, they are more likely to seek psychological treatment. Unfortunately, this was not examined in the current study,



hence, we can only tentatively suggest that acculturation may be a relevant factor. However, future research would need to explore the relationship between increased preference for psychological treatment and acculturation. Moreover, in line with emerging evidence in some Arab populations (Al-Krenawi, 2002; Al-Krenawi et al., 2009; Al-Krenawi & Graham, 2011; Logan, Rouen, Wagner, Steel, & Hunt, 2016), Arab people are becoming more open to mental health treatment and in this current study there is a significant number of Arab participants who endorsed both face-to-face and Internet-delivered treatments as acceptable.

Overall, a significant proportion of respondents reported they would try psychological treatments. There was a preference for face-to-face delivered over Internet-delivered treatments, which may reflect the familiarity of the former. Notwithstanding their preference for face-to-face treatment, respondents in this sample experiencing high psychological distress are willing to try Internet-delivered treatments (61%). These findings are encouraging and suggest that Arab Australians are prepared to access treatment in non-traditional formats.

#### **2.4.1 Limitations**

Despite attempts to engage all relevant Arabic-speaking organisations in Australia, the sample was relatively small and had a high proportion of people of a Christian faith. Thus, the generalisability of the results of the present study is somewhat limited and caution is needed in interpreting the results. It is also important to note that Arab Australians are a highly heterogeneous group and relatively small number of participants in the present study prevent potentially important subgroup analyses (Blignault, Ponzio, Ye Rong, & Eisenbruch, 2008). Further, by virtue of the

methodology involving an Internet survey, selection bias may be present with respondents having pre-existing positive attitudes towards research, mental health services and Internet-delivered treatments. A final limitation is the lack of independent validation of the accuracy of self-report data on service utilisation rates (i.e., no data collected from the general Australia population resulting in no direct comparison with the Arab Australian population). Notwithstanding these limitations, these data represent an important contribution to the limited research available about the psychological distress, help-seeking history, barriers and preferences for psychological treatment of Arab Australians.

#### **2.4.2 Implications**

The intergenerational barriers to treatment identified in the present study, that is, low mental literacy, lack of time, and stigma and shame, have been found to occur within and across CALD groups (B. Chan & Parker, 2004; Gearing et al., 2012; Guterman et al., 2010; Lu et al., 2013; Spence et al., 2011). This suggests that barriers to accessing treatment might be transcultural and that seeking help poses challenges irrespective of culture, although there may be some specific language or cultural barriers for people from culturally and linguistically diverse (CALD) backgrounds. This indicates the importance of identifying barriers to treatment for improving mental health amongst these CALD groups and also the potential of innovative models of service delivery. A significant finding of the present study is that more than 60% of respondents with high levels of distress would try Internet-delivered treatment and, given the promising research regarding other CALD groups (Choi et al., 2012), this points to the potential of using Internet-delivered treatments for providing psychological treatment to Arab Australians.

### **2.4.3 Conclusion**

Arab Australians in the present study experienced higher levels of psychological distress and underutilised mental health services when compared to the general Australian population. This may be due to common barriers reported across CALD groups, particularly lack of time, shame and stigma, and limited mental health literacy. As Arab Australians are becoming more open to psychological treatment and are willing to try face-to-face and Internet-delivered treatments, novel ways of engaging this CALD group and improving access to new models of mental health treatment services are critical. One such way could be the development of Internet-delivered treatments for Arab Australians.

### **3.0 - Study 2: Acceptability of Mental Health Services for Anxiety and Depression in an Arab Sample**

An abbreviated version of the following chapter is under review. The candidate (i.e., lead author) designed and promoted the study, led the translation of the survey, conducted the analyses and drafted the manuscript:

Kayrouz, R., Dear, B. F., Karin, E., Terides, M., Gandy, M., Fogliati, V., & Titov, N. (submitted). Acceptability of mental health services for anxiety and depression in an Arab sample. *Community Mental Health Journal*.

#### **3.1 Introduction**

The Arab world includes diverse groups of Arabic-speaking people with origins from 22 countries in North Africa and the Middle East. This group has a combined population in excess of 350 million, but there is also a sizable diaspora of 30 to 50 million in more than 24 countries (Battle, 2012). Despite the size of this population, surprisingly little is known about the mental health of Arab people. For example, only five Arab countries, Egypt (Ghanem et al., 2009), Iraq (Alhasnawi et al., 2009), Lebanon (Karam, Mneimneh, et al., 2008), Morocco (Kadri et al., 2010) and Qatar (Bener et al., 2015) have conducted epidemiological studies of mental health. These studies found that these Arab countries had broadly comparable rates of psychological disorders to Western countries (Kessler et al., 2009). Unfortunately, even less is known about the prevalence of disorders amongst the Arab Diaspora, many of whom live in Western countries. However, a recent study found that Arab people living in Australia (Study 1; Kayrouz et al., 2014) experience high levels of psychological distress.

In 2008 the World Health Organisation (WHO) launched the Mental Health Gap Action Programme (mhGAP) to identify strategies to “scale up” key mental health interventions for mental disorders in countries with low- and lower-middle incomes (World Health Organisation, 2008). In their work, the WHO found that in the Arab world, mental and behavioural disorders accounted for 10.5 million disability-adjusted life years (DALYs; World Health Organisation, 2010). Similar to findings in Western countries, major depressive and anxiety disorders accounted for 39% and 17% of the 10.5 million DALYs respectively (Mokdad et al., 2014). It was further identified that one group of factors likely to affect the successful implementation of the mhGAP program in the Arab world is whether or not Arab people would access mental health services and their treatment preferences. Such factors are likely to influence demand and uptake of mental health services and are, therefore, an important target for research.

Studies have explored the relationship between treatment preferences of Arab people who are either living in Middle Eastern or Western countries, and socio-demographic characteristics such as gender (Al-Krenawi, 2002; Al-Krenawi et al., 2009), religion (Al-Krenawi & Graham, 2011; Kayrouz et al., 2014), and nationality (Al-Krenawi et al., 2009; Bener & Gbuloum, 2011; Kayrouz et al., 2014). These studies have reported that Arab males in Middle-Eastern countries (i.e., Egypt, Kuwait, Israel and Palestine) are more likely to seek mental health treatment than females (Al-Krenawi, 2002; Al-Krenawi et al., 2009). Studies that have explored the relationship between religion and the acceptability of mental health services have revealed that Arab Christian students in Israel are more open to psychological treatment and less likely to endorse traditional healers compared to Muslim students in that country (Al-Krenawi & Graham, 2011). However, another study (i.e., Study 1 of this thesis) found no difference in willingness to try psychological treatments between Muslim and Christian Arab people

living in Australia (Kayrouz et al., 2014). These findings are indicative of the need to explore these socio-demographic differences across countries.

Several studies have indicated that nationality may influence the acceptability of mental health services by Arab people. For example, one study ( $N = 716$ ) found that Palestinian (53%) and Israeli Arabs (45%) reported a greater preference to seek mental health treatment when compared to their Egyptian (34%) and Kuwaiti (25%) counterparts (Al-Krenawi et al., 2009). In contrast, a study conducted in Qatar found that 75% of Arab Qataris ( $N = 1264$ ) reported that they would be willing to visit a psychiatrist if they had an emotional problem (Bener & Gbuloum, 2011). A recent study of Arab people living in Australia ( $N = 252$ ) found that 90% reported that they would try psychological treatment to manage symptoms of stress, anxiety and depression (Kayrouz et al., 2014). It has been proposed that these differences may relate to multiple factors, including differences in knowledge and beliefs about symptoms of common mental disorders, as well as the availability of mental health services across countries (Al-Krenawi et al., 2009; Gearing et al., 2012). However, although these studies indicate that factors such as gender, religion, and nationality may affect the acceptability and utilisation of mental health services it would also be useful to understand how these socio-demographic variables could also influence preferences for mental health services. Similarly, it would also be useful to understand how such variables influence preferences for new models of mental health service delivery, such as Internet-delivered mental health services which have been found to increase access to clinically and cost-effective mental health services in Western countries (Andersson & Titov, 2014). If acceptable with Arab populations, such service models may also prove a viable option to support the mhGAP programme and other initiatives, which seek to “scale up” mental health interventions in countries with low- and lower-middle incomes.

The present study sought to contribute to the emerging reports about the acceptability of mental health services in the Arab world by administering an online survey across several countries. Based on evidence for the increasing acceptability of mental health services (Al-Krenawi, 2002; Al-Krenawi et al., 2009; Al-Krenawi & Graham, 2011; Bener & Gbuloum, 2011; Gearing et al., 2012; Kayrouz et al., 2014) it was expected that more than half of those surveyed, regardless of demographic characteristics, would report being willing to access either conventional face-to-face or online mental health services. Further, based on two recent reports indicating that Arab people living in Western countries have relatively high levels of acceptability towards mental health services (Kayrouz et al., 2014; Logan et al., 2016) it was also expected that Arab people living in Australia would be more willing to seek mental health treatment than Arab people living in the Arab world (e.g., Algeria, Egypt, Iraq, and Yemen).

## **3.2 Methods**

### **3.2.1 Design**

To explore the issues of interest, an online survey was developed based on a protocol used in similar research with other populations (Kayrouz et al., 2014; Lu et al., 2013; Spence et al., 2011; Wootton et al., 2011). The study was approved by the Human Research Ethics Committee of Macquarie University. Based on previous surveys (Kayrouz et al., 2014; Lu et al., 2013; Spence et al., 2011; Wootton et al., 2011), the current survey was designed to take between 5 and 10 minutes to complete.

To ensure sufficient power to detect differences countries, countries with small sample sizes ( $n < 45$ ) were removed from the sample. The minimum sample size of 45

was estimated from the Cohen's (1988) power tables, with power set at .8 and detecting a moderate effect size ( $d = .6$ ). To ensure sufficient power to detect differences across age categories and of their small number, respondents aged 56+ years ( $n = 27$ ) were removed in the statistical analysis that examined age differences.

### 3.2.2 Survey

A bilingual (i.e., English and Arabic) 28-item online survey was developed for this study. Items were drawn from a review examining the barriers to and strategies for implementing effective mental health treatment in Middle Eastern countries (Gearing et al., 2012) as well as several previous published surveys designed to elicit information about the mental health literacy and acceptability of psychological treatments of different populations (Kayrouz et al., 2014; Lu et al., 2013; Spence et al., 2011; Wootton et al., 2011). The items were presented in both English and Arabic for all participants in order to aid understanding.

The bilingual survey was translated using a 2-stage process. First, a professional translator (EN) conducted the forward translation; that is, a translation from English to Arabic. Second, the lead author (RK), in consultation with one bilingual speaker (MK), conducted the backward translation; that is, from Arabic to English. No formal analysis of the validity of translation was conducted.

The survey comprised the following five sections:

- 1) *Demographics Questions*. Seven items examined the sex, age, marital status, education, country currently living in, country of birth, and religion.
- 2) *Symptom Severity Questions*. The Kessler 10-Item Scale (K-10; Kessler et al., 2002) was used to assess psychological distress. The K-10 is a 10-item scale



measuring non-specific psychological distress with a total score of  $\geq 22$  indicating a high level of psychological distress and a likely diagnosis of anxiety or depressive disorder (Andrews & Slade, 2001). It is widely used and known to have good psychometric properties. Cronbach's alpha in the present study was .89.

- 3) *Help-Seeking*. Seven items were completed by respondents who endorsed having concerns about their stress, anxiety and low mood in the last 12 months. The development of the items in the help-seeking questions was based on published literature (Gearing et al., 2012), and assessed preferences for seeking traditional mental health treatment (i.e., “Would you speak to a psychiatrist, psychologist or counsellor for help?” and “Would you take medication prescribed by a doctor or a psychiatrist?”), the form of help sought by participants (e.g., talk to family and friends, GP, psychiatrist, psychologist, counsellor, religious healers etc.), and the barriers that stopped them from seeking help from mental health services (e.g., *I do not trust mental health services*). Responses were categories as a binary option, being *yes* and *no* response options.
- 4) *Willingness to Try Internet-Delivered Treatment*. One item assessed if respondents would be willing to try a confidential Internet-delivered treatment if they were experiencing symptoms of anxiety or depression. In addition, two questions, providing responses based on published literature examining the advantages and challenges of Internet treatment (Andersson & Titov, 2014) assessed reasons they would try or not try an Internet-delivered treatment for Arab people.
- 5) *Enter Draw*. One item enquired whether respondents would like to enter the draw to win one of ten \$50 Amazon gift vouchers.

### **3.2.3 Procedure**

The survey was administered online and confidentially between December 2014 and June 2015 (24 weeks). The survey was promoted via email to 94 different Arab organisations (medical, secular and religious), 108 health professionals and to approximately 80 interested individuals across five countries. Facebook (FB) was also utilised to promote the survey to Arab people worldwide. This involved the following steps. First, a personal profile and dedicated FB public page about the research were created (for a detailed description of the process see Ünlü Ince et al., 2014). Then, the FB promotion strategy of boosting posts was applied from December 2014 to June 2015 on 10 occasions. Target groups for the FB promotions included Arab people living in Australia, United Kingdom (U.K.), United States of America (U.S.) and the 22 countries that make up the Arab league (e.g., Algeria, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, Algeria, Egypt and Palestine)

Several campaigns ( $n = 10$ ) of several different posts were created to attract members of the Arab community worldwide to participate in the online survey (for a detailed description of boosting posts see Study 3 of this thesis; Kayrouz, Dear, Karin, & Titov, 2016). Posts primarily comprised of a banner with “Survey” written across the banner in English and Arabic. Boosted posts targeted the fans and friends of fans of their FB page.

### **3.2.4 Participants**

During the recruitment period, 946 people provided informed consent and volunteered to participate. Participants were invited to complete the online survey by

clicking on a link on a website that promotes Internet-delivered psychological research ([www.ecentreclinic.org](http://www.ecentreclinic.org)) based at Macquarie University in Australia. Participants were informed they needed to be: (1) of an Arabic-speaking background; and (2) over the age of 18. Entry into a draw to win one of ten \$50 Amazon vouchers was offered as compensation for participation.

Of the 946 respondents, 128 (13.5%) were excluded for not completing the questions on help-seeking history. An additional 315 (33%) from 21 countries were excluded for statistical reasons; that is, the numbers from each individual country were not sufficiently large ( $n < 45$ ) to ensure sufficient statistical power to detect differences between countries. This left 503 eligible for analysis.

To evaluate differences in acceptability of mental health services across predictor variables (i.e., age, gender, religion, education, country and symptom severity), categorical groups were created by dividing respondents in the following ways: (a) Age was collapsed into four categories: (1) *18-29 years*, (2) *30-55 years*, (3) *56-64 years*, and (4) *65+ years*. Age groups 56-64 and 65+ years were not included in the analysis because of small number of people in these age groups; (b) Religion was collapsed into three categories: (1) *Muslim*, (2) *Christian*, and (3) *No Religion/Other*; (c) Education was collapsed into three categories: (1) *Year 12 or less*, (2) *Diploma/Certificate*, and (3) *Bachelor or greater*; (d) Symptom Severity was collapsed into two categories of psychological distress levels: (1) *Low Distress* ( $K-10 < 22$ ) and (2) *High Distress* ( $K-10 \geq 22$ ). Participants in the high distress group were more likely to be representative of a clinical population and receive a diagnosis of anxiety or depressive disorders and vice-versa (Andrews & Slade, 2001). Thus, the categorical grouping of K-10 allows for relevant comparisons between clinical and non-clinical populations in their preferences for treatment and (e) Country of participants included

Arab people born in the following countries with a minimum sample size of 45: (1) *Algeria*, (2) *Australia*, (3) *Egypt*, (4) *Iraq*, and (5) *Yemen*. As the main FB recruitment strategies of the current study targeted country of residence, it is speculated that the variable *Country* approximates to the country of residence.

### **3.2.5 Statistical Analysis**

The relationships between predictor variables and dichotomous (i.e., No or Yes/Maybe) outcome variables were examined using Multivariable Binary Logistic Regression and a stepwise selection procedure. The dichotomous variables included the following: (a) willingness to speak to a psychiatrist, psychologist or counsellor for help with anxiety and depression; (b) taking medication prescribed by a doctor or psychiatrist for anxiety or depression; and (c) trying an online Internet-delivered treatment if they experienced anxiety or depression. Each of the stepwise regressions employed a binomial distribution with a log link function. All of the predictor variables initially entered in the model and in a sequence of steps, non-significant predictor variables ( $p > .05$ ) were removed one at a time (i.e., with the least significant predictor removed first). The binary logistic regressions re-run retaining all remaining significant predictor values ( $p \leq .05$ ). To aid interpretation of logistic regressions exponentiated beta values denoting a change in odds (OR) were calculated adjusting for all other predictors in the model. As predictor variables were dichotomous, ORs indicates the increase or decrease in likelihood an outcome occurs relative to the reference group. In addition, the frequencies (%) of the significant unique predictors (i.e.,  $p < .05$ ) of the outcome variables were calculated by integrating the final model coefficients of the multiple regression. Respondents with missing data were omitted from specific analyses where the missing information occurred.

Hypotheses were examined by evaluating the participants' willingness to try mental health services (i.e., visit a mental health professional, medication and Internet-delivered treatments). The first hypothesis was examined with each preferred mode of delivery of mental health treatment (i.e., "talking to a mental health professional", "taking medication", or "trying an Internet-delivered treatment") divided into either *No* or *Yes/Maybe* groups. The second hypothesis was tested by comparing the difference in willingness to try mental health treatments between participants born in *Australia, Algeria, Egypt, Iraq and Yemen*. All analyses were performed using the Statistical Package for Social Sciences (SPSS) version 22.0 for Windows (SPSS Inc., Chicago, IL).

### 3.3 Results

#### 3.3.1 Demographic and Treatment Characteristics

The participant demographic characteristics of the sample are shown in Table 3.1. The final sample ( $N = 503$ ) consisted of participants born from Algeria ( $n = 112$ ), Australia ( $n = 54$ ), Egypt ( $n = 51$ ), Iraq ( $n = 232$ ) and Yemen ( $n = 54$ ). The mean age of the sample was 29 ( $SD = 10$ ), ranging from 18 to 69 years.

The mental health status and preferences for mental health treatment for the sample are shown in Table 3.2. The mean K10 of the sample was 23 ( $SD = 8$ ), with 49% of respondents in the final sample reporting high levels of psychological distress (i.e.,  $K10 \geq 22$ ). With a Bonferroni correction and alpha set at 0.0125 (.05/4), Arabs born in Australia ( $M = 17.67$ ,  $SD = 5.74$ ) were found to have marginally lower psychological distress levels than Arabs born in Iraq ( $M = 24.13$ ,  $SD = 8.01$ ;  $p = .025$ ), Egypt ( $M = 23.37$ ,  $SD = 8.63$ ;  $p = .16$ ), Algeria ( $M = 22.62$ ,  $SD = 8.31$ ;  $p = .12$ ) and Yemen ( $M = 24.07$ ,  $SD = 8.04$ ;  $p = .12$ ).

Table 3.1

*Demographic Characteristics of Respondents*

| <b>Variable</b>               | <b>Final Sample (N=503)</b> |          |
|-------------------------------|-----------------------------|----------|
|                               | <b>n</b>                    | <b>%</b> |
| <b>Gender</b>                 |                             |          |
| Male                          | 319                         | 63%      |
| Female                        | 184                         | 37%      |
| <b>Age</b>                    |                             |          |
| Mean                          | 29 (10)                     |          |
| Range                         | 18 to 69                    |          |
| 18 to 29 years                | 309                         | 61%      |
| 30 to 55 years                | 180                         | 36%      |
| 56 to 64 years                | 11                          | 2%       |
| 65 + years                    | 3                           | 1%       |
| <b>Religion</b>               |                             |          |
| Muslim                        | 437                         | 87%      |
| Christian                     | 60                          | 12%      |
| No affiliation/other          | 6                           | 1%       |
| <b>Marital Status</b>         |                             |          |
| Single/Never Married          | 293                         | 58%      |
| Married/De Facto              | 188                         | 37%      |
| Separated/Divorced/Other      | 22                          | 5%       |
| <b>Education</b>              |                             |          |
| High School or less           | 131                         | 26%      |
| Certificate/Diploma/<br>Other | 95                          | 19%      |
| University                    | 277                         | 55%      |

*Note.* Standard deviations are shown in parentheses. All data was self-reported. Numbers and percentages are rounded to nearest whole number.

Table 3.2

*Mental Health Status, and Treatment Preferences*

|   | Final Sample<br>(N=503) |     |
|---|-------------------------|-----|
| Variable  | n                       | %   |
| Mental Health Status (Mean K10)                                       | 23.02 (8.18)            |     |
| Psychological distress collapsed in 2 levels                          |                         |     |
| Low Group: K10 score < 22   | 256                     | 51% |
| High Group: K10 score ≥ 22  | 247                     | 49% |
| Preferences for mental health treatment <sup>a</sup>                  |                         |     |
| Try a free Internet-delivered treatment course                        | 365                     | 73% |
| Take medication   | 233                     | 46% |
| Talk to mental health professional (e.g., psychiatrist, psychologist) | 183                     | 36% |

*Note.* Standard deviations are shown in parentheses. All data were self-reported. K10 = Kessler 10-item scale of psychological distress.

<sup>a</sup>Respondents who answered Yes or Maybe were collapsed into one group.

### **3.3.2 Hypothesis 1: Acceptability of Mental Health Services**

In the sample, 36% (183/503) and 46% (233/503) of participants reported that they would be willing to visit a mental health professional or take prescribed medication for concerns about anxiety and depression, respectively. In addition, 73% (365/503) of those who answered the question about Internet-delivered treatment reported that they would be willing to try an Internet-delivered treatment for concerns with anxiety and depression.

### **3.3.3 Hypothesis 2: Country of Birth Differences for Acceptability of Mental Health Services**

Differences in acceptability of mental health services by country while controlling for other demographic and symptom severity predictors are shown in Table 3.3. Arabs born in Australia (70%) were found to be significantly more likely than Arabs born in Algeria (35%;  $p < .001$ ), Egypt (45%;  $p = .005$ ), Iraq (29%;  $p < .001$ ) and Yemen (27%;  $p < .001$ ) to endorse that they would consult a mental health professional if they were experiencing symptoms of anxiety or depression. In contrast, no country of birth differences were found for taking medication and trying Internet-delivered treatment.

### **3.3.4 Other Findings: Gender, Symptom Severity and Acceptability of Mental Health Services**

Table 3.3 shows the significant unique demographic predictors of the acceptability of mental health services. Table 3.4 shows the estimated frequencies of unique predictors once the final model coefficients had been integrated.



These Tables show that after controlling for other socio-demographic predictors (i.e., age, religion, education, and country), Arab females were significantly more likely than Arab males to try Internet-delivered treatment (90% vs. 79%;  $p = .005$ ). In addition, Arab participants in the low distress group (i.e. K-10 < 22; 45%) were significantly more likely ( $p = .043$ ) than Arab people in the high distress group (i.e., K-10  $\geq$  22; 37%) to visit a mental health professional for concerns about anxiety and depression (see Table 3.4). However, the reverse was true for Internet-delivered treatment with the high distress group (88%) who were significantly ( $p = .035$ ) more likely to try Internet-delivered treatment than those in the low distress group (81%), even after controlling for other demographic predictors of age, gender, education, religion, and country.

Table 3.3

*Multiple Stepwise Regression Analyses for the Unique Prediction of Demographics and Symptom Severity on Treatment Preferences*

| Outcome Variables                 |            |       |              |       |                            |      |              |   |                                  |      |              |      |
|-----------------------------------|------------|-------|--------------|-------|----------------------------|------|--------------|---|----------------------------------|------|--------------|------|
| Visit Mental Health Professional  |            |       |              |       | Take Prescribed Medication |      |              |   | Try Internet-Delivered Treatment |      |              |      |
| Analysis                          | Univariate |       | Multivariate |       | Univariate                 |      | Multivariate |   | Univariate                       |      | Multivariate |      |
| Predictors                        | OR         | p     | OR           | p     | OR                         | p    | OR           | p | OR                               | p    | OR           | p    |
| Demographic Predictors            |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| Age (ref =30-55years)             |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| 18-30 years                       | 0.85       | .424  | -            | -     | 0.96                       | .842 | -            | - | 1.21                             | .474 | -            | -    |
| Gender (ref=Female)               |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| Male                              | 0.69       | .063  | -            | -     | 0.98                       | .922 | -            | - | .42                              | .005 | .43          | .005 |
| Religion (ref=Christian)          |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| Muslim                            | 0.22       | <.001 | -            | -     | 1.58                       | .118 | -            | - | 1.18                             | .646 | -            | -    |
| Education (ref= Degree or Higher) |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| Year 12 or lower                  | 1.15       | .564  | -            | -     | 1.54                       | .056 | -            | - | 1.40                             | .316 | -            | -    |
| Diploma or Certificate            | 1.37       | .202  | -            | -     | 0.97                       | .893 | -            | - | .76                              | .381 | -            | -    |
| Country of Birth (ref=Australia)  |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| Algeria                           | 0.20       | <.001 | 0.23         | <.001 | 1.66                       | .145 | -            | - | 1.38                             | .460 | -            | -    |
| Egypt                             | 0.26       | .002  | 0.29         | .005  | 1.71                       | .200 | -            | - | 1.37                             | .558 | -            | -    |
| Iraq                              | 0.15       | <.001 | 0.17         | <.001 | 1.35                       | .355 | -            | - | 1.18                             | .675 | -            | -    |
| Yemen                             | 0.13       | <.001 | 0.15         | <.001 | 1.51                       | .305 | -            | - | 2.48                             | .119 | -            | -    |
| Symptom Severity (ref = Low)      |            |       |              |       |                            |      |              |   |                                  |      |              |      |
| High                              | 0.53       | .001  | 0.60         | .043  | 0.78                       | .183 | -            | - | 1.78                             | .029 | 1.76         | .035 |

Note. Low = low distress group where K-10 < 22; High = High Distress group where K-10 ≥ 22. Non-significant multivariate predictors were left as blank entries.

Table 3.4

*Model Based Estimates of Frequencies (%) of Significant Unique Predictors<sup>a</sup> for Treatment Preferences*

|                               | Outcome Variables                |             |                                  |             |
|-------------------------------|----------------------------------|-------------|----------------------------------|-------------|
|                               | Visit Mental Health Professional |             | Try Internet-Delivered Treatment |             |
|                               | (%)                              | 95% Wald CI | (%)                              | 95% Wald CI |
| <b>Gender</b>                 |                                  |             |                                  |             |
| Male                          | -                                | -           | 79                               | 73 - 83     |
| Female                        | -                                | -           | 90                               | 84 - 94     |
| <b>Country of Birth</b>       |                                  |             |                                  |             |
| Australia                     | 70                               | 56 - 82     | -                                | -           |
| Algeria                       | 35                               | 27 - 45     | -                                | -           |
| Egypt                         | 45                               | 31 - 59     | -                                | -           |
| Iraq                          | 29                               | 23 - 35     | -                                | -           |
| Yemen                         | 27                               | 16 - 40     | -                                | -           |
| <b>Symptom Severity</b>       |                                  |             |                                  |             |
| High Distress (K10 $\geq$ 22) | 37                               | 30 - 45     | 88                               | 83 - 92     |
| Low Distress (K10 < 22)       | 45                               | 38 - 52     | 81                               | 73 - 83     |

*Note.* Non-significant multivariate predictors were left as blank entries.

<sup>a</sup>predicted value once the final model coefficients of the multiple regression are integrated.

### 3.4 Discussion

The aim of the present study was to contribute to recent reports about the acceptability of mental health services in some Arab populations. The sample comprised Arab respondents born in Algeria, Australia, Egypt, Iraq, and Yemen. Similar to previous research (Al-Krenawi, 2002; Al-Krenawi et al., 2009; Al-Krenawi & Graham, 2011; Bener & Gbuloum, 2011; Kayrouz et al., 2014), this study found moderate to high rates of acceptability of mental health services in Arab people. The hypothesis that more than 50% of the participants would report being willing to use traditional face-to-face and online mental health services was partially supported. The hypothesis that Arab people living in Australia would be more willing to seek mental health treatment than Arab people living in Algeria, Egypt, Iraq, and Yemen was also partially supported.

An unexpected finding was that Arab people who experience more severe psychological symptoms would be more likely to try online treatments than those experiencing less severe symptoms. In contrast, the reverse was true regarding traditional face-to-face treatments; that is, Arab people who experience more severe psychological symptoms would be less likely to talk to a mental health professional than those experiencing less severe symptoms. It should be noted, however, that these differences, although statistically significant, were small, indicating the need for replication in larger samples.

An interesting finding was of the difference in the acceptability of face-to-face and online mental health services. The results indicated that less than half of respondents (36%) reported a willingness to see a mental health professional face-to-face for concerns about anxiety and depression. This is consistent with previous research that found a similar

proportion (37%) of university Arab students in Egypt, Israel, Kuwait and Palestine willing to visit a mental health professional (Al-Krenawi et al., 2009). Moreover, and similar to a study of Arab people in Israel (Al-Krenawi, 2002), about half of the participants (46%) reported a willingness to take prescribed medication for anxiety and depression. In contrast, more than 70% of respondents reported a willingness to try an Internet-delivered treatment for anxiety and depression. These acceptability rates were higher than a previous study conducted with Arab Australians where 55% reported a willingness to try Internet-delivered treatment (Kayrouz et al., 2014). One possible explanation for this could be that the current study provided more detailed information about what was involved in Internet-delivered treatment compared to the previous study indicating that attitudes to different models of mental health service provision are potentially modifiable with educational and promotional techniques. However, it also is noted that the online nature of the survey may have resulted in a sample more likely to consider Internet-delivered services to be acceptable.

Differences in the acceptability of mental health services based on country were also found with respect to the question of consulting a mental health professional. The present results indicated that Arabs born in Australia (70%) were more likely than Arabs born in Algeria (35%), Egypt (45%), Iraq (29%), and Yemen (27%) to endorse a willingness to consult a mental health professional if they had troubling symptoms of anxiety or depression. These differences could be due to a number of barriers, including cost and illiteracy. The high poverty rates for Arab people living in Algeria, Egypt, Iraq and Yemen means that many Arab people cannot afford to visit mental health professional. Moreover, the comparatively lower literacy rates in the aforementioned Arab countries (United Nations Educational Scientific and Cultural Organisation, 2015) could indicate that many may not

even be aware of the availability of mental health professionals. Finally, although comparative studies of mental health literacy have not been conducted, these differences may reflect the greater exposure and access to face-to-face and online mental health services for Arab people living in Australia.

In addition to mainstream mental health services, there are several transcultural mental health services designed for culturally and linguistically diverse (CALD) communities throughout Australia. Moreover, Australia has higher numbers of psychiatric beds, psychiatrists, psychiatric nurses, and psychologists per capita (Australian Institute of Health and Welfare, 2012; World Health Organisation, 2014) when compared to Arab people living in Algeria, Egypt, Iraq and Yemen (Okasha, Karam, & Okasha, 2012; World Health Organisation, 2014). However, this explanation is not entirely satisfactory, because despite the greater availability of online mental health services in Western countries like Australia, these differences based on country were not replicated when respondents were asked about the acceptability of online mental health services. Moreover, in our sample, acceptability rates across all countries were high, indicating the considerable potential of online treatments in addressing the lack of availability of mental health services in the Arab world.

An unexpected and encouraging finding was that Arab female respondents in the current sample were more willing to try Internet-delivered treatment compared to their Arab male counterparts. This pattern appears to be different to that reported by previous research with Arab populations which has found that males report more willingness to access psychological services (Al-Krenawi, 2002; Al-Krenawi et al., 2009). This discrepancy may indicate that Internet-delivered treatment has potential for reducing the gender norm barrier

commonly reported among Arab populations (Al-Krenawi & Graham, 1999; Gearing et al., 2012). This norm dictates that a female is required to be accompanied by her husband or father in public, limiting their access to professional help without the company of their husband or father. Internet-delivered treatment may reduce this gender norm barrier allowing Arab females to access treatment from the privacy of their home where accompaniment is no longer required.

Another encouraging finding was that symptom severity did not hinder Arab respondents' willingness to try online mental health services. Previous research has found that individuals with severe psychological symptoms are less likely to seek treatment from mental health services, known as the help-seeking behaviour paradox (Cigularov, Chen, Thurber, & Stallones, 2008; Deane, Wilson, & Ciarrochi, 2001; Rickwood, Deane, Wilson, & Ciarrochi, 2005; Ryan, Shochet, & Stallman, 2010). The results of the present study provide further support for this paradox in relation to face-to-face, but not online mental health services. Arab respondents experiencing more severe psychological symptoms are more likely to be willing to try Internet-delivered treatment than those experiencing less severe psychological symptoms, and the reverse was found for face-to-face mental health services. Previous research has found similar results with university students and has suggested that the greater willingness to try online mental health services may be explained by the anonymity offered by online services, which could address the greater perceived stigma reported by those with more severe symptoms (Ryan et al., 2010). It is expected that this is the case with Arab populations who may experience even greater stigma than university students from Western countries. However, future research should replicate the present results with larger sample sizes and should also examine the reasons why Arab

respondents with more severe symptoms are more willing to try online mental health services.

### **3.4.1 Limitations**

Despite considerable attempts at promoting the study, the final sample size was relatively small. Thus, caution is needed in generalising the results of the current study and these results provide baseline data for the acceptability of mental health services in an Arab sample population. Further, by virtue of substantial online promotion of the survey, it is important to acknowledge that the present study employed a convenience sample of adults who were online and who thereby, may have pre-existing positive attitudes towards research, mental health services and Internet-delivered treatments. A final limitation is the groupings of Arab people based on country of birth could be an oversimplification of the cultural effects of the attitudes and preferences towards mental health services as it does not account for those living in one country who were born in another. However, based on our FB recruitment methods, which targeted country of residence only, country of birth is believed to closely approximate country of residence. Notwithstanding these limitations, the present results make an important contribution regarding what is known about the acceptability of mental health services amongst Arab people worldwide. However, replication with larger sample sizes across a broader number of Arab countries is recommended as targets for future research.



### 3.4.2 Conclusion

Consistent with previous research (e.g., Gearing et al., 2012; Kayrouz et al., 2014), the Arab people in the present study reported high levels of psychological distress. However, Arab people from several countries reported a moderate to high willingness to use traditional as well as Internet-delivered mental health services. An encouraging finding is that, irrespective of age, gender, education, country and religion, Arab respondents who experienced more severe psychological distress were willing to try several types of mental health services. The challenge for Arab governments is to respond to the WHO *mhGAP* call to action and find the resources to develop a mix of acceptable traditional and non-traditional mental health services to reduce the burden of mental disease in the Arab world.

## **4.0 - Study 3: Facebook as an Effective Recruitment Strategy for Mental Health Research of Hard-to-Reach Populations**

A version of the following chapter was published. The candidate (i.e., lead author) designed and promoted the study, conducted the analyses and drafted the manuscript:

Kayrouz, R., Dear, B. F., Karin, E., & Titov, N. (2016). Facebook as an effective recruitment strategy for mental health research of hard to reach populations *Internet Interventions*. doi: 10.1016/j.invent.2016.01.001

### **4.1 Introduction**

Facebook (FB) is the most popular social media platform in the Western world, with an estimated global membership of 1.49 billion people (Facebook, 2015a). The use of FB has extended beyond maintaining social contacts to use as a platform for commerce, health, education, and a broad range of other purposes. By virtue of its widespread use, relative anonymity, cost-effectiveness and acceptability, FB is increasingly being used as a strategy of recruitment for research (e.g., Batterham, 2014; Berry & Bass, 2012; Eysenbach et al., 2012; Harris, Loxton, Wigginton, & Lucke, 2015; Koenings, Martin-Biggers, & Byrd-Bredbenner, 2015; Nelson, Hughes, Oakes, Pankow, & Kulasingam, 2014; Wen-Cheng et al., 2011; Young, Tate, Rossmann, & Hansen, 2014) replacing traditional recruitment strategies (Harris et al., 2014; van Voorst et al., 2015). More recently, FB has also been successfully used to facilitate recruitment of populations who might not respond to traditional recruitment strategies, including adolescents (Amon, Campbell, Hawke, & Steinbeck, 2014; Amon et al., 2015), young adults aged 18-23 (Loxton et al., 2015) and

CALD minorities (Ünlü Ince et al., 2014).

For example, a recent study (Ünlü Ince et al., 2014) reported a comparison of outcomes when using different promotional techniques to recruit Turkish immigrants in Holland to a research trial. These researchers compared traditional promotional techniques, including email distribution lists, press releases, digital mailing, flyers, and newspapers advertisements, with a FB *personal* and *public fan page* designed specifically for the research study. FB public fan pages are profiles or sites created in Facebook for organisations to share their stories and connect with people who choose to “like” their page and become fans. FB personal pages are profiles or sites created for individuals to share their information (Facebook, 2015b). Unlu Ince et al. (2014) noted that their FB personal and public fan pages resulted in 76% of applicants to the research trial, a proportion superior to all the other recruitment strategies they employed combined. Other studies have reported similar results comparing FB with traditional recruitment campaigns (Loxton et al., 2015). This highlights the potential of Facebook in the recruitment of other hard-to-reach CALD populations, such as the Arab community.

The term *Arab people* refers to individuals of an Arabic-speaking background with origins from 22 countries in North Africa and the Middle East (Victorian Arabic Social Services, 2010). Arab people are a difficult to reach and under-researched population in mental health research (Abudabbeh & Hays, 2006; Redwood & Gill, 2013). As of May 2014, the total number of Arab FB users was 81 million, compared with 54 million 12 months earlier, representing a FB penetration rate in May 2014 of 21.5% (Arab Social Media Report, 2014). The growing numbers of FB users in the Arab region indicate that this platform could be used to facilitate recruitment of Arab people into mental health

research. However, to our knowledge, there are no published accounts of using FB for this purpose. Given the limited evidence of efficacy of psychological treatments with Arab people (Gearing et al., 2012; Takriti, El-Sayeh, & Adams, 2005), recruitment of Arab people to mental health research is an urgent priority.

The present study aimed to contribute to the emerging literature by comparing traditional and FB recruitment strategies using data from a recent trial of Internet-delivered cognitive behavioural treatment (iCBT) for anxiety and depression that targeted Arab people (see Study 5 of this thesis; Kayrouz, Dear, Karin, Gandy, et al., 2016). At the time of the study, FB offered several promotional strategies including: (1) Promoting posts; (2) promoting public fan pages; (3) promoting websites and (4) promoting events. The present study also sought to extend on the available literature by also comparing the time and costs associated with traditional and FB strategies. Consistent with recent reports, it was expected that FB strategies would be superior to traditional recruitment strategies.

## **4.2 Method**

### **4.2.1 Design**

The evaluation of recruitment strategies involved a post hoc design. The design was enacted as a response to the low participation rate arising from traditional strategies for a trial of a free Internet-delivered cognitive behaviour therapy for Arab people (Study 5; Kayrouz, Dear, Karin, Gandy, et al., 2016) and the emerging literature about the effectiveness of Facebook as a recruitment strategy (e.g., Harris et al., 2015; Loxton et al., 2015). Consequently, the research team thought it was important to report findings in

order to inform other researchers about the potential of FB in reaching hard-to-reach populations. A formal evaluation of cost, time, and scale of recruitment was performed in order to better understand the outcomes and limitations of each strategy. Details of the main study are described in more detail by Kayrouz and colleagues (2016) and relevant information is summarised below.

#### **4.2.2 Background Information About the Main Study (Study 5)**

The main study aimed to evaluate the efficacy and acceptability of a culturally modified version of an evidence-based treatment, the *Wellbeing Course* (Dear, Staples, et al., 2015; Titov, Dear, Ali, et al., 2015; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov, Dear, Staples, Terides, et al., 2015) for use with Arab people. The modified course, the *Arabic Wellbeing Course*, is a five-lesson iCBT intervention delivered over eight weeks targeting symptoms of anxiety and depression (Kayrouz et al., 2015). The main study was approved by the Human Research Ethics Committee of Macquarie University, Sydney, Australia, and registered as a clinical trial with the Australian New Zealand Clinical Trials Registry, ACTRN12614000124639.

The main study aimed to recruit 350 Arab people, regardless of location in the world. Inclusion criteria for participation in the main study were the following: (1) person who self-identified as being of Arabic ancestry (i.e. the person, their parents or grandparents were born in an Arabic-speaking country); (2) living anywhere in the world including Arab and non-Arab countries; (3) between the ages of 18 and 70; and (4) having reliable Internet access. Exclusion criteria for participation were the following: (1) experiencing very severe symptoms of depression defined as a total score  $\geq 23$  or a score

> 2 on question 9 of the PHQ-9 (Kroenke, Spitzer, & Williams, 2001); and (2) if taking medication for anxiety or depression, not having been on a stable dose for at least one month.

#### **4.2.3 Outcome Measures Used in the Present Study**

The present study examined two outcome measures evaluating the cost and time effectiveness of traditional and FB strategies. The two outcome measures of interest included the following: (1) the cost in \$US of starting a new application due to the overall strategy (Facebook vs. Traditional), that is, the cost-effectiveness per person who applied; and (2) the time taken in weeks for a new application to occur because of the overall strategy (Traditional vs. Facebook), that is, time-effectiveness per person who applied.

The comparison of strategies was enabled through the collapsing of several, diverse recruitment strategies into two overall clusters of strategies, considered here as *Traditional* and *Facebook*. Recruitment was defined as those who started an application to the main study. Within each strategy, several steps were taken to attract participants. Over a period of 14 weeks, Traditional community engagement efforts such as radio interviews, newspaper advertisements, email circulation to health professionals, religious and secular organisations were taken. Some of these strategies and their effectiveness may have overlapped, making the unique comparison between more specific strategies unclear. However, paid FB strategies occurred at a different time, with no FB strategies used in some weeks. Thus, a distinct period of 28 weeks is used to compare a recruitment window where Facebook strategies were used uniquely, against the window of recruitment where traditional strategies were used.

The time and date of each started application to the main study were recorded by the research clinic software system. For traditional and FB strategies, new applications arising during the implementation of the respective strategies were used to measure the effectiveness of the overall strategy. Figure 4.1 shows a timeline of when traditional and FB recruitment strategies were implemented and the new applications arising at the time the recruitment strategies were used.

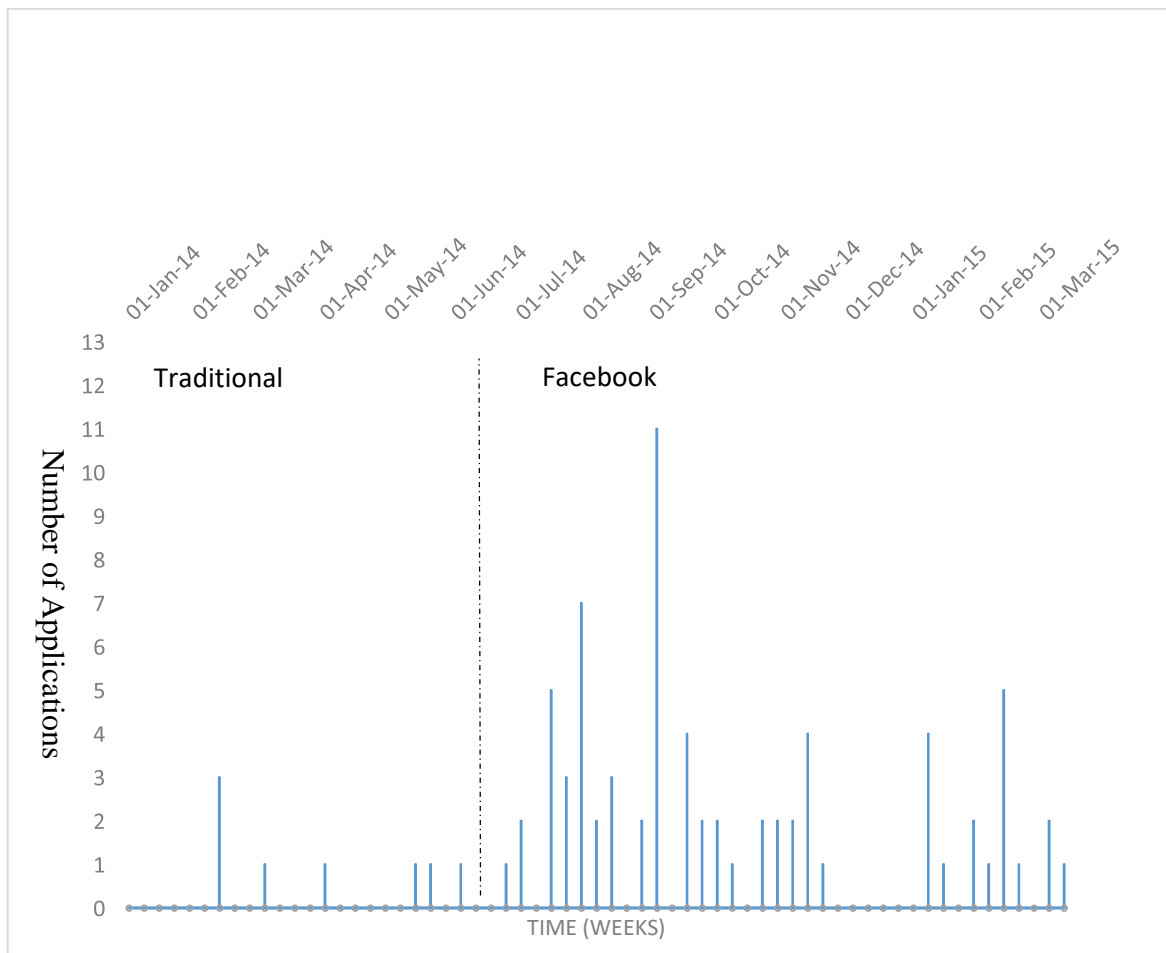


Figure 4.1. Number of applications by week in relation to recruitment strategies.

#### **4.2.4 Procedure**

Details of the promotional strategies are included in Table 4.1. Most of the traditional strategies were presented in English, with the exception of the two newsletters, the heading of the flyer, and the radio interviews, which were in Arabic. All of the Facebook strategies were presented in English. The reading age or literacy level assumed was the ability to read a local English or Arabic newspaper. Compared to FB, the text used in traditional strategies was longer and provided more details about the main study (see Figures 4.2 vs. 4.4 - 4.6). Culturally appropriate images (see Figures 4.2 and 4.6) and content were used across both strategies. The content of both strategies addressed the barriers of cost, the stigma of seeking help, and the lack of trust in mental health services (Gearing et al., 2012; Kayrouz et al., 2014), by emphasising that participation was free, anonymous and could be done from home (see Figures 4.2, 4.3 and 4.6). All recruitment campaigns targeted adults of Arabic ancestry who experience stress, anxiety or depression living in Western (e.g., Australia, U.K. and U.S.) and Arab (e.g., Lebanon, Egypt, Saudi Arabia and Kuwait etc.) countries.



Table 4.1

*Types of Recruitment for the Main Study*

| Method of recruitment   | Details of recruitment strategy (cost)  |
|---|---|
| 1. Press Release <sup>a</sup><br>Press release by Macquarie University  | Resulted in 2 editorial articles in local Arabic newspaper <sup>b</sup> (free)<br>Resulted in 2 radio interviews with local broadcasting stations <sup>b</sup> (free)<br>Macquarie University placed announcement on website (free)<br>Two mental health related organisations advertised study on website (free) |
| 2. Emailing <sup>a</sup><br>Researcher's personal and professional networks<br>94 organisations providing services to Arabs<br>108 Arabic-speaking health professionals<br>20 Muslim and Christian religious clergy for Arabs | 3 mental health care organisation promoted the research on their websites (free)<br><br>5 religious organisations – announcement on newsletters (free)<br>[resulting in collateral promotions, such as clergy speaking to respective congregations about the study]   |
| 3. Advertisements <sup>a</sup><br>Two advertisements in the largest Arabic newspaper in Australia   | 1 local newspaper and online advertisement over two weekends (U.S. \$440)<br>1 international newspaper and online advertisement for one day (free)  |
| 4. Facebook – Promoting Posts <sup>a</sup>  | 25 campaigns of boosting posts on FB page (U.S. \$2122)   |
| 5. Facebook – Promoting FB pages <sup>a</sup>   | 10 campaigns of boosting likes on FB page (U.S. \$438)  |
| 6. Facebook – Promoting Websites <sup>a</sup>   | 1 campaign of boosting website (U.S. \$18)  |
| 7. Facebook – Promoting Events <sup>a</sup>   | 1 campaign of paid boosting of an event (U.S. \$11)   |

Note. <sup>a</sup> published in English; <sup>b</sup> published in Arabic.

#### **4.2.4.1 Traditional recruitment strategies.**

The recruitment campaign began by utilising traditional strategies (see Table 4.1). These strategies included the following: (1) a media release by the University media and communications department to relevant media organisations; (2) emails with attached flyers (see Figure 4.2) to 94 different relevant Arab organisations (e.g., medical, secular and religious organisations), 108 health professionals and to approximately 80 interested individuals; (3) two newspaper advertisements in English, costing US\$440 (see Figure 4.3) and two editorials in Arabic in an Australian Arabic newspaper; and (4) flyers (see Figure 4.2) in English in religious organisations and the Australian Lebanese Medical Association's newsletter. Due to a slow rate of recruitment from these traditional strategies, and the emerging evidence for FB in the recruitment of CALD minority populations (Ünlü Ince et al., 2014), FB recruitment strategies were then employed. Overall, the traditional recruitment strategies were active for 14 weeks from Jan to July 2014, with emails sent for 3 weeks, newsletters for 2 weeks, print and online ads for 4 weeks, SBS radio interview podcast for 2 weeks and newspaper editorial for 3 weeks (see Figure 4.1).

DID YOU KNOW? ...

- 1 in 5 Adults experience anxiety or depression each year.
- Research shows that lack of time, cost, and stigma are barriers stopping people learning how to improve their emotional health.
- There are practical, but proven skills that can help people manage low mood, stress and anxiety. The Wellbeing Course teaches such skills.

## A Free Internet-Delivered Education Course to Strengthen Emotional Health in Adults of an Arabic Speaking Background (18+)

## استشارة مجانية حول الصحة النفسية لأبناء الجالية العربية



### Free, Self-Guided and Anonymous

The Course is **free** meaning it costs you nothing to participate.

The Course is **self-guided** meaning that you work online through the material of the Course on your own.

The Course is **anonymous**, if you choose we will not know who you are.

### What is the purpose of the Arabic Wellbeing Course?

The Arabic Wellbeing Course is a free internet-delivered education course that teaches practical skills for managing symptoms of low mood, stress and anxiety.

We have created versions of the Wellbeing Course for different ethnic groups, including for Arab Adults. We did this because we know many people have difficulties with low mood, stress and anxiety, but few people have access to, or never seek effective treatment. The Wellbeing Course is suitable for:

- Adults of Arabic heritage
- Adults aged 18 and over
- Adults with symptoms of low mood, stress and anxiety
- Adults that have a basic English reading level.

### What does the Course involve?

- The Arabic Wellbeing Course consists of 5 online lessons completed over 8 weeks.
- Simple do it yourself (DIY) guides are also available to help you to learn the material.
- Your participation is anonymous, that is, we will not know who you are, except we will ask for an email address so we can send you important information.
- But, we will ask you to fill in online questionnaires about your symptoms before, during and after Course and at 3 and 12 months after the Course. These questionnaires will take 10 to 15 minutes to complete.



### How to Participate

Visit our website ([www.eccentreclinic.org](http://www.eccentreclinic.org)) and read more about the Arabic Wellbeing Course. Please also contact us via the details below if you have any questions.

Project Investigators: Mr Rony Kayrouz, Dr Blake Dear & A/Prof. Nick Titov

*Figure 4.2.* A flyer created for traditional recruitment strategies, distributed by email across 94 organizations, 108 health professionals and 80 interested individuals.

# Learn to manage stress, anxiety, worry and low mood from home

Macquarie University's eCentreClinic is  
now testing free online courses to help  
Arabic-speaking adults learn to manage:

- low mood, sadness and depression
- stress, anxiety, panic and worry

Take part and receive FREE treatment

**Find out more**

**E: [contact@ecentreclinic.org](mailto:contact@ecentreclinic.org)**

**[www.ecentreclinic.org](http://www.ecentreclinic.org)**



*Figure 4.3. Print and Online Media Ad*

#### **4.2.4.2 Facebook promotion strategies.**

The Facebook recruitment strategies were active for 28 weeks from July 2014 to March 2015. After creation of a personal profile and a dedicated FB public fan page about the research (for a detailed description of the process see Ünlü Ince et al., 2014), four FB promotion strategies were implemented (see Table 4.1), which are described below.

##### ***4.2.4.2.1 Promoting FB posts via boosting.***

*Promoting posts* occurs by paying for specific posts on a dedicated FB public fan page to have greater reach via *boosting*, a strategy whereby the post is made visible in the *news feeds* of followers of a FB page or to a specified target audience. Promoting posts has been found to be more effective in generating more likes (i.e., allows FB users to show their support) to a FB public fan page than FB advertisements (C. Chan, 2012; Young et al., 2014). Several campaigns ( $n = 25$ ; at a combined cost of US\$2122) of several different posts over 27 weeks were created to attract members of the Arab community to participate in the research. Posts primarily varied in terms of the images that were uploaded or attached to the post, and these comprised either animated images (see Figure 4.4) or static images of Arab individuals expressing sadness or anxiety (see Figure 4.6). Target audiences of boosted posts also varied across studies. Recruitment to the main study targeted the fans and friends of fans of the research team's public FB page. All posts were boosted to reach more FB users. For example, one post that was boosted targeted the fans and their friends of the dedicated research public fan page, males and females, aged, 18-65+, specified locations (e.g., living in Australia, Algeria, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, United Kingdom, Algeria, Egypt and Palestine), set a maximum budget (i.e., \$100) over a specified duration (i.e., 7 days) and finally pay for

the cost of the post (i.e., credit card details). Despite these differences, the content and structure of the posts were similar. A typically promoted post comprised a succinct description about the research, with a hyperlinked relevant image about anxiety and depression that directed the FB user to information about the main study on the research website (see Figure 4.4).



Figure 4.4. An example of a promoted post.

#### 4.2.4.2.2 Promoting FB public fan pages.

FB public fan pages can be *promoted* by paying for the FB public fan page to have greater reach and generate more fans via *liking* the page. However, if posts are not boosted they reach only a fraction (i.e. approximately 1-2 %) of one's fans of their FB public fan page. In comparison, boosted posts reach approximately 20% of the fans of a FB public fan page and friends of fans making this strategy an attractive

recruitment option. Ten campaigns over six weeks of promoting the dedicated research FB public fan page, eCC Arabic Wellbeing (at a cost of US\$438) were conducted prior and during the boosting of posts for the main study (see Figure 4.5) targeting the same audience as the FB boost post example in the previous section.

The screenshot displays the Facebook 'Get More Page Likes' campaign setup interface. It is divided into two main sections: 'Ad Preview' and 'Choose Audience'.  
**Ad Preview:** This section shows how the ad will appear in a news feed. It includes a 'Suggested Page' for 'ECC Arabic Wellbeing' with a sponsored post. The post features a blue background with the text 'DEPRESSION OR ANXIETY' and a line drawing of people. Below the image, it says 'ECC Arabic Wellbeing Community' and '8,060 people like this'.  
**Choose Audience:** This section allows for targeting specific demographics.  
 - **Location:** A dropdown menu for 'Countries' with selected options: Australia, United States, United Kingdom, Egypt, Lebanon, and Algeria.  
 - **Interests:** A dropdown menu with selected options: Arab world, Arab League, and Mental health.  
 - **Age:** A range selector set to '18' and 'No max'.  
 - **Gender:** Radio buttons for 'All', 'Men', and 'Women', with 'All' selected.  
**Choose Budget:**  
 - **Daily budget:** A text input field set to '\$11.00', with an estimated reach of '31 - 123 likes per day'.  
 - **Schedule:** Radio buttons for 'Run this ad continuously' and 'Choose when this ad will end'. The latter is selected, with a date picker set to '9/27/2014' and a location note '(Australia/Sydney)'.  
 At the bottom, there are links for 'Terms & Conditions', 'Cancel', and a blue 'Promote Page' button.

Figure 4.5. An example of a promoted FB public page.

#### 4.2.4.2.3 Promoting websites.

*Promoting websites* on FB public fan pages is achieved by paying for a website to have further reach using an advertisement created by FB. This advertisement requires the target website URL, a headline, text explaining the purpose of the page, that is, research, and an image on the FB public fan page. Similar to the FB post target audience, one campaign over two weeks (costing US\$18) was run with promoting websites in the main study, and an example is included as Figure 4.6.



Figure 4.6. An example of promoting a website.

#### 4.2.4.2.4 Promoting events.

The fourth promotional strategy offered by FB involved creating events on one's personal page and/or FB public fan page then *promoting that event* by inviting friends to participate in the research event. Using this strategy, the researcher creates a new event describing the details of the research, providing a location and time of the event, instructions on how to apply for the event and invites friends or fans to apply for the research. FB sends out automatic reminders to friends or fans as the date of the event approaches. This strategy also allows the researcher to post more information about the event as *comments*, and to answer questions about the event. FB allows payment to raise attendance at the event on FB public fan pages, and allows targeting of an audience by



demographic characteristics including language, age, gender, interests, behaviours and other categories (Facebook, 2014). The main study included two campaigns of promoting events over two weeks. The first used the *non-payment* option and the second used the *payment* option (costing US\$11) on the FB page (see Figure 4.7).



Figure 4.7. An example of a promoted event.

#### 4.2.5 Analytical Plan

A Poisson regression analysis was conducted on the count of started applications and the associated recruitment strategy. To account for the changing duration of active recruitment within each strategy, the number of weeks associated with each strategy was used as an offset variable. The Poisson model, with the offset variable, enables the

calculation of the recruitment efficacy as an incidence density ratio (IDR) for time. IDR-time is the number of weeks needed by each strategy in order to recruit one participant. A similar analysis was conducted to test the second aspect of recruitment efficacy, the amount of money spent on each strategy, and the corresponding count of successful cases (IDR-money). The IDR-time and the IDR-money were used as the dependent variables. The recruitment strategy as a group of strategies was used as an independent variable (i.e., the sum of all traditional strategies vs. the sum of all Facebook strategies). The Poisson model estimates the odds ratio ( $\exp(\beta)$ ) for IDR-cost and IDR-money, which indicates the increase or decrease in the cost and time of recruiting one participant resulting from the sum of traditional strategies relative to the sum of FB strategies, respectively. A Poisson regression analysis was conducted with SPSS22.

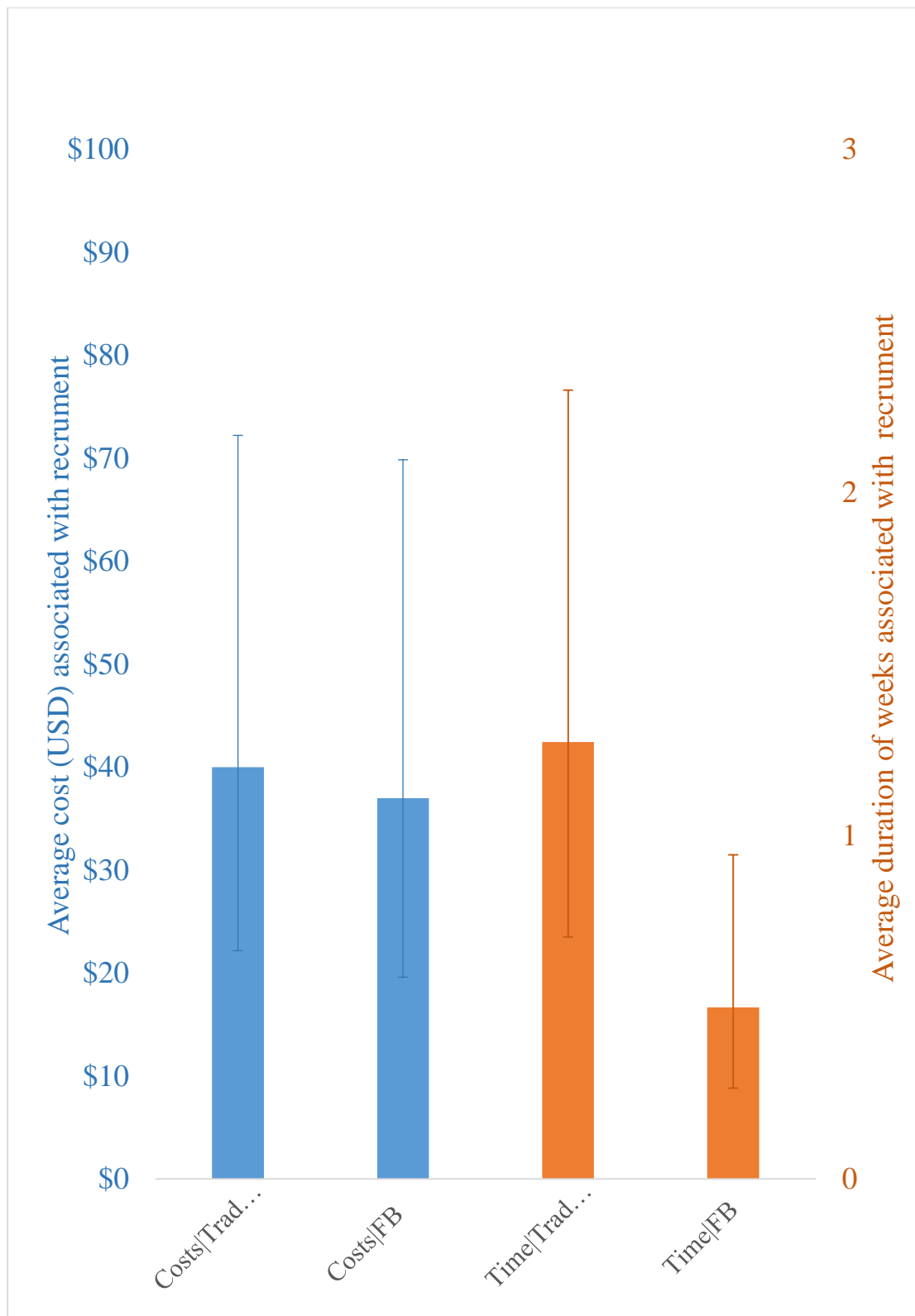
## **4.3 Results**

### **4.3.1 Demographic Characteristics**

Demographic data about people who were included in the 2007 Australian National Survey of Mental Health and Wellbeing (NSMHWB; Slade et al., 2009) were compared with the Arab sample obtained for the present study, to provide information about the characteristics of the obtained sample relative to an Australian sample who met diagnostic criteria for an anxiety or depressive disorder. Although the samples were not formally compared, this comparison indicated that the Arab sample had a similar proportion of females (56.0% in the Arab sample vs. 54.5% in the NSMHWB), similar proportion were married (45.0% vs. 49.0%), lower rates of employment (44.0% vs. 62.2%) and higher rates of post school qualification (90.0% vs. 33.0%).

### 4.3.2 Efficacy Analysis

FB recruitment strategies generated over 22,000 likes on the FB public fan page and 70 applications (86.4% of the total) for the main study at a cost of US\$37 per application, whereas traditional strategies yielded 11 applications (13.6%) at a cost of US\$40 per application (see Figure 4.8). Compared to traditional recruitment strategies, the IDR-money of the sum of FB strategies (i.e., US\$37 per application spent on FB to recruit one participant) was not significantly different from the IDR-money of the sum of traditional strategies at US\$40 per participant (*Wald*  $\chi^2 = .059$ ,  $p = .81$ ,  $\exp(\beta) = 1.08$ ). In relation to time-effectiveness (see Figure 4.8), the IDR-time of the sum of FB recruitment strategies at 0.5 week per participant was 2.5 times faster than the IDR-time of the sum of the traditional strategies at 1.27 weeks per participant (*Wald*  $\chi^2 = 8.30$ ,  $p = .004$ ,  $\exp(\beta) = 2.54$ ).



*Figure 4.8.* Time and money estimates associated with the recruitment of a single participant.

#### 4.4 Discussion

The primary aim of the present study was to compare the effectiveness of traditional and FB recruitment strategies for recruiting Arab adults worldwide for a research trial of a free Internet-delivered treatment for anxiety and depression. Only 23% of the target sample (81/350) was recruited using both recruitment strategies over 42 weeks. However, notwithstanding the failure of recruitment, the results indicated that 70/81 (86.4%) participants had been recruited via FB strategies compared with 11/81 (13.6%) via more traditional strategies. The FB recruitment strategies (\$37/participant) were not more cost-effective than traditional recruitment strategies (\$40/participant). However, FB was found to be more time-effective than traditional strategies with participants being recruited up to 2.5 times faster than traditional strategies. Thus, the findings of the current study add to existing research highlighting the value of considering FB recruitment strategies, alongside more traditional strategies, as a way of recruiting hard-to-reach populations.

The overall findings of the current study are consistent with recent reports supporting the potential of FB strategies to facilitate the recruitment of hard-to-reach groups compared with traditional techniques (Batterham, 2014; Harris et al., 2015; Loxton et al., 2015; Ünlü Ince et al., 2014). In the current study two particular FB strategies; that is, boosting posts and promoting FB public fan pages, seemed to have the largest impact on recruitment rates. This is broadly consistent with previous studies that have reported that boosting posts resulted in more participants being recruited compared with posting general FB ads (Fazzino, Rose, Pollack, & Helzer, 2015). However, the finding of similar cost-effectiveness of FB and traditional strategies is inconsistent with previous findings that reported traditional strategies were less cost-effective when compared to FB strategies (Batterham, 2014; Harris et al., 2015; Loxton

et al., 2015; Ünlü Ince et al., 2014). Notwithstanding the similarity in cost-effectiveness, FB offers a time advantage, recruiting participants at a faster rate than traditional strategies. This benefit has not previously been reported but represents an important advantage for researchers.

These results concerning the effectiveness of the FB strategy of combining boosting posts and promoting public fan pages need to be interpreted with caution because of the overlap used across the two FB strategies and the lack of previous research on promoting public fan pages. Despite this caveat, and as might be expected, these results provide preliminary evidence that certain FB promotional strategies may be more effective than others and highlight the importance of considering different strategies in efforts to recruit participants. Future research comparing the relative efficacy of different FB recruitment strategies and when they may or may not be helpful would be beneficial.

Notwithstanding their benefits, promoting events on one's personal FB profile is limited to one's FB friends and thus promoting events in this manner can quickly result in saturation. Further, promotion of a website is not targeted to specific CALD groups and may therefore be less effective as the promotion can result in the FB advertisement reaching interested people who are not of an Arabic-speaking background, but cannot participate in the main study. This is a potential question for future research, which could also examine the relative efficacy of promoting events and websites.

There are several aspects of FB promotional strategies and research promotion via FB that may contribute to their usefulness in the recruitment of hard-to-reach populations. First, as highlighted elsewhere (Ünlü Ince et al., 2014), FB provides an easy avenue for potential research applicants to contact their research team with any questions

or concerns prior to more formal contact about the study or the submission of applications to participate. This communication occurred in a media channel; that is, FB, which allows potential participants to ask questions and make comments about the research in which others can see and may facilitate engagement. We also suggest that FB provides an opportunity for potential applicants to become better informed about the research and the research team and the opportunity to develop a sense of the credibility and trustworthiness of the research team likely to influence decisions to participate in research. Research shows that information about credibility and the effectiveness of mental health interventions, which form part of what is considered mental health literacy, influence decisions to seek treatment (Jorm, 2012). Thus, if FB recruitment can be used to build credibility and positive expectations of intervention, then FB's potential for recruitment may be significant.

#### **4.4.1 Limitations**

Several limitations of this study should be acknowledged. First, a key limitation is that this was a post hoc study, and the traditional promotions all occurred before FB, with no randomisation or control for order. Second, the algorithms used by FB in promoting pages are known to change regularly and are likely to continue to change into the future. Thus, it is important that researchers understand how the different promotional strategies attract users, as the fundamental principles of this are likely to remain relevant with any changes made by FB. These principles are also likely to be helpful across other technological mediums (e.g., Twitter, Blogs) and other yet unknown social media services likely to emerge in the future. Third, FB may not be the best recruitment strategy for all communities. For example, those with low mental health literacy and poor Internet skills may still benefit from traditional promotions that can be

more direct and personal. Related to this limitation and the relatively small sample recruited, we note that researchers should avoid assuming that the characteristics of those recruited through FB are representative of the target population. Fourth, the use of FB as a recruitment tool required a significant commitment of time, but indirect costs associated with time were not calculated. Our experience was that starting the campaign required approximately 4 hours/week, but also required an ongoing commitment of daily monitoring, amounting to approximately 1 hour/week in the maintenance phase. However, it should also be noted that a significant commitment of time and associated costs were not calculated for traditional strategies, such as promoting the research to separate stakeholders and associated travel costs. Fifth, care must be taken by the researcher when using the personal profile of a researcher as part of the promotional strategy as the premise of FB involves creating *friends*, which is not entirely consistent with the typical ethical position of researchers and clinicians in relation to patients. The risks of this latter issue can be mitigated through regular clinical supervision, as well as clearly defined operational policies and procedures with respect to the use of FB and other social media in recruitment activities. Sixth, it is unclear if online recruitment would work as well if there were a face-to-face component to the research (e.g., the research is geographically restricted). Finally, the format and content of ads across traditional and FB approaches had to differ by virtue of the requirements for each and it is not possible to separate out the effects of these differences in format and content.

#### **4.4.2 Conclusions and Recommendations**

The findings of the current study add to existing research highlighting the value of considering FB recruitment strategies, alongside more traditional strategies, as a way of recruiting hard-to-reach populations for research. The present study highlights the



potential of FB and other technology-based recruitment strategies to provide access to research participants for studies aimed at developing and evaluating services for such populations. Nevertheless, despite the use of the FB recruitment strategies, it is important to note that the present total sample recruited was considerably smaller than the initial target numbers. Thus, although FB and other online recruitment strategies offer a new way of reaching potential participants, research exploring alternative and optimal strategies for engaging with hard-to-reach populations is needed.

## **5.0 - Study 4: A Feasibility Open Trial of Guided Internet-Delivered Cognitive Behavioural Therapy for Anxiety and Depression Amongst Arab Australians**

An abbreviated version of the following chapter was published. The candidate (i.e., the lead author) designed and promoted the study, culturally adapted the intervention, conducted the analyses and drafted the manuscript:

Kayrouz, R., Dear, B. F., Johnston, L., Gandy, M., Fogliati, V. J., Sheehan, J., & Titov, N. (2015). A feasibility open trial of guided Internet-delivered cognitive behavioural therapy for anxiety and depression amongst Arab Australians. *Internet Interventions*, 2(1), 32-38. doi: 10.1016/j.invent.2014.12.001

### **5.1 Introduction**

Anxiety and major depressive disorders occur in approximately one in five Australians over a twelve-month period (Slade et al., 2009) and similar rates of disorder have generally been found across cultures (Kessler et al., 2009), including Arab populations in Lebanon (Karam et al., 2006) and Iraq (Alhasnawi et al., 2009). In the last 15 years, the Arabic-speaking communities in Australia (*Arab Australians*) has grown by approximately 50% (Australian Bureau of Statistics 2006; Australian Bureau of Statistics, 2011) and are now the sixth largest group of immigrants to Australia (Australian Bureau of Statistics, 2011). A recent study (i.e., Study 1 of this present thesis) which examined mental health service use amongst Arab Australians ( $N = 252$ ) found that 32% of the sample had elevated levels of psychological distress, only 18% of whom reported seeking treatment from a mental health professional (Kayrouz et al., 2014). Barriers to treatment included low mental health literacy, lack of time and the

shame associated with seeking mental health treatment (Kayrouz et al., 2014). However, 90% reported they would be willing to try a psychological treatment for symptoms of anxiety and depression. Culturally adapted psychotherapy offers one way to address barriers and reduce psychological distress.

A key question, however, is whether or how to adapt psychological treatments for immigrant populations, such as Arab Australians and other culturally and linguistically diverse communities (CALD). Cultural adaptation has been defined as “the systematic modification of an evidence-based treatment or intervention protocol to consider language, culture, and context in such a way that it is compatible with the client’s cultural patterns, meanings, and values” (Bernal et al., 2009, p. 362). Importantly, increasing the compatibility between a psychological treatment protocol and a client’s value and meaning base is thought to enhance an individual’s engagement with treatment. Improved engagement is likely to result in increased exposure to and use of the treatment materials, which, in turn, could result in increased therapeutic benefit. Consistent with this, a recent meta-analysis reported that cultural-adapted psychotherapy was more efficacious than unadapted psychotherapy (Benish, Quintana, & Wampold, 2011) for CALD populations. Unfortunately, however, this meta-analysis did not include any studies comprising Arab immigrants and it is therefore unclear whether cultural adaption is necessary with Arab populations.

Another important issue is whether cultural adaptation is possible for heterogeneous immigrant groups, which comprise of multiple smaller identifiable groups with their own experiences, beliefs and values, such as Arab immigrants. The Arab world is defined as the countries where Arabic is the national language and consists of 22 countries and territories across North Africa and the Middle East. Mohit (2001) argues that, although meaningful heterogeneity does exist, there are also unifying

characteristics across the Middle East beyond language, such as the role of religion, which unifies many Arab people in their conceptualisation of mental illness. For example, although modern Arab psychiatry has adopted the etiopathogenesis model of mental illness based on the DSM model (Carnevali & Masillo, 2007-2008), there remains a dominant Arab model of distress and mental health associated with supernatural processes and religion. For this reason, religion plays a critical role in the mental health of individuals, families and communities (Nassar-McMillan & Hakim-Larson, 2003), with life stressors often being viewed as a test of faith (Abu-Ras & Abu-Bader, 2009; Aloud & Rathur, 2009).

For many Arab Muslims and Christians, severe distress and mental health are believed to be caused by the possession of *jinn* (i.e., spiritual beings) or the devil, respectively. Thus, mental illness may arise as a result of *weak faith* and can be viewed as a form of punishment from God (Al-Krenawi & Graham, 2000). Based on this model, many Arab people avoid treatment based on the fear that divulging their story may result in a stigmatising label of *majnun* (i.e., *being crazy*) and a person of weak faith, which may jeopardise the individual and their family's standing in the community.

One model for informing the extent and way in which psychological treatments should be adapted for use by different CALD groups is the selective and directed cultural adaptation framework (SDTAF; Lau, 2006). This model provides a compelling rationale suggesting that cultural adaptation needs to be driven by data, is not always necessary, and can sometimes lead to no improvement or worsening of treatment outcomes (Lau, 2012). The SDTAF proposes that any cultural adaptations need to be tested to ensure treatment outcomes are maintained or improved when compared to the non-adapted version. Further, this framework proposes that when selecting an intervention such as cognitive behavioural therapy (CBT) there needs to be empirical evidence of a *good fit*

between the non-adapted evidence-based treatment (EBT) and the targeted group (Lau, 2006). Importantly, conceptually and empirically, there is evidence that CBT may provide a good fit for Arab populations (e.g., Abudabbeh & Hays, 2006; El Kady et al., 2012; Hamdan-Mansour et al., 2009; Thomas & Ashraf, 2011).

From a conceptual standpoint, CBT, may potentially help to reduce stigma by virtue of its focus on current issues, and emphasis on the use of practical skills for managing symptoms of distress, anxiety and depression. Such models are also compatible with Arab treatment preferences, which include that treatment is short-term, directive, and does not require divulging of one's story (Al-Krenawi & Graham, 2000). Consistent with this, two trials have explored the efficacy of CBT among Arab people with posttraumatic stress disorder and reported positive outcomes (Stenmark et al., 2013; B. Wagner, Schulz, et al., 2012). Further, there is emerging evidence that Arab people are becoming more open to mental health treatment (Al-Krenawi, 2002; Al-Krenawi et al., 2009; Al-Krenawi & Graham, 2011; Kayrouz et al., 2014; Logan et al., 2016). Thus, there is good reason to believe that certain contemporary Western psychological treatments are potentially suitable for Arab individuals with anxiety and depression and there is some encouraging evidence to support this.

Recent developments in methods of delivering psychological treatments, such as the use of Internet-delivered CBT (iCBT), provides another opportunity to increase treatment seeking by Arab people, by offering privacy and increased anonymity (Andersson & Titov, 2014; Titov, 2007, 2011). One example of an iCBT intervention is the Wellbeing Course; a five-lesson online transdiagnostic treatment targeting symptoms of anxiety and depression and based on CBT (e.g., Dear, Staples, et al., 2015; Titov et al., 2013; Titov, Dear, Staples, Terides, et al., 2015). The Wellbeing Course is a structured skills-based course that focuses on teaching practical evidence-based

psychological skills (e.g., realistic thinking, assertiveness, behavioural activation and graded exposure) that assist in the management of symptoms of anxiety and depression. Psychotherapeutic change is believed to occur when people learn, practice, and adopt adaptive cognitive and behavioural habits that promote emotional wellbeing (Titov et al., 2013; Titov et al., 2012). This Course has been evaluated in several clinical trials (Kirkpatrick, Dear, Johnston, & Titov, 2013; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014) and is now used at an Australian national online mental health service, the *MindSpot Clinic* ([www.mindspot.org.au](http://www.mindspot.org.au)).

The present study aims to examine the feasibility and efficacy of a culturally adapted version of the Wellbeing Course, the Arabic Wellbeing Course, to treat symptoms of anxiety and depression amongst Arab Australians. Because of the absence of previous research exploring the efficacy of CBT treatment for Arab people experiencing depression or anxiety, an open-trial design was considered ethically appropriate.

## **5.2 Method**

### **5.2.1 Design and Hypotheses**

A single-group open trial design was utilised to examine the feasibility, acceptability and preliminary efficacy of the culturally modified iCBT Arabic Wellbeing Course for Arab Australians. A sample size of 15 was determined as sufficient (one-tailed test, power at 80%, and alpha at .05) to detect within-group Cohen's *d* effect size of .70; the minimum likely effect based on previous studies employing the Wellbeing Course (Titov et al., 2013). This study was approved by the Human Research Ethics

Committee of Macquarie University, Sydney, Australia, and registered as a clinical trial with the Australian New Zealand Clinical Trials Registry, ACTRN12163001329752.

It was hypothesised that (1) Arab Australians would show a statistically and clinically significant reduction in the symptoms of depression, anxiety, distress and disability; and (2) Arab Australians would rate the Course as worthwhile and would recommend the Course to a friend or family member.

### **5.2.2 Participants**

Interested adults applied online through a clinical research website ([www.ecentreclinic.org](http://www.ecentreclinic.org)), which provides information about anxiety and depression and conducts clinical research concerning Internet-delivered treatment. Two phases of recruitment occurred from 7 January 2013 to 4 March 2013 (Phase 1) and 22 April to 16 June 2013 (Phase 2). Details about the present study were circulated to participants in a previous online survey who expressed interest in future research (Kayrouz et al., 2014), the research clinic website and social media accounts of the research clinic. Additional promotion of the present study was provided during an interview with the lead author published in an Arabic newspaper, personal correspondence between the lead author and more than 100 organisations providing services to Arab Australians, to over 100 Arabic-speaking health providers, and to spiritual leaders of an Arabic-speaking background in Australia.

Over the two recruitment phases, six participants in Phase 1 and five participants in Phase 2 provided informed consent and volunteered to participate. Inclusion criteria were: (1) Living in Australia; (2) overseas-born or Australian-born person who self-identified as being of Arabic ancestry; (3) between the ages of 18 and 70; (4) having

reliable Internet access; (5) not receiving CBT elsewhere; (6) no history of a psychotic condition; (7) a Patient Health Questionnaire 9-item (PHQ-9) score  $> 4$  or a Generalised Anxiety Disorder 7-item (GAD-7) score  $> 4$  indicating at least mild depressive or anxiety symptoms, but not currently experiencing severe depression, which is (defined as a total score  $\geq 23$  or a score = 3 on question 9 of the PHQ-9; Kroenke et al., 2001); and (8) if taking medication for anxiety or depression, having been on a stable dose for at least one month. Participants who met the inclusion criteria were administered the Mini International Neuropsychiatric Interview Version 5.0.0 (MINI; D. V. Sheehan et al., 1998) to determine if they met diagnostic criteria for an anxiety or depressive disorder.

Of the 16 participants who applied to participate, 11 were eligible with 3 participants excluded for incomplete applications, one participant excluded for experiencing severe depression and the other for being outside the age range (see Figure 5.1). The sample had a mean age of 33.6 years ( $SD = 8.99$ ; range = 24 – 50) and was comprised of more females ( $n = 8$ , 73%) than males. The majority of participants were married ( $n = 7$ , 64%), with the remainder single ( $n = 3$ , 27%) or separated ( $n = 1$ , 9%). Seventy-three per cent of the sample ( $n = 8$ ) had attained at least a bachelor's degree, and 18% ( $n = 2$ ) attained a trade certificate, apprentice or other certificate. Six of the eleven participants (55%) reported they were in full-time or part-time employment, 3/11 (27%) were performing home duties, 1/11 (9%) unemployed and 1/11 (9%) reported not being able to work because of disability. All participants reported residing in New South Wales. The sample reported a mean weekly Internet usage of 15.6 hours ( $SD = 14.22$ ; range = 3 – 40). Five participants (45%) reported having had previous mental health treatment and one (9%) reported taking medication related to their symptoms. Four of the 11 (36%) participants met criteria for a principal diagnosis of a current major



depressive disorder, 3/11 (27%) met criteria for a principal diagnosis of generalised anxiety disorder, and 4/11 did not meet criteria for an anxiety or depressive disorder. Of the seven participants who met criteria for a mental health disorder, six participants met criteria for a comorbid diagnosis of a major depressive and anxiety disorders.

### **5.2.3 Questionnaire Measures**

#### **5.2.3.1 Primary measures.**

##### ***5.2.3.1.1 Patient Health Questionnaire – 9-item (PHQ-9; Kroenke et al., 2001).***

The PHQ-9 is a nine-item measure of the symptoms and severity of depression. It has a clinical cut-off score of 10 that predicts a DSM-IV diagnosis of depression with higher PHQ-9 scores indicating greater symptom severity. Internal consistency of the questionnaire is high ( $\alpha = .74 - .89$ ), and the questionnaire has good clinical sensitivity to change (Titov, Dear, McMillan, et al., 2011). Cronbach's alpha in the present study was excellent ( $\alpha = .91$ ).

##### ***5.2.3.1.2 Generalised Anxiety Disorder – 7-item scale (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006).***

The GAD-7 is a brief seven-item screening questionnaire that has been found to be sensitive to generalised anxiety disorder, social phobia and panic disorder, with higher scores indicating greater symptom severity (Löwe et al., 2008). Internal consistency of the GAD-7 scale is good ( $\alpha = .79 - .91$ ). GAD-7 has good convergent and divergent validity with other anxiety and disability scales (Dear, Titov, Sunderland, et al., 2011; Kroenke, Spitzer, Williams, & Löwe, 2010). A clinical cut-off score of 8 indicates a likely diagnosis of anxiety disorder (Dear, Titov, Sunderland, et al., 2011;

Lowe et al., 2008; D. A. Richards & Suckling, 2009). In the present study, Cronbach's  $\alpha = .94$ .

### **5.2.3.2 Secondary measures.**

#### **5.2.3.2.1 Kessler 10-item scale (K-10; Kessler et al., 2002).**

The K-10 is a ten-item measure of general psychological distress with total scores  $\geq 22$  associated with a diagnosis of anxiety and depressive disorders (Andrews and Slade, 2001). In the present sample, Cronbach's alpha was high ( $\alpha = .94$ ).

#### **5.2.3.2.2 Sheehan Disability Scales (SDS; D. V. Sheehan, 1983).**

The SDS is a three-item scale measuring functional impairment in the following domains: (1) work and studies, (2) social life, and (3) family life and home responsibilities. The SDS has been found to have high internal consistency of .89 (Leon, Olfson, Portera, Farber, & Sheehan, 1997). In the present study, Cronbach's  $\alpha = .86$ .

#### **5.2.3.2.3 Mini International Neuropsychiatric Interview Version 5.0.0 (MINI; D. V. Sheehan et al., 1998).**

The MINI is a diagnostic interview that assesses the presence of Axis-I disorders using DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; American Psychiatric Association, 2000) diagnostic criteria. The MINI has excellent interrater reliability, ranging from .88 – 1.00 (Lecrubier et al., 1997), and adequate concurrent validity with the Composite International Diagnostic Interview (CIDI; World Health Organization, 1990).

Participants were administered all primary and secondary questionnaires at pretreatment, posttreatment and at three-month follow-up, except for the MINI, which was administered at pretreatment only. The PHQ-9 was also administered weekly to monitor safety and progress of each participant.

### **5.2.3.3 Additional measures.**

At pretreatment participants were also asked why they chose to apply for Internet treatment by selecting from a list of options (e.g., *no need to travel*, *privacy* and *anonymity*) or to provide their own reason.

At posttreatment acceptability of the Course was assessed by asking two questions. Questions required a *Yes* or *No* response. The questions were: (1) “Would you recommend this Course to a friend or family member also experiencing stress or low mood?”; and (2) “Was it worth your time doing this Course?”.

### **5.2.4 Intervention**

In addition to the five lessons, the Wellbeing Course is currently written in English (with future Arabic translation forecasted) and comprises: (a) a summary of each lesson with homework to apply the skills taught in that lesson, (b) automated emails that encourage adherence and reinforce progress, (c) a secure email system for communication between the clinician and participant, (d) additional online resources about skills not described in the lessons, including communication, assertiveness, and sleep hygiene skills, and (e) stories about people who have recovered from anxiety and depression. Table 5.1 shows the structure and content of lessons, the timeline of releasing additional resources and the changes made to the content in the *Arabic Wellbeing Course*.

The Arabic Wellbeing Course retained the core therapeutic components of the Wellbeing Course, maintaining the use of key concepts and descriptions of skills. However, modifications were made to make the Course more culturally appropriate. For example, key words were transliterated into Arabic from English (e.g., not shameful (*la*

*khajela, mukhjl*) and symptoms (*3arada*)). Case examples and educational stories were made more relevant to the target population by changing images, names and demographic characteristics of case examples. The case example and educational stories were also edited to reflect common experiences for Arab Australians, including tensions of bicultural identity for Australian-born Arabs and the difficulties associated with the loss of recognition of skill and identity associated with migration from an Arab-speaking country to Australia (see Table 5.1).

Modification of the content of the Course was based on feedback from members of the Arab community. First, professional translators (EN and LK) aided in the transliteration of the key mental health words. Second, to inform some of key themes depicted in the case examples and educational stories the lead author conducted a literature review on acculturation and Arab people. This review was combined with feedback from members of the Arabic-speaking community through various focus groups, and an online survey (Kayrouz et al., 2014).

Table 5.1

*Structure and Content of Lessons, the Timeline of Releasing Additional Resources, and Content of the Relevant Cultural Modifications Made in the Arabic Wellbeing Course*

| Lesson | Wellbeing Course Content   | Modifications made to content   | Modifications made to images  |
|--------|--|---|---|
| 1      | Education about the prevalence, symptoms and treatment of depression and anxiety, including an explanation about the functional relationship between symptoms. (Additional Resources for Lesson 1: In Case of Emergency, Frequently Asked Questions, Step by Step Guide, Problem Solving and Good Sleep Guide) | <p>1). Key mental health words were transliterated in Arabic (e.g., not shameful (<i>la khajela, mukhjil</i>); symptoms (<i>3arada</i>); normal (<i>tabi3an</i>) and health (<i>sahee</i>).</p> <p>(2). Included monotheistic definition of spiritual health (e.g., a trusting relationship with God)</p> <p>(3). Arab names were used in case examples and educational stories across all lessons.</p> <p>(4). The male case example was of an engineer who sought refuge to Australia due to war in his country and the challenges he faced adjusting to life in Australia working as a cleaner (i.e., loss of recognition of previous expertise and identity).</p> <p>(5). The female case example was of an Australian-born Arab who expressed confusion about ethnic identity, feeling torn between two cultures.</p> <p>(6). Educational stories were similar, however, the context were changed. For example, in the male story he reported grieving the loss of not being able to travel back home, and for the female story, family conflict between mother and aunt was included.</p> | <p>Arab portraits were used in case examples and educational stories across all lessons.</p> <p>Otherwise, all other images from the original Wellbeing Course were retained.</p> |

|   |   |  |   |
|---|---|--|---|
| 2 | Basic principles of cognitive therapy, including strategies for monitoring and challenging thoughts. (Additional Resources for Lesson 2: Managing Beliefs and Mental Skills)                    | <p>(1). Based on the collectivistic nature of Arab cultures, the male case example included the thought that ‘I was respected in the community’ in the step of examining thoughts.</p> <p>(2). In the male educational stories, seeking advice from an elder brother rather than friend was included.</p>  | One image was changed that depicted two male and two female Arab individuals in discussion. |
| 3 | Instructions about skills for helping manage physical symptoms including de-arousal strategies and scheduling activities. (Additional Resources for Lesson 3: Worry Time, Communication Skills) | <p>(1). In becoming active, visiting family rather than friends was included for the male case example.</p> <p>(2). In the male educational story, a common greeting <i>Salam Al laykum</i> used amongst Muslims and the calling of cousins to go fishing as an example of being active were included.</p>   |   |
| 4 | Education and guidelines about behavioural activation. Education about guidelines about practising graded exposure. (Additional Resources for Lesson 4: Assertiveness Communication)            | <p>(1). Male case example challenged his unrealistic expectations that he had failed in Australia working as a cleaner.</p> <p>(2). In his graded exposure tasks, meeting at his local Arab community was included as a task and ranked as ‘very hard’, to indicate the perceived loss of face that he feels working as a cleaner and not an engineer, so he avoids the community.</p> |   |
| 5 | Information about relapse prevention and constructing relapse prevention plans.   | <p>(1). Case examples for both males and females regarding relapse were the same, except for the male where family functions was included as risk for relapse.</p> <p>(2). Educational story for the male remained the same as the standard. For the female, resolution of being torn between aunt and mother because of family conflict was resolved.</p>                             |   |

### **5.2.5 Clinician**

The lead author provided clinical support via telephone and email to all participants across the two phases and is an experienced bilingual counsellor who has worked with the Arabic-speaking community for over 15 years. Consistent with other iCBT studies, the clinician aimed to keep clinical contact to approximately 10 minutes per participant unless their clinical presentation indicated more time was required. During each contact the clinician aimed to reinforce progress, summarise key skills of the Course, normalise commonly experienced difficulties during treatment and encourage continued engagement. The clinician was supervised by BFD during scheduled weekly meetings and as required. A secure log of contact was kept that included progress notes and contact time.

### **5.2.6 Statistical Methods**

All analyses were conducted with SPSS version 22 (SPSS, Inc., Chicago, IL) and the statistical assumptions were first confirmed before analysis. A mixed linear models approach with an unstructured covariance structure and using maximum likelihood estimation was identified as the best way to analyse the clinical outcomes at posttreatment and three-month follow-up. Mixed linear models have the significant advantage of allowing for variation between participants and non-independence among observations while also providing unbiased estimates in the case of missing data; under the assumption that data is missing at random. Effect sizes (Cohen's *d*) were calculated based on the pooled standard deviation for both those that provided data (i.e., completers) and using the estimated marginal means derived from the mixed linear models analyses.

Based on dissemination studies (D. A. Richards & Suckling, 2009), an index of clinical significant remission and deterioration was calculated. The remission index was defined as the proportion of participants who at pretreatment scored at or above the clinical cut-offs on the PHQ-9 ( $\geq 10$ ) and GAD-7 ( $\geq 8$ ), and then subsequently below these clinical cut-offs at posttreatment and three-month follow-up (D. A. Richards & Suckling, 2009). Deterioration was defined as an increase by five or more points on the PHQ-9 or GAD-7 at posttreatment or follow-up, compared to pretreatment (D. A. Richards & Suckling, 2009). The last available data (i.e., last-observation-carried-forward; LOCF) was carried forward for participants who did not complete posttreatment or follow-up questionnaires to provide a conservative estimate of remission.

### **5.3. Results**

#### **5.3.1 Adherence and Attrition**

Ten of eleven (91%) participants completed the Course, which was defined as reading all five lessons within the eight-week period. Ten of eleven (91%) participants provided posttreatment and three-month follow-up data on primary and secondary measures. Nine of eleven (82%) participants provided treatment satisfaction data collected at posttreatment and three-month follow-up. Figure 5.1 shows participant flow including adherence and attrition rates.



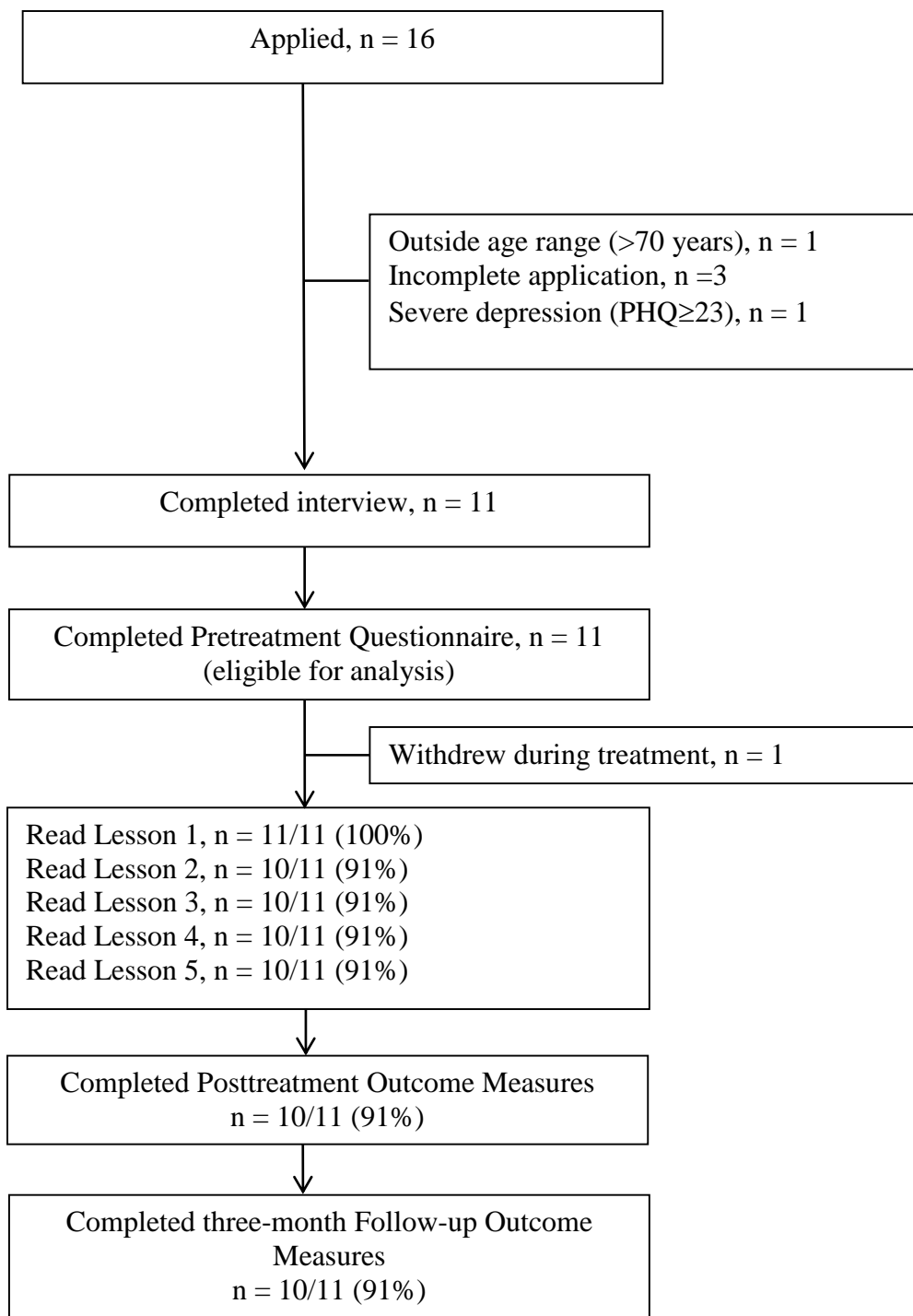


Figure 5.1 Participant flow.

### 5.3.2 Outcomes and Effect Sizes

The outcomes and effect sizes of the trial are displayed in Table 5.2. The mixed linear models analyses revealed significant main effects for Time on all measures: PHQ-9 ( $F_{9, 10.48} = 8.063, p = .008$ ), GAD-7 ( $F_{2, 10.54} = 12.46, p = .002$ ); SDS ( $F_{2, 10.43} = 11.93, p = .002$ ); and K-10 ( $F_{2, 10.58} = 10.96, p = .003$ ). Pairwise comparisons revealed that PHQ-9, GAD-7, SDS and K-10 scores were significantly lower at posttreatment and three-month follow-up than at pretreatment (all  $p < .024$ ) indicating improvements were sustained. There were no significant differences, however, on any measures between posttreatment and three-month follow-up ( $p > .05$ ).

Large pretreatment to posttreatment and pretreatment to three-month follow-up effect sizes were found on all measures, using both completer and estimated-marginal means (Completers: Cohen's  $d = .94$  to  $1.86$ ; Estimated Marginal Means;  $d = 1.08$  to  $2.00$ ).

Table 5.2

*Observed and Estimated Means, Standard Deviations, Confidence Intervals and Effect Sizes (Cohen's d) for the Overall Sample*

|              | Observed Means |              |              | Estimated Means |              |              | Within Group Effect Sizes (based on estimated means) |                   |                   |
|--------------|----------------|--------------|--------------|-----------------|--------------|--------------|--|-------------------|-------------------|
|              | Pre            | Post         | Follow-up    | Pre             | Post         | Follow-up    | Pre to Post  | Pre to Follow-up  | Post to Follow-up |
| <b>PHQ-9</b> | 11.71 (6.35)   | 3.80 (2.49)  | 3.00 (2.24)  | 11.73 (6.06)    | 3.69 (2.43)  | 3.36 (2.44)  | 1.74 (.70 – 2.65)                                    | 1.81 (.76 – 2.72) | .14 (-.71 - .97)  |
| <b>GAD-7</b> | 9.91 (5.59)    | 5.11 (3.38)  | 3.11 (2.32)  | 9.91 (5.33)     | 5.12 (3.36)  | 3.57 (2.47)  | 1.08 (.14 – 1.92)                                    | 1.53 (.53 – 2.41) | .53 (-.34 - 1.35) |
| <b>SDS</b>   | 24.45 (12.46)  | 8.70 (5.91)  | 6.44 (6.75)  | 24.46 (11.88)   | 8.73 (5.88)  | 6.97 (6.65)  | 1.68 (.65 – 2.58)                                    | 1.82 (.77 – 2.73) | .28 (-.57 - 1.11) |
| <b>K10</b>   | 29.18 (9.08)   | 18.40 (4.99) | 14.89 (3.76) | 29.18 (8.65)    | 18.40 (4.97) | 15.59 (4.17) | 1.53 (.53 – 2.41)                                    | 2.00 (.91 – 2.94) | .61 (-.26 - 1.44) |

*Note.* Standard deviations and 95% confidence intervals are shown in parentheses. Pre: Pretreatment, Post: Posttreatment; Follow-up: three-month follow-up; PHQ-9: Patient Health Questionnaire 9-Item; GAD-7: Generalised Anxiety Disorder 7-Item.; SDS: Sheehan Disability Scale; K10: Kessler 10-item

### **5.3.3 Clinical Significance**

Table 5.3 displays the clinically significant remission and recovery rates on the PHQ-9 and GAD-7. For the PHQ-9, of the 6/11 (54%) participants who scored above the cut-off at pretreatment, 0% (0/11) and 21% (2/11) remained above this cut-off at posttreatment and three-month follow-up, respectively. Forty-five percent (5/11) and 64% (7/11) of the participants made a 50% or greater improvement on the PHQ-9 at posttreatment and three-month follow-up, respectively. For the GAD-7, of the 6/11 (55%) participants who scored above the cut-off at pretreatment, 3/11 (27%) and 1/11 (9%) remained above this cut-off at posttreatment and three-month follow-up respectively. Forty-five percent (5/11) and 64% (7/11) of the participants made a 50% or greater improvement on the GAD-7 at posttreatment and three-month follow-up, respectively.

Table 5.3

*Proportion of Participants Above Cut-Off Scores of Clinical Significance (Remission) and Proportion Demonstrating at Least 50% Reduction in Pretreatment Scores (Recovery)*

|              | Pretreatment       | Posttreatment      |                  | Three-Month Follow-Up |                  |
|--------------|--------------------|--------------------|------------------|-----------------------|------------------|
|              | ≥ Clinical Cut-Off | ≥ Clinical Cut-Off | ≥50% Improvement | ≥ Clinical Cut-Off    | ≥50% Improvement |
| <b>PHQ-9</b> | 6/11 (54.55%)      | 0/11 (0.00%)       | 5/11 (45.45%)    | 2/11 (21.43%)         | 7/11 (63.63%)    |
| <b>GAD-7</b> | 6/11 (54.55%)      | 3/11 (27.27%)      | 5/11 (45.45%)    | 1/11 (9.09%)          | 7/11 (63.63%)    |

*Note.* Intention-to-treat model was employed with last-observation being carried forward if follow-up data was not available. The clinical cut-off utilised for the PHQ-9 and GAD-7 was 10 and 8 respectively.

#### **5.3.4 Deterioration**

At posttreatment and three-month follow-up, none of the 11 participants obtained PHQ-9 or GAD-7 scores five or more points higher compared to pretreatment.

#### **5.3.5 Acceptability**

Nine of 11 respondents provided data to assess the acceptability of the Course. All responding participants (100%) reported it was “Worth their time doing the Course”, and 8/9 (89%) participants reported they would “Recommend this Course to a friend or family member with anxiety or depression”.

#### **5.3.6 Contact**

The mean total clinician time per participant over the eight-week course was 90.72 mins ( $SD = 28.98$ ), which comprised an average of 58.2 mins ( $SD = 32.93$ ) and 32.5 mins ( $SD = 30.80$ ) per participant for telephone calls and secure private emails, respectively. An additional average of 24.91 mins ( $SD = 10.71$ ) per participant was required for administrative purposes including the screening telephone call at recruitment. The clinician made an average of 8.5 telephone calls ( $SD = 2.25$ ; range = 4 to 11) and an average of 4.5 emails to participants ( $SD = 1.63$ ; range = 2 to 8) during the Course.

#### **5.3.7 Treatment Seeking**

Participants reported that they chose Internet-delivered treatment, because there is no need to travel (8/11; 73%), privacy and anonymity (5/11; 45%), they did not believe

their symptoms were severe enough to warrant face-to-face treatment (5/11; 45%), time constraints to attend face-to-face services (3/11; 27%), costs of face-to-face treatment (3/11; 27%), and stigma (1/11; 9%).

## 5.4 Discussion

Large numbers of Arab people have immigrated to Western countries, but little is known about whether Arab people respond to psychological treatments developed in the Western world. The primary aims of the present study were to examine the preliminary efficacy and acceptability of the Arabic Wellbeing Course, a culturally modified transdiagnostic iCBT program, for symptoms of anxiety and depression in Arab Australians. It was hypothesised that participants would show statistically and clinically significant reduction in symptoms of depression, anxiety, distress and disability and that they would rate the Course as worthwhile and recommend the program to a friend or family member. These hypotheses were supported.

Overall, the results from this preliminary trial are encouraging. Large within-group effect sizes were found on the primary and secondary outcome measures including a measure of disability, indicating that improvements generalised to other domains. These large effects were maintained and were reflected in high levels of remission and recovery. Treatment adherence and participant satisfaction were high. These high rates were achieved with minimal clinician input ( $M = 90.72$  mins;  $SD = 28.98$ ), highlighting the potential cost-effectiveness of this approach.

These results are consistent with those observed in evaluations of the Wellbeing Course amongst the general Australian population (Titov et al., 2013; Titov et al., 2012). The outcome of the present study suggests that interventions, such as the Wellbeing

Course, which was developed for a general population, could potentially undergo relatively minor modifications for use with other culturally and linguistically diverse CALD groups and produce comparable results in that target population. The limits of generalisability are likely to be defined by acculturation variables such as an immigrant's familiarity with the English language and culture, their ethnic identity, and their level of biculturalism, that is, their ability to integrate into host culture and retain the values of their culture (Yoon et al., 2013). As suggested by the selective and directed treatment adaptation framework (SDTAF) approach (Lau, 2006), careful and systematic research is required to determine the extent to which materials will need to be modified, and in what way, to make them suitable for different CALD groups. However, these results are also consistent with an emerging body of work that has evaluated modified versions of CBT interventions developed for Western populations with other CALD groups (Choi et al., 2012; B. Wagner, Schulz, et al., 2012). This literature provides preliminary support for the position that, with respect to principles of psychological treatment, people of different cultures are more similar than different and may, therefore, benefit from similar treatment strategies. Notwithstanding the limitations of an open trial design, the present study extends these results by demonstrating that relatively minor modifications can be sufficient to make interventions acceptable to a targeted CALD group. Importantly, should such modified interventions be effective in self-guided formats (e.g., (Titov et al., 2013; Titov et al., 2012), the potential for improving access to psychological treatments for CALD communities is considerable.

The present study was not designed to explore whether the cultural modifications made to the Wellbeing Course were actually required and whether similar results would be obtained with the target population using the non-adapted version of the Wellbeing Course. This is an important question that has considerable implications for the



dissemination of psychological treatment materials into routine care. Unfortunately, to date, there are no reported studies in the iCBT literature comparing culturally adapted with non-adapted Internet-delivered interventions or examining the issue of when cultural adaptation may be or may not be important. This is an important issue for future research.

In addition to reporting the intervention to be acceptable, participants also reported several advantages of Internet-delivered treatments. These included convenience, privacy and anonymity, and perceived suitability for treating a relatively mild level of symptoms. These findings are encouraging and highlight the potential of Internet-delivered treatment in offering anonymity and flexibility and addressing some of the common barriers (i.e. mental health literacy, lack of time and shame) reported amongst some Arab Australians (Kayrouz et al., 2014).

Limitations of this present study include the following; first, the absence of a control group means it is not possible to determine the effect of the treatment beyond that of spontaneous remission. Second, the small sample size limits the extent to which the results can be generalised and means that significant caution is needed in interpreting the results of the trial beyond conclusions about the general feasibility of iCBT for Arab Australians. Third, the relatively high educational level of the sample limits the extent to which the results can be generalised to those with lower levels of educational attainment. Fourth, due to the moderate level of symptom severity of the sample, it is unclear how effective the Course would be for those with more severe symptoms of anxiety or depression. Fifth, the level of acculturation was not measured raising questions about the extent to which acculturation may moderate treatment outcomes. However, a large randomised controlled trial is planned, which will address several of these issues. Finally, the Wellbeing Course was not provided in Arabic. Although we do

not envisage that the language of presentation would have a significant effect on clinical outcomes, providing the material was appropriately translated; this can only be established via a dedicated clinical trial of the Arabic Wellbeing Course provided in Arabic and some caution is needed until such a trial is completed.

The Arabic Wellbeing Course resulted in large improvements on measures of anxiety, depression, stress and disability at posttreatment, which were sustained at three-month follow-up. Moreover, the treatment was rated as acceptable to participants. These results were similar to previous findings of iCBT obtained with the general Australian population. These preliminary results indicate that this intervention has potential as a treatment tool for Arab Australians with symptoms of anxiety and depression.

## **6.0 - Study 5: A Pilot Study of Self-Guided Internet-Delivered Cognitive Behavioural Therapy for Anxiety and Depression Among Arabs.**

A version of the following chapter was published. The candidate (i.e., lead author) designed and promoted the study, conducted the analyses and drafted the manuscript:

Kayrouz, R., Dear, B. F., Karin, E., Gandy, M., Fogliati, V. J., Terides, M. D., &

Titov, N. (2016). A pilot study of self-guided Internet-delivered cognitive behavioural therapy for anxiety and depression among Arabs. *Internet Interventions*, 3, 18-24. doi: 10.1016/j.invent.2015.10.005

### **6.1 Introduction**

Anxiety and major depressive disorders are among the most common mental conditions in the Western (Kessler et al., 2009; Slade et al., 2009) and Arab worlds, as reflected in epidemiological surveys conducted in Lebanon (Karam et al., 2006), Iraq (Alhasnawi et al., 2009), Morocco (Kadri et al., 2010) and Egypt (Ghanem et al., 2009). The Arab world has a current population of 377 million (The World Bank, 2014), and represents 5.4% of the world's population.

Unfortunately, recent studies indicate that only a small minority of Arab people with mental health problems seek treatment. For example, a recent survey (i.e., Study 2 of this thesis) of Arab people across several countries ( $N = 503$ ) found that 49% of the sample had elevated levels of psychological distress, but only 3% of these people reported seeking treatment from a mental health professional (Kayrouz et al., unpublished). Barriers to treatment for Arab people appear to be similar to those

experienced by people living in Western countries, and include low mental health literacy, lack of time and the shame associated with seeking mental health treatment (Gearing et al., 2012; Kayrouz et al., 2014; Kayrouz et al., unpublished).

One strategy that may improve access to mental health services for Arab people is to deliver psychological treatments, such as cognitive behavioural therapy (CBT), via the Internet. Internet-delivered Cognitive Behavioural Therapy (iCBT) interventions typically provide the same therapeutic content as provided in conventional face-to-face psychotherapy but are modified for online delivery (Andersson & Titov, 2014). Such treatments are typically highly structured, aim to impart practical skills, and can be delivered with or without clinician-guidance. With some exceptions (Berger, Caspar, et al., 2011; Berger, Hämmerli, Gubser, Andersson, & Caspar, 2011; Dear, Gandy, et al., 2015; Dear, Staples, et al., 2015; Dear, Zou, Ali, Lorian, Johnston, Terides, et al., 2015; Titov et al., 2013; Titov, Dear, Staples, Bennett-Levy, et al., 2015), results are typically stronger with clinician support (Titov, Dear, & Andersson, 2014).

Although the use of such interventions has considerable meta-analytic support in predominantly Western samples (e.g., Andersson et al., 2014; Andrews et al., 2010; van Ballegooijen et al., 2014), there is emerging evidence to indicate their potential in Arab populations. Several small but promising trials have recently demonstrated that Arab people can benefit from iCBT interventions (Kayrouz et al., 2015; Knaevelsrud et al., 2015; B. Wagner, Schulz, et al., 2012). Among these, Knaevelsrud et al., (2015) provided clinician-guided online treatment for Iraqis ( $N = 47$ ) with posttraumatic stress disorder (PTSD) and reported that 62% of those in a treatment group had recovered from posttraumatic stress symptoms at posttreatment, and that gains were maintained at three-month follow-up. In addition, Kayrouz and colleagues (2015) examined the feasibility of clinician-guided iCBT for Australian Arabs ( $N = 11$ ) with anxiety and depression

using a treatment course called the *Arabic Wellbeing Course*, which was presented in the English language (i.e., Study 4 of the present thesis). Significant reductions in symptoms of anxiety, depression, and disability at posttreatment and three-month follow-up, with more than 90% reporting they would recommend the course to a family member or friend.

The potential utility of iCBT for Arab populations is also consistent with clinical observations of clinicians who have reported that Arab people prefer short-term and directive psychological treatments that have a focus on practical skills and the “here-and-now”, and that do not require them to divulge their story (Abudabbeh & Hays, 2006; Al-Krenawi & Graham, 2000; Chaleby, 1992). Consistent with this, the aforementioned international survey ( $N = 503$ ) of Arab people (Kayrouz et al., unpublished) found that 73% of respondents reported they would be willing to try Internet-delivered treatment if they experienced symptoms of anxiety and depression. Thus, Internet-delivered treatment may be an acceptable option to address barriers and reduce psychological distress for Arab people worldwide.

The present study aims to extend this small but promising literature by exploring the feasibility and efficacy of a self-guided version of the Arabic Wellbeing Course, to treat symptoms of anxiety and depression amongst Arab people worldwide, presented in the English language. To date, the published trials of Internet-delivered treatments with Arab people have reported results of clinician-guided treatments. Self-guided treatments, if effective, have considerably more potential as a public health intervention, by virtue of lower delivery cost and increased anonymity. Because of the absence of previous studies of self-guided treatments for Arab people, a single group design was used in order to examine the acceptability of the self-guided Internet-delivered treatment and inform the power requirements of a large randomised controlled trial.

## **6.2 Method**

### **6.2.1 Design and Hypotheses**

A single-group open trial design was utilised to examine the feasibility, acceptability and preliminary efficacy of the self-guided and culturally modified iCBT Arabic Wellbeing Course for Arab patients worldwide. A target sample of 150 was set. However, based on the difficulties in recruitment (see Study 3), a minimal sample size of 15 was estimated as sufficient (one-tailed test, power at 80%, and alpha at .05) to detect within-group Cohen's  $d$  effect size of .70; the minimum likely effect based on previous studies employing the *Wellbeing Course* (Kayrouz et al., 2015; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014). This study was approved by the Human Research Ethics Committee of Macquarie University, Sydney, Australia, and registered as a clinical trial with the Australian New Zealand Clinical Trials Registry, ACTRN12614000124639.

Based on the results of the previous clinician-guided trial of the Arabic Wellbeing Course (Kayrouz et al., 2015) it was hypothesised that: (1) Arab people would show a statistically and clinically significant reduction in the symptoms of depression, anxiety, distress and disability; and (2) Arab people would rate the course as worthwhile and would recommend the course to a friend or family member.

### **6.2.2 Participants**

Details about the study were promoted using a variety of recruitment strategies. These included the following: (1) media release by the university media and communications department; (2) emails to relevant Arab organisations (medical, secular and religious), health professionals and interested individuals; (3) newspaper

advertisements in English and in a Lebanese and Australian Arabic newspaper; and (4) advertisements in English in religious organisations' newsletters. As traditional strategies yielded very few participants, FB promotion strategies were used. These included (1) promoting posts; (2) promoting FB public page (i.e., ECC Arabic Wellbeing); (3) promoting website ([www.ecentreclinic.org](http://www.ecentreclinic.org)) and (4) promoting events (for more details see Kayrouz, Dear, Karin, & Titov, 2016). Interested adults applied online through a clinical research website ([www.ecentreclinic.org](http://www.ecentreclinic.org)), which provides information about anxiety and depression, and conducts clinical research concerning Internet-delivered treatment. Because of the slower than expected recruitment, participants were recruited over a 12-month period from 10 February 2014 to 2 March 2015.

Eighty-one people initially provided informed consent and volunteered to participate. Inclusion criteria were: (1) person who self-identified as being of Arabic ancestry; (2) between the ages of 18 and 70; (3) having reliable Internet access; (4) a Patient Health Questionnaire 9-item (PHQ-9) score  $\geq 5$  or a Generalised Anxiety Disorder 7-item (GAD-7) score  $\geq 5$  indicating at least mild depressive or anxiety symptoms, but not currently experiencing very severe depression, which is defined as a total score  $\geq 23$  or a score  $> 2$  on question 9 of the PHQ-9 (Kroenke et al., 2001); and (5) if taking medication for anxiety or depression, having been on a stable dose for at least one month. Exclusion criteria were: (1) currently receiving face-to-face CBT treatment, and (2) not completing pretreatment questionnaires.

Of the 81 applicants, 45 were excluded (see Figure 6.1) for the following reasons: (a) 6 for incomplete applications; (b) 9 for low symptoms of anxiety and depression (i.e., PHQ-9 and GAD-7  $< 5$ ); (c) 4 participants for very severe depression (i.e., defined as a total score  $\geq 23$  on the PHQ-9 or PHQ-9 Q9  $> 2$ ); (d) one for unreliable Internet access;

(e) one for seeing a psychologist face-to-face for CBT treatment; (f) 20 for non-completion of the pretreatment questionnaires; and (g) 4 for not starting the course.

The final sample of 36 participants had a mean age of 36.23 years ( $SD = 12.14$ ; range = 19 – 67) and 58% (21/36) were females. The majority of participants were married (53%,  $n = 19$ ), with the remainder single (31%,  $n = 11$ ) or separated/divorced/other (17%,  $n = 6$ ). Sixty-four percent of the sample ( $n = 23$ ) had attained at least a bachelor's degree, 22% ( $n = 8$ ) attained a trade certificate/apprentice or completed at least up to tenth grade in high school, and 14% ( $n = 5$ ) attained a diploma. Sixty-one percent of the participants (22/36) reported they were in full-time or part-time employment, 17% (6/36) were full-time or part-time students, 17% (6/36) unemployed, 3% (1/36) reported not being able to work because of disability, and 3% (1/36) were retired. Fifty-three percent of participants (19/36) reported residing in Australia, 17% (6/36) residing in Lebanon, 8% (3/36) residing in Egypt, 8% (3/36) residing in Saudi Arabia, 5.5% (2/36) in the U.K., 5.5% (2/36) in the U.S. and 3% (1/36) in Algeria. Forty-four percent of the sample (16/36) reported having had previous mental health treatment, 25% (9/36) reported taking medication related to their symptoms, and participants reported having had mental health difficulties for an average of 19.4 years ( $SD = 9.21$ ).



### **6.2.3 Questionnaire Measures**

#### **6.2.3.1 Primary measures.**

##### ***6.2.3.1.1 Patient Health Questionnaire – 9-Item Scale (PHQ-9; Kroenke et al., 2001).***

The PHQ-9 is a nine-item measure of the symptoms and severity of depression. It has a clinical cut-off score of 10 that is predictive of a DSM-IV diagnosis of depression, with higher PHQ-9 scores indicating greater symptom severity. Internal consistency of the questionnaire is acceptable to high,  $\alpha = .74 - .89$  (Kroenke et al., 2001), and the questionnaire has good clinical sensitivity to change (Titov, Dear, McMillan, et al., 2011). Cronbach's alpha in the present study was acceptable ( $\alpha = .73$ ).

##### ***6.2.3.1.2 Generalised Anxiety Disorder – 7-Item Scale (GAD-7; Spitzer et al., 2006).***

The GAD-7 is a brief seven-item screening questionnaire that has been found to be sensitive to generalised anxiety disorder, social phobia, and panic disorder, with higher scores indicating greater symptom severity (Löwe et al., 2008). The GAD-7 scale has good internal consistency ( $\alpha = .79 - .91$ ) and has good convergent and divergent validity with other anxiety and disability scales (Dear, Titov, Sunderland, et al., 2011; Kroenke et al., 2010). A clinical cut-off score of 8 is indicative of a diagnosis of a DSM-IV anxiety disorder (Dear, Titov, Sunderland, et al., 2011; Lowe et al., 2008; D. A. Richards & Suckling, 2009). In the present study, Cronbach's  $\alpha = .71$ .

### **6.2.3.2 Secondary measures.**

#### ***6.2.3.2.1 Kessler 10-Item Scale (K-10; Kessler et al., 2002).***

The K-10 is a 10-item measure of general psychological distress with total scores  $\geq 22$  associated with a diagnosis of anxiety and depressive disorders (Andrews and Slade, 2001). In the present sample, Cronbach's alpha was high ( $\alpha = .83$ ).

#### ***6.2.3.2.2 Sheehan Disability Scales (SDS; D. V. Sheehan, 1983).***

The SDS is a three-item scale measuring functional impairment in the following domains: (1) work and studies, (2) social life, and (3) family life and home responsibilities. The SDS has been found to have high internal consistency of .89 (Leon et al., 1997). In the present study, Cronbach's  $\alpha = .67$ .

Participants were administered all primary and secondary questionnaires at pretreatment, posttreatment and at three-month follow-up. The PHQ-9 and GAD-7 were also administered weekly to monitor safety and progress of each participant.

### **6.2.3.3 Additional measures.**

At posttreatment acceptability of the course was assessed by asking two questions: (1) "Would you recommend this Course to a friend or family member also experiencing stress or low mood?"; and (2) "Was it worth your time doing this Course?". Questions required a *Yes* or *No* response.

#### **6.2.4 Intervention**

The Wellbeing Course is a five-lesson iCBT intervention targeting symptoms of both anxiety and depression, that is, a transdiagnostic intervention (Titov et al., 2013; Titov, Dear, Johnston, et al., 2014). The Wellbeing Course is based on the Macquarie University model (MUM) of Internet-delivered psychological treatment (Titov, Dear, Staples, Bennett-Levy, et al., 2015). The Wellbeing Course is a structured skills-based course that focuses on teaching practical evidence-based psychological skills (e.g., realistic thinking, assertiveness, behavioural activation and graded exposure) that assist in the management of symptoms of anxiety and depression, consistent with the aforementioned Arab preferences for psychological treatment (Abudabbeh & Hays, 2006; Al-Krenawi & Graham, 2000; Chaleby, 1992). This course has been evaluated in several clinical trials (Kirkpatrick et al., 2013; Titov et al., 2013) with individuals of many different culturally and linguistically diverse (CALD) backgrounds, including Arab Australians, and has been used in a national online public mental health service to treat more than 1,000 Australian adults (Titov, Dear, Staples, Bennett-Levy, et al., 2015).

In addition to the five lessons, the Wellbeing Course comprises: (a) a summary of each lesson with homework to apply the skills taught in that lesson, (b) automated emails that encourage adherence and reinforce progress, (c) additional online resources about skills not described in the lessons, including communication, assertiveness, and sleep-hygiene skills and (d) stories about people who have recovered from anxiety and depression.

The Arabic Wellbeing Course was written in English and retained the core therapeutic components of the Wellbeing Course, maintaining the use of key concepts and descriptions of skills. However, modifications were made to make the course more

culturally appropriate. Some of the key modifications included the following: (a) key words were transliterated into Arabic from English (e.g., not shameful (*la khajela, mukhjil*) and symptoms (*3arada*)); (b) case examples and educational stories were made more relevant to the target population by changing images, names and demographic characteristics of case examples, and edited to reflect common experiences for Arab people; and (c) the development of a religion and wellbeing resource that included information about cognitive restructuring of unhelpful religious thoughts, and religious practices (e.g., prayer, acts of service and charity) to reduce psychological symptoms (for detailed consideration of the structure, content and modifications refer to Kayrouz et al. (2015)).

Participants completed the course without direct contact or clinical support. However, all participants across the seven phases received automated weekly emails. These emails aimed to reinforce progress, summarise key skills of the course, normalise commonly experienced difficulties during treatment and encourage continued engagement.

### **6.2.5 Statistical Methods**

All analyses were performed in SPSS version 22.0 (SPSS, Inc., Chicago, IL). A generalised estimation equation (GEE) modelling technique was employed to examine changes in the symptom measures over time. GEE emphasizes the modelling of change in an average group effect over time while accounting for within-subject variance with the specification of a working correlation structure (Hubbard et al., 2010). An unstructured working correlation structure was selected, coupled with a robust error estimation, for all GEE analyses. GEE analyses, therefore, provide model coefficients

that represent a multiplicative change in the dependent variable and these coefficients form a change factor (i.e.,  $\exp(\beta)$ ), which can be used to calculate the average percentage change from baseline to any time point. All GEE models also specified a gamma distribution with a log link response scale to address positive skewness, identified in each of the dependent variable distributions. Separate GEE models, utilising time effects and pretreatment severity, were employed to impute missing data in the dependent variables consistent with intention-to-treat principles. In order to present the results transparently, these means from these GEE analyses (i.e., Estimated Marginal Means) are presented alongside data based on completers-only (i.e., Observed Means) and last-observation-carried-forward (i.e., LOCF Means) approaches to missing data.

The preliminary efficacy of the intervention was analysed for each dependent variable, one at a time. In each GEE analysis, change was calculated from pretreatment to posttreatment and three-month follow-up. SPSS pairwise comparisons were used to contrast the marginal means for the different time points (e.g. post to three-month follow-up).

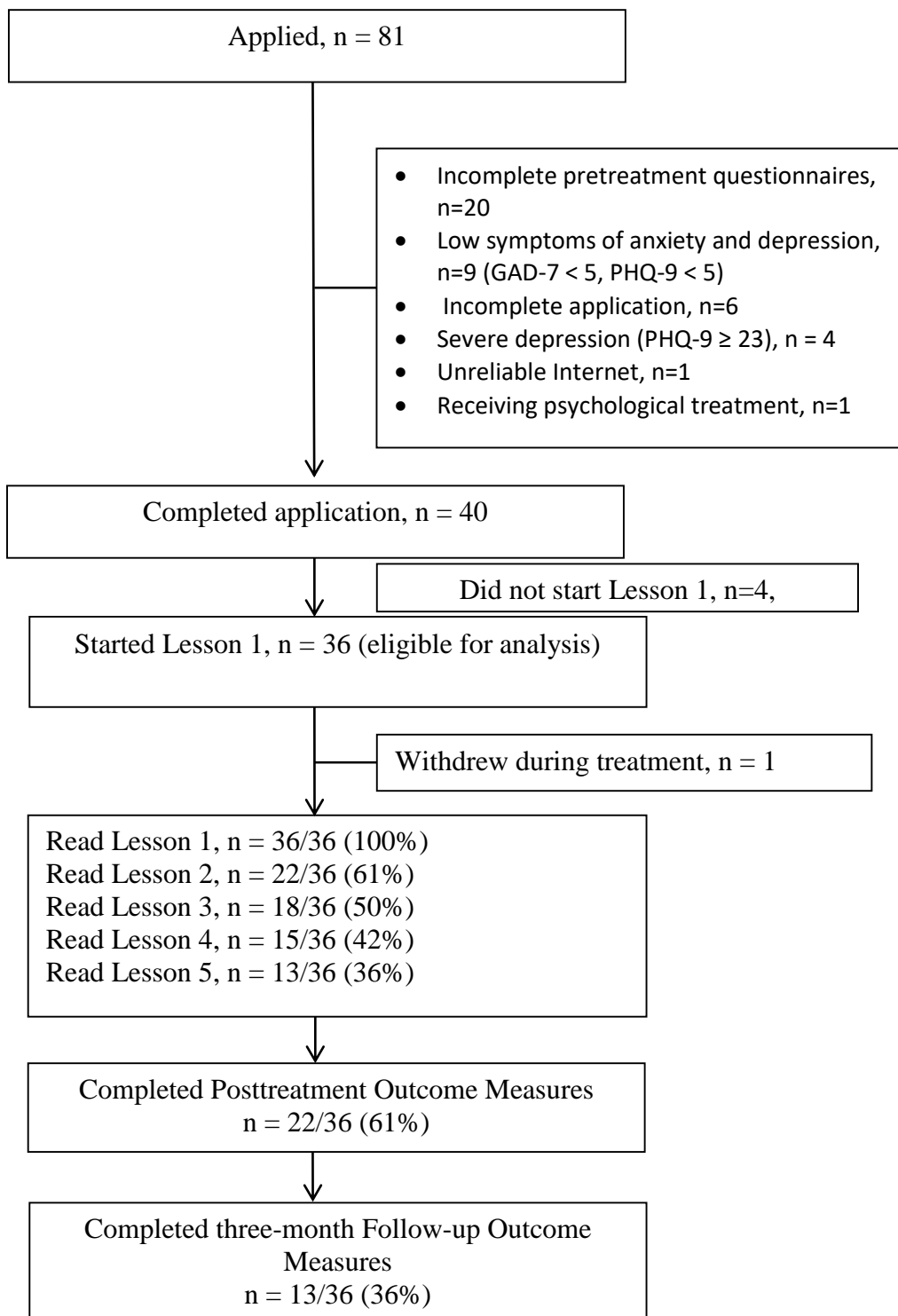
Several different statistics were calculated for comparison and benchmarking purposes. First, the average percentage change across time was calculated from the GEE analyses for each of the outcome variables with 95% confidence intervals. Second, Cohen's *d* effect sizes and 95% confidence intervals were also calculated for the within-groups effects based on the estimated marginal means derived from the GEE models. Third, based on dissemination studies (D. A. Richards & Suckling, 2009), indexes of clinically significant remission and deterioration were calculated. The remission index was defined as the proportion of participants who at pretreatment scored at or above the clinical cut-offs on the PHQ-9 ( $\geq 10$ ) and GAD-7 ( $\geq 8$ ), and subsequently decreased to a score that was below these clinical cut-offs at posttreatment and/or three-month follow-

up (D. A. Richards & Suckling, 2009). Deterioration was defined as an increase by five or more points on the PHQ-9 or GAD-7 at posttreatment or follow-up, compared to pretreatment (D. A. Richards & Suckling, 2009). Importantly, in these analyses, LOCF was used for participants who did not complete posttreatment or three-month follow-up questionnaires to provide a conservative estimate of effect sizes and remission.

## **6.3. Results**

### **6.3.1 Adherence and Attrition**

Thirty-six percent (13/36) of the participants completed the course, which was defined as reading all five lessons within the eight-week period, however, 42% (15/36) read the first four lessons, which provides a proxy of minimum therapeutic dose. Sixty-one percent (22/36) and 36% (13/36) of the participants provided posttreatment and three-month follow-up data, respectively. Figure 6.1 shows participant flow including adherence and attrition rates.



*Figure 6.1.* Participant flow.

### 6.3.2 Outcomes and Effect Sizes

The outcomes and effect sizes of the trial are displayed in Table 6.1. The GEE analyses revealed significant main effects for time on all measures: PHQ-9 (*Wald's*  $\chi^2 (2, N = 36) = 82.71, p < .001$ ), GAD-7 (*Wald's*  $\chi^2 (2, N = 36) = 58.46, p < .001$ ); SDS (*Wald's*  $\chi^2 (2, N = 36) = 53.77, p < .001$ ); and K-10 (*Wald's*  $\chi^2 (2, N = 36) = 55.11, p < .001$ ). Pairwise comparisons revealed that PHQ-9, GAD-7, SDS and K-10 scores were significantly lower at posttreatment and three-month follow-up than at pretreatment (all  $p < .001$ ). There were significant differences on PHQ-9 ( $p = .004$ ), SDS ( $p < .001$ ), and K10 ( $p = .006$ ) between posttreatment and three-month follow-up.

Moderate-to-large pretreatment to posttreatment effect size improvements were observed on the primary outcomes of anxiety and depression (Cohen's *ds*: Observed means  $\geq 0.96$ ; LOCF means  $\geq 0.59$ ; Estimated marginal means  $\geq 1.15$ ), which were maintained at three-month follow-up. The effect sizes based on the estimated marginal means corresponded to average reductions in symptoms  $\geq 45.3\%$  at posttreatment and three-month follow-up. Moderate-to-large pretreatment to posttreatment effect size improvements were observed on the secondary outcomes of disability and general psychological distress (Cohen's *ds*: Observed means  $\geq .53$ ; Estimated marginal means  $\geq 0.81$ ). LOCF means were not available for secondary outcomes as no midtreatment data were collected. The effect sizes based on the estimated marginal means corresponded to reductions  $\geq 24.8\%$  at posttreatment and three-month follow-up.



Table 6.1

*Observed and Estimated Means, Standard Deviations, Confidence Intervals, Effect Sizes (Cohen's d) and Percentage Change for the Overall Sample*

|                           | Observed Means  |                  |                 | Estimated Marginal Means |                  |                 | LOCF Means      |                |                | Cohen's d Effect sizes <sup>a</sup> |                    | Percentage Change from Pre <sup>b</sup> |                    |
|---------------------------|-----------------|------------------|-----------------|--------------------------|------------------|-----------------|-----------------|----------------|----------------|-------------------------------------|--------------------|---|--------------------|
|                           | Pre             | Post             | Follow-up       | Pre                      | Post             | Follow-up       | Pre             | Post           | Follow-up      | Pre to Post                         | Pre to Follow-up   | Pre to Post                             | Pre to Follow-up   |
| <b>Primary Measures</b>   |                 |                  |                 |                          |                  |                 |                 |                |                |                                     |                    |   |                    |
| <b>Depression (PHQ-9)</b> | 12.08<br>(4.87) | 6.54<br>(5.91)   | 4.08<br>(4.54)  | 12.08<br>(4.80)          | 6.49<br>(4.51)   | 4.37<br>(2.62)  | 12.08<br>(4.87) | 8.39<br>(5.91) | 7.72<br>(5.90) | 1.20 (.69 – 1.69)                   | 1.99 (1.41 – 2.54) | 46.3 (32.6 – 57.2)                      | 63.8 (56.0 – 70.3) |
| <b>Anxiety (GAD-7)</b>    | 10.44<br>(4.01) | 5.77<br>(5.59)   | 3.77<br>(5.02)  | 10.44<br>(3.96)          | 5.72<br>(4.27)   | 4.58<br>(2.96)  | 10.44<br>(4.01) | 7.61<br>(5.54) | 7.31<br>(5.54) | 1.15 (.64 – 1.63)                   | 1.68 (1.12 – 2.19) | 45.3 (30.2 – 57.1)                      | 56.2 (45.9 – 64.5) |
| <b>Secondary Measures</b> |                 |                  |                 |                          |                  |                 |                 |                |                |                                     |                    |   |                    |
| <b>Disability (SDS)</b>   | 22.50<br>(9.89) | 14.77<br>(13.10) | 9.08<br>(13.51) | 22.50<br>(9.75)          | 14.54<br>(10.01) | 8.99<br>(7.80)  | 22.50<br>(9.89) | -              | -              | 0.81 (.32 – 1.28)                   | 1.53 (.99 – 2.04)  | 35.4 (19.1 – 48.4)                      | 60.0 (46.9 – 69.9) |
| <b>Distress (K10)</b>     | 28.06<br>(6.96) | 21.13<br>(10.85) | 17.23<br>(9.09) | 28.06<br>(6.86)          | 21.11<br>(8.29)  | 17.88<br>(5.27) | 28.06<br>(6.96) | -              | -              | 0.91 (.42 – 1.39)                   | 1.66 (1.11 – 2.18) | 24.8 (14.5 – 33.8)                      | 36.3 (29.8 – 42.1) |

*Note.* Standard deviations and 95% confidence intervals are shown in parentheses. Pre: Pretreatment, Post: Posttreatment; Follow-up: three-month follow-up; PHQ-9: Patient Health Questionnaire 9-Item; GAD-7: Generalised Anxiety Disorder 7-Item.; SDS: Sheehan Disability Scale; K10: Kessler 10-item; LOCF: Last Observation Carried Forward. No LOCF for secondary measures as no mid-treatment data was collected.

<sup>a</sup> The effect sizes from baseline statistics are based on estimated marginal means derived from the GEE models.

<sup>b</sup> The percentage change from baseline statistics are estimates of relative change derived from the GEE models conducted separately for each outcome.

### **6.3.3 Clinical Significance**

Table 6.2 displays the clinically significant remission and recovery rates on the PHQ-9 and GAD-7. For the PHQ-9, of the 24/36 (67%) participants who scored above the cut-off at pretreatment, eleven (11/24; 46%) were below this cut-off at posttreatment and three-month follow-up. Eleven of 36 (31%) and 15/36 (42%) participants made a 50% or greater improvement on the PHQ-9 at posttreatment and three-month follow-up respectively. For the GAD-7, of the 23/36 (64%) participants who scored above the cut-off at pretreatment, 10/23 (43%) were below this cut-off at posttreatment and three-month follow-up. Thirty-six percent of participants (13/36) made a 50% or greater improvement on the GAD-7 at posttreatment and three-month follow-up.

### **6.3.4 Deterioration**

At posttreatment and three-month follow-up, one (2.8%) and two (5.6%) of the 36 participants obtained PHQ-9 and GAD-7 scores five or more points higher compared to pretreatment, respectively, indicating deterioration.

### **6.3.5 Acceptability**

Twenty-one of 36 respondents (58.33%) provided data to assess the acceptability of the course. Ninety-one percent (19/21) of the responding participants reported it was “Worth their time doing the Course”, and 91% (19/21) reported that they would “Recommend this course to a friend or family member with anxiety or depression”.

Table 6.2

*Proportion of Participants Below Cut-Off Scores of Clinical Significance (Remission) and Proportion Demonstrating at Least 50% Reduction in Pretreatment Scores (Recovery) and the Average Improvement of the Group*

|              | Pretreatment       | Posttreatment      |                  |                     | 3- Month Follow-Up |                  |                     |
|--------------|--------------------|--------------------|------------------|---------------------|--------------------|------------------|---------------------|
|              | ≥ Clinical Cut-Off | ≤ Clinical Cut-Off | ≥50% Improvement | Average Improvement | ≤ Clinical Cut-Off | ≥50% Improvement | Average Improvement |
| <b>PHQ-9</b> | 24/36 (66.67%)     | 11/24 (45.83%)     | 11/36 (30.55%)   | 27.05%              | 11/24 (45.83%)     | 15/36 (41.67%)   | 39.96%              |
| <b>GAD-7</b> | 23/36 (63.90%)     | 10/23 (43.48%)     | 13/36 (36.11%)   | 27.24%              | 10/23 (43.48%)     | 13/36 (36.11%)   | 31.42%              |

*Note.* Intention-to-treat model was employed with last-observation being carried forward if follow-up data was not available. The clinical cut-off utilised for the PHQ-9 and GAD-7 was 10 and 8 respectively.

### **6.3.6 Contact**

During treatment email contact was provided to six participants to assist with technical difficulties during the course. Additional email contact was provided to six participants to assess and manage mental health crises.

## **6.4 Discussion**

The primary aims of the present study were to examine the preliminary efficacy and acceptability of the self-guided format of the Arabic Wellbeing Course, a culturally modified transdiagnostic iCBT program, for symptoms of anxiety and depression in Arab people worldwide. It was hypothesised that participants would show statistically and clinically significant reduction in symptoms of depression, anxiety, distress and disability, and that they would rate the course as worthwhile and recommend the program to a friend or family member. These hypotheses were supported.

Overall, the results from this small, preliminary trial are encouraging. Large within-group effect sizes were found on the primary and secondary outcome measures including a measure of disability, indicating that improvements generalised to other domains. The available data indicated that these improvements were maintained at follow-up and were reflected in moderate levels of remission and recovery. These results are consistent with the results of a previous small open trial of the Arabic Wellbeing Course with Arab Australians (Study 4; Kayrouz et al., 2015), and with results observed in an evaluation of the Wellbeing Course used in a self-guided format with a general Australian population (Titov et al., 2013; Titov, Dear, Johnston, et al., 2014). In addition, high rates of participant satisfaction were observed in the present trial, highlighting the potential time and cost-effectiveness of self-guided iCBT to Arab

people.

These results are also consistent with the positive results from a small but encouraging body of work that has evaluated modified versions of iCBT interventions developed for Western populations with other CALD groups (Choi et al., 2012; Kayrouz et al., 2015; Knaevelsrud et al., 2015; B. Wagner, Schulz, et al., 2012). This literature provides further support for the position that people of different cultures share similar experiences of anxiety and depression, and may, therefore, benefit from similar treatment strategies. Notwithstanding the limitations of an open trial design, the present study extends these results by demonstrating that relatively minor modifications can be sufficient to make interventions acceptable to a targeted CALD group. Importantly, because modified interventions have shown preliminary effectiveness in self-guided formats (Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov et al., 2012), the potential for improving access to psychological treatments for CALD communities is considerable.

Notwithstanding this potential, the language barrier of the Arabic Wellbeing course being available in English only, may explain the low level of interest and difficulties in recruiting Arab people to the current study. Language has been found to be a barrier to accessing Western psychological treatments amongst Arab populations (Gearing et al., 2012). Thus, providing an intervention in a language that is congruent and sensitive to the values and meanings of the participant culture (Bernal et al., 1995; Bernal et al., 2009) is critical in reducing barriers and possibly increasing interest in and recruitment for future trials. Recently, the research team has completed a rigorous Arabic translation of the Arabic Wellbeing Course and is currently conducting a trial to examine the preliminary efficacy and acceptability of the Arabic translation (i.e., Study 6).

Limitations of this study include the following: first, the absence of a control

group means it is not possible to determine the effect of the treatment beyond that of spontaneous remission. Second, the small sample size limits the extent to which the results can be generalised and means that significant caution is needed in interpreting the results of the trial beyond conclusions about the general feasibility of iCBT for Arab people. Third, the relatively high educational level of the sample limits the extent to which the results can be generalised to those with lower levels of educational attainment. Fourth, the level of acculturation was not measured raising questions about the extent to which acculturation may moderate treatment outcomes. However, a large randomised controlled trial is planned, which will address several of these issues. A fifth limitation is the low questionnaire completion rates at posttreatment and follow-up, which reflect the low completion rates of the entire five lessons of the course. In order to present the results transparently, completer, last-observation-carried-forward, and results based on estimates using GEE modelling were reported. However, these limited completion rates provide further indications that caution should be taken in generalising the results of this study.

In summary, the self-guided format of the Arabic Wellbeing Course resulted in large improvements on measures of anxiety, depression, stress and disability at posttreatment, which were sustained at three-month follow-up. Moreover, the treatment was rated as acceptable to participants. Notwithstanding the low treatment completion and questionnaire completion rates, these results provide further evidence that this intervention has potential as a treatment tool for Arab people worldwide with symptoms of anxiety and depression.

## **7.0 - Study 6: A Pilot Study of a Clinician-Guided Internet-Delivered Cognitive Behavioural Therapy for Anxiety and Depression Among Arabs in Australia, Presented in Both English and Arabic Languages.**

A version of the following chapter was published in *Internet Interventions* (in press).

The candidate (i.e., lead author) designed and promoted the study, led the translation and cultural adaptation process, conducted the analyses, and drafted the manuscript:

Kayrouz, R., Dear, B. F., Karin, E., Fogliati, V. J., & Titov, N. (in press). A pilot study of a clinician-guided Internet-delivered Cognitive Behavioural Therapy for anxiety and depression for Arabs in Australia presented in both English and Arabic languages. *Internet Interventions*.

### **7.1 Introduction**

In the last 15 years, the size of the Arabic-speaking communities in Australia, *Arab Australians*, have increased by approximately 50% (Australian Bureau of Statistics 2006; Australian Bureau of Statistics, 2011) and Arabic is now the fourth most common language in Australia (Australian Bureau of Statistics, 2011). Relatively little is known about the mental health of this population; however, two small surveys (Centre for Epidemiology and Research, 2010; Kayrouz et al., 2014) indicate that the prevalence of anxiety, depression, and psychological distress may be higher in this group than in the general population (Slade et al., 2009).

Unfortunately, treatment seeking rates in Arab Australians appear to be lower than in the general Australian population (Kayrouz et al., 2014; Slade et al., 2009). Barriers to treatment seeking in this population include lack of culturally appropriate

services and lack of services delivered in the Arabic language (Kayrouz et al., 2014; Youssef & Deane, 2006). The latter point is particularly important as data indicate that 40% of Arab Australians have difficulty speaking English (Australian Bureau of Statistics, 2011). In addition, 38.5% of Arab Australians were born in Australia (Australian Bureau of Statistics, 2011), and may have difficulty reading Arabic. Consequently, when developing culturally-appropriate mental health services for Arab Australians, it may be beneficial to provide services in both English and Arabic, allowing Arab Australians to choose their language preference. Most research to date with Arab people living in Western countries do not provide this option, either presenting materials in English or Arabic only (Kayrouz et al., 2015; Kayrouz, Dear, Karin, Gandy, et al., 2016; Stenmark et al., 2013; Taloyan et al., 2013; R. Wagner et al., 2008).

One strategy that may reduce barriers to accessing psychological treatment and provide flexibility of choice in the preferred language is to deliver psychological interventions, such as cognitive behavioural therapy (CBT), via the Internet (Andersson & Titov, 2014). Two recent surveys of Arab people living in Australia and overseas found that more than 50% of the samples reported they would be willing try Internet-delivered CBT (iCBT) treatments to manage symptoms of anxiety and depression (Kayrouz et al., 2014; Kayrouz et al., unpublished). These findings are consistent with observations that Arab people prefer treatment that is short-term, directive, and focused on the present (Abudabbeh & Hays, 2006; Al-Krenawi & Graham, 2000; Chaleby, 1992).

Two recent feasibility pilot trials (Study 4 and Study 5 of this thesis; Kayrouz et al., 2015; Kayrouz, Dear, Karin, Gandy, et al., 2016) explored the efficacy and acceptability of treating symptoms of anxiety and depression in Arab people using a



culturally modified version of an existing evidence-based iCBT intervention, the *Wellbeing Course* (Dear, Staples, et al., 2015; Kirkpatrick et al., 2013; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov et al., 2012; Titov, Dear, Staples, Bennett-Levy, et al., 2015; Titov, Dear, Staples, Terides, et al., 2015). Results from these two trials were promising, and indicated the *Arabic Wellbeing Course* was associated with reductions in symptoms of anxiety, depression and disability in Arab people, and that more than 90% of participants rated the intervention as acceptable (Kayrouz et al., 2015; Kayrouz, Dear, Karin, Gandy, et al., 2016). However, a limitation of these trials is that the intervention was delivered in the English language and, therefore, would not be accessible to non-English speaking Arab people.

The present study aims to further extend this line of research by examining the efficacy and acceptability of the Arabic Wellbeing Course when presented in both the English and Arabic languages. Because of the absence of previous research exploring the efficacy of a translated iCBT treatment for Arab Australians experiencing depression or anxiety, an open-trial design was considered ethically appropriate to inform the power requirements of a future large randomised controlled trial. A secondary aim was to explore which language participants reported using.

## **7.2 Method**

### **7.2.1 Design and Hypotheses**

A single-group open trial design was utilised. A sample size of 15 was determined as sufficient (one-tailed test, power at 80%, and alpha at .05) to detect a within-group Cohen's *d* effect size of .70; the minimum likely effect based on previous studies employing the Wellbeing Course (Kayrouz et al., 2015; Titov et al., 2013). This

study was approved by the Human Research Ethics Committee of Macquarie University, Sydney, Australia, and registered as a clinical trial with the Australian New Zealand Clinical Trials Registry, ACTRN12163001329752.

Based on the results of a clinician-guided trial of the Arabic Wellbeing Course presented in the English language (Kayrouz et al., 2015) it was hypothesised that (1) Arab people would show a statistically and clinically significant reduction in the symptoms of depression, anxiety, distress and disability; and (2) Arab people would rate the course as worthwhile and would recommend the course to a friend or family member.

### **7.2.2 Participants**

Details about the study were promoted using Facebook (FB) recruitment strategies including promoting posts on the FB public page of the eCentreClinic research clinic (for more details see Study 3; Kayrouz, Dear, Karin, & Titov, 2016). Two phases of recruitment occurred from 16 June 2015 to 13 July 2015 (Phase 1) and 16 July to 10 August 2016 (Phase 2). Interested adults applied online via the eCentreClinic website ([www.ecentreclinic.org](http://www.ecentreclinic.org)), which provides information about anxiety and depression, and conducts clinical research concerning Internet-delivered treatment.

Over the two recruitment phases, eight participants in Phase 1 and five participants in Phase 2 met inclusion criteria, provided informed consent and volunteered to participate. Inclusion criteria were: (1) living in Australia; (2) overseas-born or Australian-born person who self-identified as being of Arabic ancestry; (3) between the ages of 18 and 70; (4) having reliable Internet access; (5) not receiving CBT elsewhere; (6) no history of a psychotic condition; (7) a Patient Health Questionnaire 9-item (PHQ-9) score  $\geq 5$  or a Generalised Anxiety Disorder 7-item (GAD-7) score  $\geq 5$

indicating at least mild depressive or anxiety symptoms, but not currently experiencing severe depression, which is defined as a total score  $\geq 23$  or a score = 3 on question 9 of the PHQ-9 (Kroenke et al., 2001); and (8) if taking medication for anxiety or depression, having been on a stable dose for at least one month.

Of the 30 participants who applied to participate, 13 were eligible with 17 participants excluded at assessment (see Figure 7.1). During assessment, 14/17 (82%) were excluded for the following reasons: (a) five for incomplete applications; (b) eight for experiencing very severe depression (i.e., defined as a total score  $\geq 23$  on the PHQ-9 or PHQ-9 Q9  $> 2$ ), and (c) one for poor Internet skills and unreliable Internet access. During treatment, 3/17 (18%) were excluded for not completing the pretreatment (baseline) questionnaires. The final sample had a mean age of 37.13 years ( $SD = 12.48$ ; range = 23 – 64) and 8/13 (62%) were males. The majority of participants were married ( $n = 7$ , 54%), with the remainder single ( $n = 5$ , 38%) or separated/divorced/other ( $n = 1$ , 8%). Fifty-four per cent of the sample ( $n = 7$ ) had attained at least a bachelor's degree, 31% ( $n = 4$ ) attained a diploma, and 15% ( $n = 2$ ) attained a trade certificate, apprentice or completed schooling at least up to Year 10 (approximately 15 years of age). Eight of the 13 participants (62%) reported they were in full-time or part-time employment, 3/13 (23%) unemployed, and 2/13 (15%) were full-time or part-time students. Five participants (38%) reported having had previous mental health treatment, two (15%) reported taking medication related to their symptoms, and participants reported a mean of 21.5 years of difficulties with mental health ( $SD = 9.2$ ).

### **7.2.3 Questionnaire Measures**

#### **7.2.3.1 Primary measures.**

##### ***7.2.3.1.1 Patient Health Questionnaire – 9-Item Scale (PHQ-9; Kroenke et al., 2001).***

The PHQ-9 is a nine-item measure of the symptoms and severity of depression that has been translated and validated in several languages (Gilbody, Richards, Brealey, & Hewitt, 2007), including Arabic (Al-Qadhi, ur Rahman, Ferwana, & Abdulmajeed, 2014; Becker, Al Zaid, & Al Faris, 2002). It has a clinical cut-off score of 10 that predicts a DSM-IV diagnosis of depression, with higher scores indicating greater symptom severity. Internal consistency of the questionnaire is high ( $\alpha = .74 - .89$ ; Kroenke et al., 2001), and the questionnaire has good clinical sensitivity to change (Titov, Dear, McMillan, et al., 2011). Cronbach's alpha in the present study was acceptable ( $\alpha = .78$ ).

##### ***7.2.3.1.2 Generalised Anxiety Disorder – 7-Item Scale (GAD-7; Spitzer et al., 2006).***

The GAD-7 is a brief seven-item screening questionnaire that has been found to be sensitive to generalised anxiety disorder, social phobia and panic disorder, with higher scores indicating greater symptom severity (Löwe et al., 2008). It is widely used and has been translated and validated in several languages, including Arabic (e.g., Bener, Al-Kazaz, Ftouni, Al-Harthy, & Dafeeah, 2013; Bener, Dafeeah, Chaturvedi, & Bhugra, 2013). Internal consistency of the GAD-7 scale is good ( $\alpha = .79 - .91$ ). The GAD-7 has good convergent and divergent validity with other anxiety and disability scales (Dear, Titov, Sunderland, et al., 2011; Kroenke et al., 2010). A clinical cut-off score of 8 indicated a diagnosis of anxiety disorder (Dear, Titov, Sunderland, et al., 2011; Lowe et

al., 2008; D. A. Richards & Suckling, 2009). Cronbach's alpha in the present study was acceptable ( $\alpha = .73$ ).

#### **7.2.3.2 Secondary measures.**

##### **7.2.3.2.1. Kessler 10-Item Scale (K-10; Kessler et al., 2002).**

The K-10 is a ten-item measure of general psychological distress with total scores  $\geq 22$  associated with a diagnosis of anxiety and depressive disorders (Andrews and Slade, 2001). The Arabic translation of the K10 has been extensively used in WHO World Mental Health Surveys (Kessler et al., 2002) and has been validated for some Arab populations (Fassaert et al., 2009). In the present sample, Cronbach's alpha was high ( $\alpha = .81$ ).

##### **7.2.3.2.2 Sheehan Disability Scales (SDS; D. V. Sheehan, 1983).**

The SDS is a three-item scale measuring functional impairment in the following domains: (1) work and studies, (2) social life, and (3) family life and home responsibilities. The SDS has been found to have high internal consistency of .89 (Leon et al., 1997). In the present study, Cronbach's  $\alpha = .80$ . Similar to previous translations of the SDS (Molykhia & Ibrahim, 2009), the SDS was translated by a team of professional translators and reviewed and approved by the lead author.

Participants were administered English and Arabic versions of all primary and secondary measures at pre-treatment, post-treatment and at three-month follow-up, allowing them to complete questionnaires in their preferred language. English and Arabic versions of the PHQ-9 and GAD-7 were also administered weekly to monitor safety and progress of each participant.

### **7.2.3.3 Additional measures.**

At posttreatment acceptability of the course was assessed by asking two questions in English and Arabic, which required a *Yes* or *No* response. The questions were: (1) “Would you recommend this Course to a friend or family member also experiencing stress or low mood?”; and (2) “Was it worth your time doing this Course?”.

At three-month follow-up, language preferences of the course were assessed by asking two questions in English and Arabic. The first question, “What language did you use to read the lessons of the Arabic Wellbeing Course?” required a response to a five-point Likert-scale (i.e., 1-*English only*; 2- *English mostly*; 3- *Both*; 4-*Arabic mostly*; and 5-*Arabic Only*). The second question was open ended and asked, “What were the advantages or disadvantages of having the course available in both English and Arabic? Do you have any other feedback for us around this?”.

### **7.2.4 Intervention**

The Wellbeing Course is a five-lesson iCBT intervention targeting core symptoms of both anxiety and depression; that is, a transdiagnostic intervention (Titov et al., 2013). The Wellbeing Course is based on the Macquarie University model (MUM) of Internet-delivered psychological treatment (Titov, Dear, Staples, Terides, et al., 2015). The Wellbeing Course is a structured skills-based course that focuses on teaching practical evidence-based psychological skills (e.g., realistic thinking, assertiveness, behavioural activation, and graded exposure) that assist in the management of symptoms of anxiety and depression, consistent with the aforementioned Arab preferences for psychological treatment. This course has been evaluated in several clinical trials (Kirkpatrick et al., 2013; Titov et al., 2013) with individuals of many

different culturally and linguistically diverse (CALD) backgrounds, including Arab Australians, and has been used in a national online public mental health service to treat more than 2,000 Australian adults (Titov, Dear, Staples, Bennett-Levy, et al., 2015).

In addition to the five lessons, the Wellbeing Course includes: (a) a summary of each lesson with homework to apply the skills taught in that lesson, (b) automated emails that encourage adherence and reinforce progress, (c) a secure email system for communication between the clinician and participant, (d) additional online resources about skills not described in the lessons, including communication, assertiveness, and sleep-hygiene skills and (e) case story examples about people who have completed the Course and have recovered from anxiety and depression.

#### **7.2.5 Translation**

The Arabic language version of the Arabic Wellbeing Course, retained the core therapeutic components of the English version of the Arabic Wellbeing Course (Kayrouz, Dear, Karin, Gandy, et al., 2016). However, modifications in the translation were made to ensure the translation was culturally syntonic; that is, expressions of language were congruent and sensitive to values and meanings of the culture (Bernal et al., 1995). In addition, images of people were changed to include more people with Arab features. Both English and Arabic versions of the lessons of the Arabic Wellbeing Course were presented in parallel, allowing the participants to choose their language of preference.

Translation of the content of the Course was conducted in stages. First, a team of five professional translators from a national translation service translated the English version of the Arabic Wellbeing Course into Arabic. Second, in consultation with an

independent translation team consisting of a professional translator and community mental health bilingual speaker, the translation was reviewed to ensure that the translation was culturally syntonic and could be understood by an Arab adult with Year 9 equivalent reading ability in Arabic (i.e., about 10 years of primary and secondary education). Third, all suggested changes were reviewed with the lead author (i.e., a bilingual psychologist who has worked over 15 years with the Arabic-speaking community in Australia) before submitting recommended changes to the principal team of translators. Fourth, changes were discussed by all stakeholders to reach consensus on the changes.

Two examples are presented here of the challenges addressed during translation. One challenge was noted when considering the appropriate Arabic translation of the title of the intervention. The principal team translated wellbeing in Arabic as “الرفاه”, which the independent translation team suggested could be interpreted to mean material wellbeing (i.e., luxurious and wealthy). After discussion, “عافية” which means wellness, was accepted as the least stigmatising and best option. In a second example, after discussion, the term psychological health in Arabic “الصحة النفسية” (i.e. psychological health) was not used in the title of the Course because of the potential stigma of the term due to its association with madness or being possessed, as noted by other researchers in this field (Gearing et al., 2012).

#### **7.2.6 Clinician**

The lead author provided clinical support in Arabic and English via telephone and email to all participants. Consistent with the previous trials of the Wellbeing Course (Dear, Staples, et al., 2015; Kirkpatrick et al., 2013; Titov et al., 2013; Titov, Dear,



Johnston, et al., 2014; Titov et al., 2012; Titov, Dear, Staples, Bennett-Levy, et al., 2015; Titov, Dear, Staples, Terides, et al., 2015), the clinician aimed to keep clinical contact to approximately 10 minutes per participant per week unless their clinical presentation indicated more time was required. During each contact the clinician aimed to reinforce progress, summarise key skills of the course, normalise commonly experienced difficulties during treatment and encourage continued engagement. The clinician was supervised by one of the co-authors (BFD) during scheduled weekly meetings and as required. A secure log of contact was kept that included progress notes and contact time.

#### **7.2.7 Statistical Methods**

A generalised estimation equation (GEE) modelling technique was employed to examine changes in the symptom measures over time. GEE emphasizes the modelling of change in an average group effect over time while accounting for within-subject variance with the specification of a working correlation structure. Rather than creating conditional interpretation with the use of individual intercepts or random slopes, as in traditional mixed linear models, the primary emphasis in GEE is to directly model the average group-related change over time (Hubbard et al., 2010). An exchangeable working correlation structure was selected, coupled with a robust error estimation, and coupled with a specified gamma distribution with a log link function to address the positive skewness and proportional change in the dependent variable. To compare the preliminary efficacy of the intervention group across time, GEE analyses were run for the overall sample comparing the primary and secondary outcome variables from pretreatment to posttreatment and three-month follow-up in the intervention group. Pairwise contrasts were made to test additional symptom change between posttreatment

and three-month follow-up. All analyses were performed in SPSS version 22.0 (SPSS, Inc., Chicago, IL).

Missing data was addressed via imputation consistent with intention-to-treat principles. Two imputation approaches were employed: last observation carried forward, and model based estimation. Separate generalised linear models, utilising time effects and the covariate of baseline severity, were employed for the model based estimation approach.

Based on dissemination studies (D. A. Richards & Suckling, 2009), an index of clinical significant remission and deterioration was calculated. The remission index was defined as the proportion of participants who at pretreatment scored at or above the clinical cut-offs on the PHQ-9 ( $\geq 10$ ) and GAD-7 ( $\geq 8$ ), and then subsequently below these clinical cut-offs at posttreatment and three-month follow-up (D. A. Richards & Suckling, 2009). Negative effects of treatment (Rozental et al., 2014) were measured as deterioration, which was defined as an increase by five or more points on the PHQ-9 or GAD-7 at posttreatment or follow-up, compared to pretreatment (D. A. Richards & Suckling, 2009). Importantly, in these analyses, the last available data (i.e., last observation-carried-forward; LOCF) was carried forward for participants who did not complete posttreatment or three-month follow-up questionnaires to provide a conservative estimate of effect sizes and remission. All analyses were performed in SPSS version 22.0 (SPSS, Inc., Chicago, IL).

## **7.3 Results**

### **7.3.1 Adherence and Attrition**

Ten of thirteen (77%) participants completed the Course, which was defined as reading all five lessons within the eight-week period; however, 85% (11/13) read the first four lessons, which provides a proxy of minimum therapeutic dose. Ten of thirteen (77%) participants provided posttreatment and three-month follow-up data. Figure 7.1 shows participant flow including adherence and attrition rates.

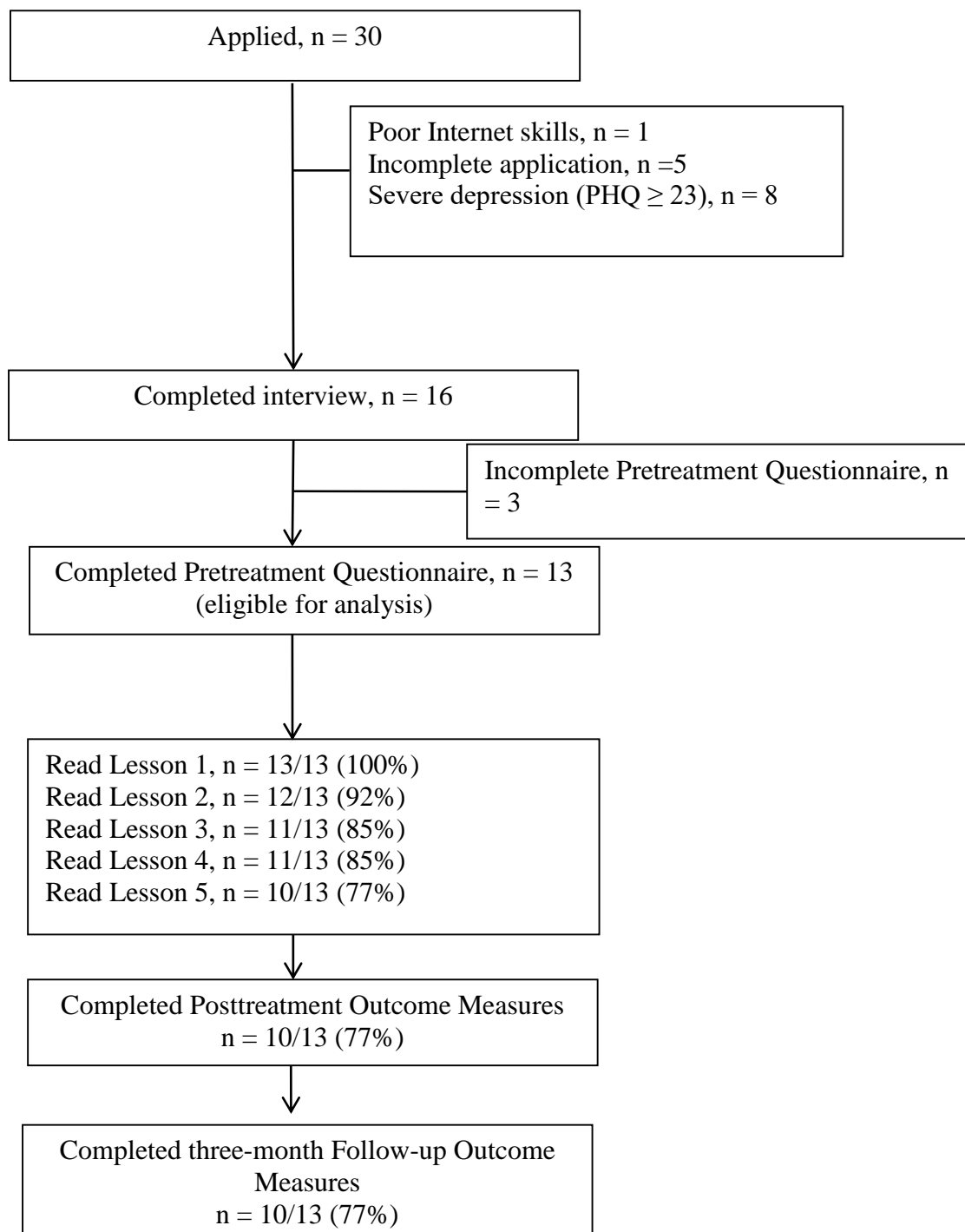


Figure 7.1. Participant flow.

### 7.3.2 Outcomes and Effect Sizes

The outcomes and effect sizes of the trial are displayed in Table 7.1. The GEE analyses revealed significant main effects for Time on all measures: PHQ-9 (*Wald's*  $\chi^2 (2, N = 13) = 31.43, p < .001$ ), GAD-7 (*Wald's*  $\chi^2 (2, N = 13) = 21.26, p < .001$ ); SDS (*Wald's*  $\chi^2 (2, N = 13) = 24.24, p < .001$ ); and K-10 (*Wald's*  $\chi^2 (2, N = 13) = 32.94, p < .001$ ). Pairwise comparisons revealed that PHQ-9, GAD-7, SDS and K-10 scores were significantly lower at posttreatment and three-month follow-up than at pretreatment (all  $p < .001$ ). There were no significant differences on all outcome measures between posttreatment and three-month follow-up.

Large pretreatment to posttreatment, and pretreatment to three-month follow-up effect sizes were found on all measures, using both completer and estimated-marginal means (completers: Cohen's  $d = 1.10$  to  $1.60$ ; estimated marginal means;  $d = 1.18$  to  $1.72$ ). Further, moderate to large effect sizes on primary measures (i.e., PHQ-9 and GAD-7) were also found when using last observation carried forward (LOCF: Cohen's  $d$  for PHQ-9 and GAD-7 was  $0.89$  and  $0.74$  respectively). Comparison of posttreatment to three-month follow-up effect sizes indicated there were no additional improvements across all outcome measures.

Table 7.1

*Observed and Estimated Means, Standard Deviations, Confidence Intervals and Effect Sizes (Cohen's d) for the Overall Sample*

|              | Observed Means |              |              | Estimated Marginal Means |              |              | Within Group Effect Sizes (based on estimated means) |                   |                    |
|--------------|----------------|--------------|--------------|--------------------------|--------------|--------------|--|-------------------|--------------------|
|              | Pre            | Post         | Follow-up    | Pre                      | Post         | Follow-up    | Pre-post   | Pre to Follow-up  | Post to Follow-up  |
| <b>PHQ-9</b> | 12.53 (4.66)   | 6.60 (4.65)  | 5.70 (4.42)  | 12.54 (4.48)             | 6.72 (3.87)  | 5.80 (3.68)  | 1.39 (.50 – 2.20)                                    | 1.64 (.71 – 2.47) | .24 (-.54 – 1.01)  |
| <b>GAD-7</b> | 11.15 (5.46)   | 6.00 (3.37)  | 5.00 (5.06)  | 11.15 (5.25)             | 6.06 (3.14)  | 5.05 (4.21)  | 1.18 (.31 – 1.97)                                    | 1.28 (.40 – 2.08) | .27 (-.51 – 1.04)  |
| <b>SDS</b>   | 24.15 (13.37)  | 8.90 (9.53)  | 7.00 (7.16)  | 24.15 (12.84)            | 8.92 (7.93)  | 6.88 (5.96)  | 1.43 (.53 – 2.24)                                    | 1.72 (.78 – 2.56) | .29 (-.49 – 1.05)  |
| <b>K10</b>   | 29.62 (8.10)   | 18.60 (6.40) | 18.90 (9.45) | 29.62 (7.78)             | 18.81 (5.34) | 19.11 (7.87) | 1.62 (.69 – 2.45)                                    | 1.34 (.45 – 2.15) | -.05 (-.81 – .072) |

*Note.* Standard deviations and 95% confidence intervals are shown in parentheses. Pre: Pretreatment, Post: Posttreatment; Follow-up: three-month follow-up; PHQ-9: Patient Health Questionnaire 9-Item; GAD-7: Generalised Anxiety Disorder 7-Item.; SDS: Sheehan Disability Scale; K10: Kessler 10-item

### **7.3.3. Clinical Significance**

Table 7.2 displays the clinically significant remission and recovery rates on the PHQ-9 and GAD-7. For the PHQ-9, of the 10/13 (76.9%) participants who scored above the cut-off at pretreatment, eight (8/13; 61.5%) were below this cut-off at posttreatment and three-month follow-up. Six of 13 (46.2%) and five of 13 (38.5%) participants made a 50% or greater improvement on the PHQ-9 at posttreatment and three-month follow-up respectively. For the GAD-7, of the 9/13 (69.2%) participants who scored above the cut-off at pretreatment, 7/13 (53.8%) were below this cut-off at posttreatment and three-month follow-up. Three of 13 (23.1%) and five of 13 (38.5%) participants made a 50% or greater improvement on the GAD-7 at posttreatment and three-month follow-up respectively.

### **7.3.4. Deterioration**

At posttreatment and three-month follow-up, none of the 13 participants obtained PHQ-9 and GAD scores five or more points higher compared to pretreatment, respectively, indicating no participants met criteria for deterioration.

### **7.3.5. Acceptability**

Ten of 13 respondents (77%) provided ratings of the acceptability of the course. All (10/10) of the responding participants reported both that it was “Worth their time doing the course”, and that they would “Recommend this course to a friend or family member with anxiety or depression”.

Table 7.2

*Proportion of Participants Below Cut-Off Scores of Clinical Significance (Remission) and Proportion Demonstrating at Least 50% Reduction in Pretreatment Scores (Recovery) and the Average Improvement of the Group*

|              | Pretreatment       | Posttreatment      |                  |                     | Three-Month Follow-Up |                  |                     |
|--------------|--------------------|--------------------|------------------|---------------------|-----------------------|------------------|---------------------|
|              | ≥ Clinical Cut-Off | ≤ Clinical Cut-Off | ≥50% Improvement | Average Improvement | ≤ Clinical Cut-Off    | ≥50% Improvement | Average Improvement |
| <b>PHQ-9</b> | 10/13 (76.92%)     | 8/13 (61.54%)      | 6/13 (46.15%)    | 33.10%              | 8/13 (61.54%)         | 5/13 (38.46%)    | 40.38%              |
| <b>GAD-7</b> | 9/13 (69.23%)      | 7/13 (53.84%)      | 3/13 (23.08%)    | 32.06%              | 7/13 (53.84%)         | 5/13 (38.46%)    | 37.77%              |

*Note.* Intention-to-treat model was employed with last-observation being carried forward if follow-up data was not available. The clinical cut-offs utilised for the PHQ-9 and GAD-7 were 10 and 8 respectively.



### **7.3.6. Language Preferences**

Ten of 13 respondents (77%) provided responses to the questions about language preferences. Seventy percent (7/10) reported using both English and Arabic translations of the Arabic Wellbeing, 20% (2/10) reported using English only, and 10% (1/10) reported using Arabic only.

### **7.3.7. Contact**

The mean total clinician time per participant over the eight-week course was 63.54 mins ( $SD = 28.45$ ), which comprised an average of 53.69 mins ( $SD = 27.56$ ) and 9.85 mins ( $SD = 5.44$ ) per participant for telephone calls and secure private emails, respectively. An additional average of 13.69 mins ( $SD = 3.53$ ) per participant was required for administrative purposes including the screening telephone call at recruitment. The clinician made an average of 10 telephone calls ( $SD = 1.44$ ; range = 6 to 11) and an average of 5.9 emails to each participant ( $SD = 1.46$ ; range = 3 to 8) during the course.

## **7.4. Discussion**

The primary aims of the present study were to examine the preliminary efficacy and acceptability of the Arabic Language Wellbeing Course, a culturally modified transdiagnostic iCBT program, for symptoms of anxiety and depression in Arab-speaking Australians when administered by a clinician. It was hypothesised that participants would report statistically and clinically significant reductions in symptoms of depression, anxiety, distress and disability and that the intervention would be rated as acceptable. These hypotheses were supported.

Overall, the results from this small, preliminary, trial are encouraging. Large within-group effect sizes were found on the primary and secondary outcome measures including a measure of disability, indicating that improvements generalised to other domains. The available data indicated that these improvements were maintained at follow-up and were reflected in moderate levels of remission and recovery. These results are consistent with the results of previous small open trials of the English version of the Arabic Wellbeing Course with Arab people living in Australia (Kayrouz et al., 2015), and in other countries (Kayrouz, Dear, Karin, Gandy, et al., 2016), and with results observed in an evaluation of the Wellbeing Course used in a clinician-guided format with a general Australian population (Dear, Staples, et al., 2015; Kirkpatrick et al., 2013; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov et al., 2012; Titov, Dear, Staples, Bennett-Levy, et al., 2015; Titov, Dear, Staples, Terides, et al., 2015) .

These results are also consistent with the positive results from an emerging body of work that has evaluated, modified and translated versions of iCBT interventions developed for Western populations with other CALD groups including Chinese and Arab people (Choi et al., 2012; Knaevelsrud et al., 2015; B. Wagner, Schulz, et al., 2012). This literature provides support for the position that people of different cultures share similar experiences of anxiety and depression, and may therefore benefit from similar treatment strategies. Notwithstanding the limitations of an open trial design, the present study extends these results by demonstrating that relatively minor modifications and translations may be sufficient to make interventions acceptable to a targeted CALD group. Importantly, because modified interventions have shown preliminary effectiveness in translated formats (Choi et al., 2012; Knaevelsrud et al., 2015), the potential for reducing the language barrier and increasing availability of culturally appropriate mental health services for CALD communities is considerable.

An interesting and unexpected finding was that 70% of participants who completed the three-month follow-up questionnaires reported using both English and Arabic translations of the Arabic Wellbeing Course. Participants reported that presenting the Course in English and Arabic improved their understanding of the content of the Course. For example, one participant reported “It was very valuable to be able to navigate through the course in Arabic when not sure about any psychology terms in English”. Consequently, further research and future dissemination of the Arabic Wellbeing Course may need to consider presenting the Course in both English and Arabic.

Despite addressing a key barrier to treatment by making treatment available in Arabic, there was a relatively slow and low rate of recruitment. This difficulty with recruitment may reflect relatively low levels of mental health literacy of CALD populations (Adrian & Aseel, 2014). This suggests that strategies that aim to reduce barriers to care require multiple methods including appropriately translated and modified treatment materials, as well as publicly available materials that can increase mental health literacy in the target CALD groups. Such materials could be made available not only on websites, but also on social media, which appears to have potential for increasing access among otherwise hard-to-reach CALD groups (Kayrouz, Dear, Karin, & Titov, 2016; Ünlü Ince et al., 2014).

Limitations of this study include the following. First, the absence of a control group means it is not possible to determine effect of the treatment beyond that of spontaneous remission. Second, the small sample size limits the extent to which the results can be generalised and means that significant caution is needed in interpreting the results of the trial beyond conclusions about the general feasibility of iCBT for Arab people in Australia. Third, the relatively high educational level of the sample limits the

extent to which the results can be generalised to those with lower levels of educational attainment. Fourth, the level of acculturation was not measured raising questions about the extent to which acculturation may moderate treatment outcomes. However, a large randomised controlled trial is planned, which will address several of these issues.

In summary, the translated format of the Arabic Wellbeing Course was associated with large improvements on measures of anxiety, depression, stress and disability at posttreatment, which were sustained at three-month follow up. Moreover, the treatment was rated as acceptable by participants. These results contribute to an emerging body of evidence indicating that iCBT interventions are a promising strategy for increasing access to treatment by CALD populations who might otherwise be unable to access mental health care.

## **8.0 - Discussion**

### **8.1 General Summary**

This thesis had three primary aims. First, it aimed to examine the psychological distress of Arab people both in Australia and in other countries by measuring symptoms of psychological distress, treatment seeking history, treatment preferences and barriers to treatment (Studies 1 and 2). The first aim was achieved through the results of Study 1 and 2 that showed Arabs in Australia and in other Arab countries experience high levels of psychological distress, report several barriers to accessing treatment (e.g. poor mental health literacy), underutilise mental health services, and may be willing to try online mental health services. Second, it aimed to compare social media and traditional recruitment strategies for engaging Arab people in mental health research (Study 3). This aim emerged as central to the core themes of the thesis as innovative strategies were explored to address the difficulty in recruitment of participants across all the studies in the present thesis. This second aim was achieved by the results of Study 3 that show a combination of traditional and FB recruitment strategies assisted in engaging more Arab people into mental health research, but examination of other innovative strategies is required. Finally, it aimed to evaluate the efficacy and acceptability of clinician-guided and self-guided versions of iCBT amongst Arab people who experience symptoms of anxiety and depression (Studies 4 to 6). The third aim was achieved through Studies 4 - 6 showing preliminary efficacy and acceptability of iCBT for Arab populations. The results of the six studies are summarised below.

### **8.1.1 Study 1**

Study 1 aimed to contribute to the limited data available on the mental health status and needs of Arab Australians. An online survey was used to examine levels of psychological distress, barriers to accessing psychological treatments, help-seeking behaviours and preferences for delivery of psychological treatments. Of the 252 Arab Australians who completed the survey, 32% (81/252) reported high levels of psychological distress on a measure of psychological distress, the K-10. However, only 22% (18/81) of these participants with high distress reported having sought help from a mental health professional in the last 12 months. Respondents indicated they were willing to try Internet-delivered treatment (55%), however, the preference was for face-to-face treatment (90%).

### **8.1.2 Study 2**

Study 2 extended upon Study 1 by examining levels of psychological distress, and the acceptability, preferences, and use of mental health services by Arab people across several countries worldwide. Of the 503 who completed the survey, 36% (183/503), 46% (233/503), and 73% (365/503) reported that they would see a mental health professional, take prescription medication or try an Internet-delivered psychological treatment, respectively. Consistent with Study 1, the results of Study 2 indicated that Internet-delivered mental health services were at least moderately acceptable and represent one possible way of increasing access to treatment for Arab people worldwide.

### 8.1.3 Study 3

Study 3 examined the effectiveness of using Facebook (FB) as a strategy for recruiting Arab people to mental health treatment research. Study 3 compared traditional recruitment strategies including media releases, emails, and print advertisements with FB strategies including boosting posts, promoting websites, events and FB fan pages. The main outcomes of interest were the number of applications started during each strategy and the time and cost per application. Overall, 86% (70/81) of the resultant applications occurred via FB recruitment. FB strategies were more time-effective and recruited participants 2.5 times faster than the traditional strategies. However, there were no differences in cost-effectiveness between the FB (\$US37 per participant) and traditional strategies (\$US40 per participant). These findings support the potential of FB recruitment strategies, alongside more traditional strategies, as a way of recruiting hard-to-reach populations for mental health treatment research.

### 8.1.2 Study 4

Study 4 examined the efficacy and acceptability of a culturally modified and transdiagnostic clinician-guided iCBT treatment, the *Arabic Wellbeing Course*, for Arab-Australian adults with symptoms of depression and anxiety. Eleven participants with at least mild symptoms of depression or anxiety accessed the Arabic Wellbeing Course which comprised five lessons delivered over eight weeks, presented in the English language. Ninety-one per cent of participants completed the five lessons over eight weeks, and provided posttreatment and three-month follow-up data. Participants improved significantly across primary outcome measures of anxiety and depression,

with large within-group effect sizes (Cohen's *d*) at posttreatment and three-month follow-up (Table 8.1). Participants rated the treatment as acceptable. These results indicate that Internet-delivered treatments, which have predominantly been tested in Western countries, may also have the potential to be of benefit to English speaking Arab immigrants.

### **8.1.5 Study 5**

Study 5 examined the efficacy and acceptability of a self-guided version of the *Arabic Wellbeing Course* for Arab adults with symptoms of depression and anxiety. Thirty-six participants from seven countries, with at least mild symptoms of depression or anxiety accessed a version of the Course presented in the English language. Thirty-six percent of participants completed the five lessons over eight weeks, with 61% and 36% providing posttreatment and three-month follow-up data, respectively. Participants improved significantly across primary outcome measures, with large within-group effect sizes (Cohen's *d*) at posttreatment and three-month follow-up (Table 8.1). Notwithstanding the low completion rates, these results indicate that self-guided Internet-delivered interventions may also have potential as an approach for the treatment of anxiety and depression among Arab people.

### **8.1.6 Study 6**

Study 6 examined the efficacy and acceptability of the *Arabic Wellbeing Course* provided in both English and Arabic languages, for Arab-Australian Adults with symptoms of depression and anxiety. Thirteen participants with at least mild symptoms of depression or anxiety accessed the Course. Seventy-seven per cent of participants



completed the five lessons over eight weeks and provided posttreatment and three-month follow-up data. Participants improved significantly across primary outcome measures, with large within-group effect sizes (Cohen's *d*) at posttreatment and three-month follow-up (Table 8.1). Participants rated the Arabic Wellbeing Course as acceptable, and 54% (7/13) reported accessing the Course in both English and Arabic. These results extend the results of Study 4 and Study 5 and support the feasibility of providing iCBT in both English and Arabic languages.

Table 8.1

*Effect Sizes (Cohen's d) on Primary and Secondary Outcome Measures and Completion Rates for Studies 4-6*

| Study | Design (Participants)   | Language           | Group | Pre to Post<br>Within Group<br>Effect Size |       |      |      | Pre to Follow-Up<br>Within Group<br>Effect Size |       |      |      | Completion Rates<br>Acceptability Rates |
|-------|---|--------------------|-------|--|-------|------|------|---|-------|------|------|---|
|       |   |                    |       | PHQ-9                                      | GAD-7 | SDS  | K-10 | PHQ-9   | GAD-7 | SDS  | K-10 |   |
| 4     | Open trial clinician-guided treatment (Arab Australians)                  | English            | iCBT  | 1.74                                       | 1.08  | 1.68 | 1.53 | 1.81  | 1.53  | 1.82 | 2.00 | 10/11 (91%)<br>89%                      |
| 5     | Open trial self-guided treatment (Arabs living in Australia and overseas) | English            | iCBT  | 1.20                                       | 1.15  | 0.81 | 0.91 | 1.99  | 1.68  | 1.53 | 1.66 | 13/36 (36%)<br>91%                      |
| 6     | Open trial clinician-guided treatment (Arab Australians)                  | English/<br>Arabic | iCBT  | 1.39                                       | 1.18  | 1.43 | 1.62 | 1.64  | 1.28  | 1.72 | 1.34 | 10/13 (77%)<br>100%                     |

*Note.* GAD-7: Generalised Anxiety Disorder 7-Item; iCBT = Internet-delivered cognitive behavioural therapy for anxiety or depression; Follow-up = three-month follow-up; K-10 = Kessler 10-item psychological distress scale; Pre = Pretreatment; Post = Posttreatment; PHQ-9: Patient Health Questionnaire – 9 Item; SDS = Sheehan Disability Scale; Completion Rates = Percentage of participants that completed the five lessons over the eight weeks; Acceptability Rates = Percentage of participants that endorsed they would recommend the course to a friend or family member.

## **8.2 Relationship to the Literature on Prevalence and Barriers**

A key finding of Study 1 was that a significant proportion of Arab Australian respondents had high levels of psychological distress. Study 1 also extended the literature on intergenerational differences in Arab-Australians by identifying similar levels of psychological distress amongst first- and second-generation Arab Australians. Study 1 also found that both groups had higher levels of distress than observed in the general Australian population (Australian Bureau of Statistics, 2008). These results are consistent with previous research that reported elevated rates of psychological distress in Lebanese Australians living in New South Wales (Centre for Epidemiology and Research, 2010), and Iraqi refugees living in Western Sydney (Slewa-Younan et al., 2014). The levels of psychological distress identified in Study 1 are associated with an increased likelihood of meeting diagnostic criteria for major depression and anxiety disorders (Andrews & Slade, 2001). Notwithstanding the limitations of Study 1, these results contribute to evidence that the prevalence of anxiety and depression in Arab Australians is at least as high as for the general Australian population.

Study 2 replicated and extended the results of Study 1, and found that Arab people living in Australia and several Arab countries (i.e., Algeria, Egypt, Iraq, and Yemen) reported higher levels of psychological distress compared to the general Australian population. The results of Study 2 are also consistent with previous reports of high levels of severity of symptoms in Arab people in Iraq (Alhasnawi et al., 2009) and Egypt (Ghanem et al., 2009). These results also provide novel but preliminary data about the levels of psychological distress in Arab countries, such as Algeria and Yemen, where epidemiological studies of mental health have not previously been reported.

Another key finding of Study 1 was that many respondents with high levels of psychological distress (i.e., K10-  $\geq 22$ ) did not utilise mental health services. Only 18% of respondents with high psychological distress reported seeing a mental health professional for anxiety and depression in the previous 12 months. Several barriers to treatment seeking were identified, which have also been identified in previous studies of Arab people (Aloud & Rathur, 2009; Andrade et al., 2014; Gearing et al., 2012; Guterman et al., 2010; Youssef & Deane, 2006). These include shame and stigma, cost and transport difficulties, the belief that their problem was not severe enough to warrant treatment, and a lack of awareness of the availability of mental health services, which reflects limited mental health literacy (Jorm, 2012). The culture-specific barrier of lack of trust in mental health services, which was identified in Study 1 (Kayrouz et al., 2014), has also been reported in previous research with Arab populations (e.g., Gearing et al., 2012), but not in the WHO's World Health Surveys (Andrade et al., 2014). These results indicate that many of the barriers to treatment seeking experienced by Arab adults are similar to those reported by adults in Western countries.

The third key finding of Study 1 and 2 was that Arab people living in Australia and abroad generally reported moderate to high levels of interest in trying Internet-delivered treatment. Specifically, 55% of respondents in Study 1 indicated they would try Internet-delivered treatment for anxiety and depression. Importantly, Study 2, which provided more specific information about iCBT found higher levels of interest in trying iCBT (73%) compared with face-to-face services (36%). This increase in interest is consistent with reports indicating that providing people with practical information about an intervention increases the likelihood that they would try it (Jorm, 2012) and, further, provides evidence that attitudes towards novel intervention such as iCBT may be modifiable using appropriate education and marketing strategies.

The reasons for the relatively high acceptability of online mental health services among Arab respondents were not directly measured. However, it is likely that the advantages of anonymity, flexibility and low cost associated with such services, identified in previous research (Cuijpers et al., 2009; Donker et al., 2015; Hedman, Andersson, Ljótsson, Andersson, Rück, & Lindefors, 2011; Hedman, El Alaoui, et al., 2014) are also relevant to Arab people. An important implication of Study 2 is that Internet-delivered mental health services could be particularly useful for Arab females in certain Arab countries (Al-Krenawi & Graham, 1999; Gearing et al., 2012) who would otherwise have to attend consultations accompanied by their husband or father. Thus, Internet-delivered mental health services may reduce a significant culture-specific gender barrier by allowing females to access online professional help from the privacy of their home.

### **8.3 Relationship to the Literature on Recruitment to Mental Health Research**

Study 3 contributed to an emerging literature indicating that FB may reduce barriers to recruiting Arab people and other hard-to-reach groups to mental health research. Consistent with previous research (Amon et al., 2015; Batterham, 2014; Harris et al., 2015; Loxton et al., 2015; Ünlü Ince et al., 2014), the results of Study 3 indicated that the FB strategies of boosting posts and promoting FB public fan pages provided a more time-effective method of recruiting Arab research participants compared to traditional strategies (i.e., email, newsletters, newspapers, radio and TV). These results indicate social media platforms may potentially provide opportunities for increasing mental health literacy by providing general information about psychological symptoms and mental health services to CALD groups who might otherwise be unlikely to receive

such information. Further, social media could also be utilised as a strategy for increasing representation of CALD groups to test the efficacy of psychological treatments before dissemination (Nápoles & Chadiha, 2011; Redwood & Gill, 2013), thus increasing the potential benefits of such treatments.

## **8.4 Relationship to the Literature on CBT Treatments for Anxiety and Depression**

As summarised in Table 8.1, the results of Studies 4 to 6 indicated moderate to high completion rates, large effect sizes, and high levels of acceptability when the Arabic Wellbeing Course was provided to Arab people. These results highlight the potential of iCBT for Arab people as an approach for overcoming some of the barriers to traditional face-to-face treatment and increasing access to treatment. Specifically, Study 4 supported the feasibility of iCBT for Arab Australians, Study 5 supported the feasibility of self-guided iCBT for Arab people, and Study 6 explored the feasibility of simultaneously providing iCBT in both English and Arabic.

### **8.4.1 Comparison with Studies of Face-to-Face and Internet-Delivered CBT**

The results of Studies 4 and 6 compare well when benchmarked against meta-analyses of face-to-face CBT (Butler et al., 2006; Cuijpers et al., 2014) and iCBT trials conducted with Western populations. For example, Hedman et al. (2012) reported an average within-group effect size of 1.07 for iCBT treatments targeting anxiety and depression, when administered with regular clinician support during treatment. This is consistent with other meta-analyses by Cuijpers et al. (2009), Andrews et al. (2010), and

D. Richards et al. (2015) who found average between-group effect sizes of 1.08, 0.88 and 0.91 for clinician-guided iCBT, respectively. In addition, the pattern of results of Studies 4 and 6 are consistent with those reported in clinician-guided trials of tailored or transdiagnostic iCBT with Western populations (Carlbring et al., 2011; Dear, Staples, et al., 2015; Dear, Titov, Schwencke, et al., 2011; Johansson, Sjöberg, et al., 2012; Mausbach et al., 2008; Nordgren et al., 2014; Silfvernagel et al., 2015; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov et al., 2012; Titov, Dear, Schwencke, et al., 2011; Titov, Dear, Staples, Terides, et al., 2015). Thus, although Studies 4 and 6 indicate the potential of transdiagnostic iCBT for immigrant Arabs with anxiety and depression these results also indicate the need for large randomised controlled trials aimed at comprehensively evaluating iCBT for Arab people.

The clinical results of Study 5, which examined the feasibility of self-guided iCBT provided to Arab people both in Australia and in other countries, also compare favourably with those reported in self-guided iCBT trials with Western populations (Berger, Caspar, et al., 2011; Berger, Hämmerli, et al., 2011; Dear, Zou, Ali, Lorian, Johnston, Terides, et al., 2015; Titov et al., 2013; Titov, Dear, Johnston, et al., 2014; Titov, Dear, Staples, Terides, et al., 2015). Finally, although the current studies did not focus on PTSD, the results of Study 5 also compare favourably with the results of the few other studies to examine iCBT for Iraqis (Knaevelsrud et al., 2015; B. Wagner, Brand, et al., 2012; B. Wagner, Schulz, et al., 2012).

In summary, notwithstanding their small sample sizes and use of open trial designs, the findings of Studies 4, 5 and 6 support the potential of clinician-guided and self-guided iCBT for Arab people with anxiety and depression. The theoretical and dissemination implications of the current findings are discussed below.

## **8.4 Theoretical and Dissemination Implications**

### **8.4.1 Theoretical Implications**

The results of the studies in this thesis have several theoretical implications. Broadly, these include implications that inform our understanding of psychological distress and about treatment strategies for managing psychological distress.

First, the results of this thesis add to a significant body of literature indicating that key elements of the experience of psychological distress appear to be similar across cultures (Kessler et al., 2009; Wang et al., 2007). Arab people who participated in the studies in this thesis experienced at least similar levels of distress as the general Australian population (Slade et al., 2009; Whiteford et al., 2014). Moreover, the reported barriers to treatment seeking reported by Arab adults were very similar to those identified by studies with Western and non-Western adults (Andrade et al., 2014). These results are also consistent with a broader body of literature which has identified similar prevalence rates, levels of distress, and barriers to treatment in a broad range of cultures including Chinese, Indian, Israelis, Mexican, Nigerian, South African and Ukrainian peoples (Andrade et al., 2014; Kessler et al., 2009). This is important because it means that approaches employed to reduce barriers and increase access in these countries may be applicable to Arab people.

Second, the results of this thesis indicate that Arab people benefited from a psychological intervention developed for the general Australian population (Dear, Staples, et al., 2015; Titov, Dear, Staples, Terides, et al., 2015) but which was presented with minor modifications. The positive results are not entirely surprising given the positive results of trials of face-to-face CBT with Arab populations, where most interventions were initially developed for Western populations but modified for use by



Arab people (e.g., Damra et al., 2014; Hamdan-Mansour et al., 2011; Hamdan-Mansour et al., 2009; Stenmark et al., 2013). These results are consistent with evidence presented in Chapter 1, which indicates that CBT is highly consistent with Arabs' preference for present-focused, short-term and directive psychological treatments (Abudabbeh & Hays, 2006; Al-Krenawi, 2000), and the Islamic model of health, which includes having a good opinion of God, others and future (Al Hadi et al., 2012; Thomas & Ashraf, 2011). The implications of this include that clinicians, researchers and services in non-Western countries may be able to draw on existing interventions rather than having to invest significant resources in recreating specific programs for each culture.

Thirdly, and related particularly to the previous point, Arab people responded to a transdiagnostic iCBT intervention, the Arabic Wellbeing Course, which targeted symptoms of both anxiety disorders and depression. This is important because anxiety and depressive disorders are also frequently comorbid in different cultures and transdiagnostic treatments which are designed to target core and common symptoms of anxiety and depressive disorders (Goldberg, Krueger, Andrews, & Hobbs, 2009) thus potentially offer advantages. For example, transdiagnostic interventions developed in Western countries may offer efficiencies in that they may be translated to different languages and may not require extensive evaluations for target disorders in every different CALD group. These interventions may mean it is easier to train clinicians and less demanding on them, which will make the interventions easier to disseminate.

Together, these observations indicate that Arab people appear to experience similar psychological symptoms and respond to similar treatments as Western populations. Notwithstanding the documented examples of individual and cultural differences in the expression of psychological symptoms (e.g., Hinton & Lewis-

Fernández, 2010; Nichter, 1981), these findings are broadly consistent with the *nomothetic* perspective of psychological treatment. This perspective argues that, for the most part, there are consistencies in how individuals and cultures respond to the treatment of psychological distress (Tharp, 1991). This perspective has implications for dissemination, which will be discussed below. However, it also has implications for models of cultural adaptation of psychological interventions. As indicated in Chapter 1, there are multiple models of cultural adaptation, including the ecological validity model (Bernal et al., 1995), the cultural sensitivity framework (Resnicow et al., 2000) and the heuristic framework (M. Barrera & Castro, 2006). However, the majority of studies that have evaluated face-to-face administered CBT with Arab populations report that the extent of required modifications are relatively minor, mostly consisting of changing language and cultural idioms, rather than requiring substantive changes to treatment strategies.

This approach is consistent with the SDTAF (2006) model of adaptation, which asks researchers to consider the necessity of cultural adaptation by determining the goodness of fit between EBT and the targeted community, and then if adaptation is necessary, ensure that adaptation is not detrimental to treatment outcomes. Although it did not directly test the SDTAF model, the current thesis provides indirect support for the SDTAF model in that there was a good fit for CBT and Arab people and that surface-level cultural adaptations were not detrimental to treatment outcomes. Potentially, this framework provides a compelling and pragmatic data-driven approach to adaptation that may facilitate consensus between the disparate approaches in the field and assist in developing a more unified approach to the practice of cultural adaptation of psychological treatments.

#### **8.4.2 Implications for Dissemination**

The results of this thesis have several implications for dissemination. First, the present results provide additional evidence for the feasibility and potential of iCBT as a way of increasing access to mental health services to Arab people and different CALD populations who may be unable or unwilling to access face-to-face services. The results of Studies 4 to 6 are consistent with the few available studies that have explored the efficacy of iCBT with other CALD groups (A. Z. Barrera, Wickham, & Muñoz, 2015; Choi et al., 2012; Herrera-Mercadal et al., 2015). It is possible that iCBT could become a key mental health service to CALD groups and could overcome some of the challenges faced by traditional face-to-face CALD services. For example, these face-to-face services often need a broad range of clinicians to work with a broad range of CALD groups. However, this is often difficult to implement and to provide the same level of CALD service equitably across large countries. Instead, the development of centralised online national clinics to treat anxiety and depression, such as the MindSpot Clinic (Titov, Dear, Staples, Bennett-Levy, et al., 2015) could be extended to include the treatment of CALD populations. Thus, CALD expertise can be centrally located in one space and yet service the mental health needs of CALD people across the country without having to replicate the same CALD service in each city and town, which is not economically viable.

Second, the present results also indicate iCBT may be effective for a broad age range, including older Arab adults (i.e., 60+ years). Notwithstanding the documented barriers relating to computer literacy experienced by older adults (Kontos et al., 2014; Levy et al., 2015) and the need for replication with larger samples sizes to confirm generalisability, the present results are consistent with emerging evidence about the

acceptability and efficacy of iCBT programs for older adults in Western populations (Dear, Zou, Ali, Lorian, Johnston, Sheehan, et al., 2015; Titov, Dear, Ali, et al., 2015), and indicate the potential of Internet-delivered treatments for older adults of a CALD background.

A third implication of the present results relates to the observation that 70% (7/10) of participants who completed the follow-up questionnaires in Study 6 reported reading both English and Arabic language versions of the Arabic Wellbeing Course. Advantages reported by participants of having the course materials presented in both languages included improved understanding of the content of the intervention, particularly for unfamiliar psychological terms, improved understanding of the experience of psychological difficulties, and enhancing the teaching of practical skills in managing symptoms of anxiety and depression. Thus, presenting iCBT in two languages (English and the language of the CALD group) should be considered when disseminating translated online and face-to-face mental health services to Arab and other CALD communities living in Western countries.

Fourth, the results of Study 5 indicate the potential of self-guided versions of iCBT in increasing access to Arab and other CALD people both in Australia and in other countries. Notwithstanding the higher attrition rates, the anonymity offered by the self-guided version of iCBT potentially allows greater access to mental health services in countries where face-to-face services may not be available or if they are available, people are unable or unwilling to access them. It also raises the potential of stepped-care models of online intervention, which maximise efficient use of scarce resources (Bower & Gilbody, 2005; National Institute for Health and Clinical Excellence, 2009a; van Straten et al., 2015). For example, and if appropriate, the majority of patients in a stepped

care iCBT service could initially receive access to self-guided iCBT, but then step up to clinician-guided iCBT as clinically required. This is beneficial in the delivery of services for CALD communities given the limited number of culturally appropriate services and qualified CALD clinicians.

Fifth, the results of studies 4 to 6 provide further evidence of the applicability of the PHQ-9 and GAD-7 outcome measures for Arab populations. These measures are brief, widely used, and translated in several languages and could be readily used for any future dissemination of iCBT with Arab and other CALD populations.

An additional and significant implication for dissemination was that despite employing a broad range of recruitment strategies, a major challenge throughout studies 4, 5 and 6 was the very low uptake of Internet-delivered treatment. This indicates that, although iCBT may be a feasible treatment option for Arab people, there are much broader issues that may need to be considered in any efforts to reduce the burden of common mental health difficulties. For example, the well documented conflict in many parts of the Middle East indicates that for these Arab populations survival and not mental health may be the priority. Another factor affecting uptake may be the novelty of iCBT. Many Arab people may be unsure about this novel and unfamiliar approach of iCBT and may not trust the privacy of online services, and anxious about the risk that information about them may be disclosed and result in them being stigmatised by their communities. Consequently, mental health literacy programs about online services could be developed to address these barriers.

The results of Study 3 also indicate the importance of re-examining recruitment strategies and adopting evidence-based frameworks for promoting and increasing uptake of mental health services. Consistent with previous literature about FB (e.g., Loxton et

al., 2015; Ünlü Ince et al., 2014), the results of Study 3 suggest that FB recruited participants at a faster rate than traditional methods, can be used to provide information about mental health and could also increase the recruitment of Arab populations to mental health treatment research. However, only 2% (81/3858) of those that visited our website applied to participate in Study 5. It is not clear why the conversion rate of visitors to applicants was so low, and this is an important question for future research. However, these results do indicate that at this time, sole reliance on FB is not recommended and finding an optimal combination of traditional and new recruitment strategies that provides good information about psychological symptoms and interventions for Arab and other CALD groups is required to increase uptake of mental health services.

## **8.5 Limitations**

Notwithstanding their contributions to the existing literature about the mental health of Arab populations, the studies in this thesis have several methodological and conceptual limitations. First, despite considerable promotional efforts, all of the studies in the current studies rely on relatively small convenience samples. This means that significant caution is needed in the interpretation and generalisation of the findings of the current studies. For example, in the clinical trials it limits confidence in the generalisability of results and limits our ability to conduct analyses that could identify moderators of treatment outcomes, such as acculturation and educational attainment levels. This finding does not mean that people of lower educational attainment or acculturation levels would not respond in similar ways to the survey questions or the iCBT intervention. However, it indicates the need for replication with samples with

broader characteristics than captured in this thesis. In addition, future replication should target three or four specific Arab populations as opposed to the overly-ambitious aim of the current thesis, which attempted to examine the psychological distress and iCBT treatment efficacy of Arabs worldwide. Importantly, the results reported in this thesis were replicated across studies within this thesis and were also consistent with relevant literature relating to CBT treatment and prevalence of symptoms, thus increasing confidence in the validity of the reported results.

Second, the current thesis relied on single-group open-trials to evaluate the feasibility of iCBT and the absence of controls groups across the studies means that it is not possible to rule the general effects of time or to conclude the observed changes were the result of the treatment provided. The use of open trial designs was required due to the difficulties with recruitment experienced during the current studies which precluded the use of larger controlled trial designs. However, the limitations of interpreting results from these open trial designs are mitigated by several factors including the significant chronicity of participants in Study 5 and 6 indicating that the likelihood of spontaneous remission was low, and the pattern of observed results closely reflecting those obtained by previous randomised controlled trials of iCBT in non-Arab populations. Moreover, it should be noted that there are important and documented benefits of single-group proof-of-concept studies (Leon, Davis, & Kraemer, 2011). Notwithstanding this limitation, the positive and consistent results obtained in the open trial indicate that larger trials are warranted.

Third, another methodological limitation concerns the use of one clinician across the three open trials (Studies 4-6), which makes it difficult to rule out that treatment effects were due to the clinician. However, as previously indicated, iCBT interventions

are highly protocolised, and are associated with high treatment fidelity. The structured and relatively fixed nature of the content ensures that patients are given the same information and taught the same skills to manage psychological symptoms (Titov, 2011). Consistent with this, recent studies which have utilised multiple clinicians have not found differences in treatment effects between clinicians (Almlöv, Carlbring, Berger, Cuijpers, & Andersson, 2009; Almlöv et al., 2011).

Fourth, an additional methodological limitation is that index of clinical significant remission and deterioration used in the current was not the gold-standard when considering the reliability of change. However, research on the PHQ-9 has found a moderate level of agreement in the reliability of change between the gold-standard clinical diagnostic interview and index of remission and deterioration, with the latter recommended as the best option when the gold-standard is not used (McMillan, Gilbody, & Richards, 2010).

A final methodological limitation is that Studies 4 to 6 did not test levels of cultural adaptation. Thus, although these results provide indirect support for the SDTAF model of adaptation, they did not directly test this model against a comparator. Hence, conclusions about the utility or effect of this model of adaptation on variables such as acceptability and outcomes cannot be made.

An important conceptual limitation of the studies in this thesis is the use of a simplified operational definitions of *Arab people*, *Arab world*, and *Arab Diaspora* as a recognisable and unified group. In this thesis, Arab people were defined by virtue of geographical location and/or self-identity. However, this definition, although pragmatic, may neglect potentially important aspects of different Arab populations (Castro, Barrera,



& Holleran Steiker, 2010). Importantly, although limited, this definition appeared sufficient for the purposes of the studies in this thesis.

## **8.6 Future Research**

To address the limitations and gaps identified in the current thesis, future research could: (a) target Arab and CALD populations in the next Australian National Health Survey, (b) replicate the studies with a more representative sample of Arab populations and examine what moderates the discrepancy between high acceptability and low uptake of Internet-delivered treatment among Arab populations, (c) attempt to address the difficulty in recruitment to research on mental health treatment, and (d) test moderators of change in cultural adaptation research.

Larger and more representative samples in future surveys and clinical trials is required to provide more accurate estimates of the prevalence of mental disorders and to further validate the efficacy of iCBT among Arab populations. For example, in the next Australian National Health Survey scheduled for 2017, Arab and CALD people could be targeted to yield more accurate estimates of prevalence rates of anxiety and depressive disorders. In addition, a replication and extension of Study 1 could include an examination of what moderates the discrepancy found between high acceptability and low uptake of mental health services, including online services among Arab populations. There are several factors that may moderate this relationship, which include attitudinal, structural and cultural-specific barriers to seeking treatment (Gearing et al., 2012; Kayrouz et al., 2014). However, there may be facilitators that increase uptake of mental health services which could be identified from this research. Second, a replication of Study 2, targeting individual Arab countries would significantly contribute to what is

known about the mental health of people in different Arab countries. Finally, the results of Studies 4 to 6 could be extended using RCT designs, larger samples, and active control conditions, and this would significantly increase our understanding of the potential of iCBT for Arab people.

Another critical area for future research is addressing the low participation rate in mental health treatment research by Arab people. Despite the interest generated via FB, only approximately 20% of the target sample was achieved in Study 3 indicating the need to find other recruitment strategies. As indicated in Study 1, barriers relating to the novelty and unfamiliarity of iCBT may have made Arab people reluctant to participate in Internet-delivered treatment. Thus, future research could develop mental health literacy educational programs that provide information about symptoms, mental health treatment research and the availability of culturally appropriate and confidential face-to-face and online services. For example, an Australian evidence-based mental health literacy intervention, Mental Health First Aid (MHFA), has been translated into several languages and successfully used in 21 countries with over 1 million people trained (Mental Health First Aid International, 2015). The course is delivered at the community level by adults taught to assist other adults who are experiencing mental health crisis until professional help is available. Evidence suggests participation in the MHFA course improves the mental health literacy of participants, including CALD populations (Jorm, Kitchener, Fischer, & Cvetkovski, 2010; Kitchener & Jorm, 2008). Future research could examine the benefits of integrating information about current online and face-to-face mental health research into the MHFA Course and provide another avenue for recruitment.

Future research is also required to empirically examine the various theories and models of cultural adaption which have, to date, received very limited empirical examination. One of the major consequences of having so many theories and models, without empirical data is that clinicians lack guidance about evidence-based models to inform their clinical practice. Thus, the lack of consensus amongst several models may result in clinicians not having a clear sense of what cultural dimensions need targeting when adapting their intervention. There are several ways in which the various theories and models can be examined and evaluated. One approach would be to directly compare the relative acceptability and efficacy of an adapted and non-adapted iCBT intervention. However, other options include: (1) comparing the same treatment protocol with different levels of adaptation range from none to surface-level adaptation to deeper-level cultural adaptation; and (2) patient preference studies, where the option of adapted and non-adapted treatments are made available to patients. This approach of running a series of trials to understand the moderators of change in cultural adaptation research may help provide a more unified approach to a field that has over 20 models and give clinicians and researchers a better understanding of the evidence-based cultural dimensions to target when adapting interventions.

## **8.7 Conclusion**

The three primary aims of this thesis were achieved. First, the studies in this thesis have contributed to our knowledge and understanding of the psychological distress of Arab people. Specifically, the results of the surveys (Studies 1 and 2) indicate high levels of psychological distress, several common and cultural-specific barriers, low utilisation rates and moderate to high acceptability of face-to-face and online services

amongst Arab people. Second, the results of Study 3 indicate that FB has potential as an innovative recruitment strategy for increasing participation of hard-to-reach populations to mental health research, but that other strategies are also required. Third, the results of the open trials (Studies 4 - 6) indicate the potential of clinician-guided and self-guided versions of iCBT as efficacious and acceptable interventions for the treatment of anxiety and depression among Arab populations. In conclusion, the studies comprising this thesis support the potential of iCBT as a strategy for increasing access to mental health services by Arab and potentially other CALD populations.

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## 10.0 Appendix A: Ethics Approval

4/19/2016

Macquarie University Student Email and Calendar Mail - Approved- Ethics application- Titov (Ref: 5201200460)



**MACQUARIE**  
University

RONY KAYROUZ <rony.kayrouz@students.mq.edu.au>

### Approved- Ethics application- Titov (Ref: 5201200460)

*Study 1*

1 message

**Ethics Secretariat** <ethics.secretariat@mq.edu.au>

Thu, Jul 19, 2012 at 11:42 AM

To: A/Prof Nick Titov <nick.titov@mq.edu.au>

Cc: Rony Kayrouz <rony.kayrouz@students.mq.edu.au>

Dear A/Prof Titov

Re: "An Internet survey of emotional well-being, help-seeking behaviours and barriers to accessing treatment among Arab Australians" (Ethics Ref: 5201200460)

Thank you for your recent correspondence. Your response has addressed the issues raised by the Human Research Ethics Committee and you may now commence your research.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

[http://www.nhmrc.gov.au/\\_files\\_nhmrc/publications/attachments/e72.pdf](http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf).

The following personnel are authorised to conduct this research:

A/Prof Nick Titov  
Dr Blake Dear  
Mr Luke Johnston  
Rony Kayrouz  
Roy Laube

**NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL EMAIL TO SUBMIT WITH YOUR THESIS.**

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).
2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 19 July 2013  
Progress Report 2 Due: 19 July 2014  
Progress Report 3 Due: 19 July 2015  
Progress Report 4 Due: 19 July 2016  
Final Report Due: 19 July 2017

NB. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/forms](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms)

<https://mail.google.com/mail/u/0/?ui=2&ik=58d61213c7&view=pt&q=5201200460&qs=true&search=query&th=1389ce685f5cadd9&siml=1389ce685f5cadd9> 1/2

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/forms](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms)

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

<http://www.mq.edu.au/policy/>

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/policy](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy)

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have final approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

Please retain a copy of this email as this is your official notification of final ethics approval.

Yours sincerely  
Dr Karolyn White  
Director of Research Ethics  
Chair, Human Research Ethics Committee



10 December 2014

Professor Nikolai Titov  
Centre for Emotional Health  
Department of Psychology  
Faculty of Human Sciences  
Macquarie University  
NSW 2109

Dear Professor Titov

Reference No: 5201400971 (study a)

**Title:** A survey on the emotional wellbeing, help-seeking behaviours and openness to accessing internet-delivered treatment in Arabs worldwide

Thank you for submitting the above application for ethical and scientific review. Your application was considered by the Macquarie University Human Research Ethics Committee (HREC (Medical Sciences)) at its meeting on 30 October 2014 at which further information was requested to be reviewed by the Ethics Secretariat.

The requested information was received with correspondence on 27 November 2014.

I am pleased to advise that ethical and scientific approval has been granted for this project to be conducted at:

- Macquarie University

This research meets the requirements set out in the *National Statement on Ethical Conduct in Human Research* (2007 – Updated March 2014) (the *National Statement*).

**Details of this approval are as follows:**

**Approval Date:** 10 December 2014

The following documentation has been reviewed and approved by the HREC (Medical Sciences):

| Documents reviewed  | Version no. | Date                |
|---|-------------|---------------------|
| Macquarie University Ethics Application Form and Appendix B: Research to be Taken Outside Australia | 2.3         | July 2013           |
| Correspondence from Mr Kayrouz responding to the issues raised by the HREC (Medical Sciences)       |             | Received 27/10/2014 |
| MQ Participant Information and Consent Form (PICF)  | 1           | 07/10/2014          |
| Participant Questionnaire   |             |                     |

This letter constitutes ethical and scientific approval only.

**Standard Conditions of Approval:**

1. Continuing compliance with the requirements of the *National Statement*, which is available at the following website:

<http://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research>

2. This approval is valid for five (5) years, subject to the submission of annual reports. Please submit your reports on the anniversary of the approval for this protocol.

3. All adverse events, including events which might affect the continued ethical and scientific acceptability of the project, must be reported to the HREC within 72 hours.

4. Proposed changes to the protocol must be submitted to the Committee for approval before implementation.

It is the responsibility of the Chief investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.

Should you have any queries regarding your project, please contact the Ethics Secretariat on 9850 4194 or by email [ethics.secretariat@mq.edu.au](mailto:ethics.secretariat@mq.edu.au)

The HREC (Medical Sciences) Terms of Reference and Standard Operating Procedures are available from the Research Office website at:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics)

The HREC (Medical Sciences) wishes you every success in your research.

Yours sincerely



**Professor Tony Evers**

Chair, Macquarie University Human Research Ethics Committee (Medical Sciences)

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research* (2007) and the *CPMP/ICH Note for Guidance on Good Clinical Practice*.





23 January 2014

Associate Professor Nikolai Titov  
Department of Psychology  
Faculty of Human Sciences  
Macquarie University  
NSW 2109

Dear Associate Professor Titov

RE: *A Randomized Controlled Trial (RCT) of Self-Guided Internet-Delivered Education for Adults of an Arabic Speaking Background with Symptoms of Anxiety or Depression*

Thank you for your correspondence dated 2 November 2013 responding to the issues raised by the Macquarie University Human Research Ethics Committee (HREC (Medical Sciences)) in its review of your application at its meeting held on 24 October 2013.

The HREC (Medical Sciences) Executive considered your responses out of session and granted ethical and scientific approval of the above application. This research meets the requirements set out in the *National Statement on Ethical Conduct in Human Research* (2007).

Details of this approval are as follows:

Reference No: 5201300657

(study 5)

Approval Date: 17 January 2014

**This letter constitutes ethical and scientific approval only.** This project cannot proceed until separate research governance authorisation has been obtained from the Institution. Please contact the Research Governance Manager on 9850 4446 for further information.

The following documentation has been reviewed and approved by the HREC (Medical Sciences):

| Document  | Version | Date                |
|---|---------|---------------------|
| National Ethics Application Form application entitled <i>A Randomized Controlled Trial (RCT) of Self-Guided Internet-Delivered Education for Adults of an Arabic Speaking Background with Symptoms of Anxiety or Depression</i> | 2.0     | Received 13/09/2013 |
| Clinical Protocol entitled <i>A Randomized Controlled Trial (RCT) of Self-Guided Internet-Delivered Education for Adults of an Arabic Speaking Background with Symptoms of Anxiety or Depression</i>                            | 2.0     | 01/11/2013          |
| PHQ-9: Patient Health Questionnaire – Nine Item (Kroenke, Spitzer & Williams)   |         | 2011                |

|   |   |                        |
|---|---|------------------------|
| GAD-7: Generalised Anxiety Disorder 7 Item Scale (Spitzer, Kroenke, Williams and Lowe)  |   | 2006                   |
| Things You do Questionnaire (developed by the researchers)  |   |                        |
| Sheehan Disability Scale (SDS)  |   |                        |
| Ethnic Identity Scale (EIS; Phinney and Ong)  |   | 2007                   |
| Stephenson Multigroup Acculturation Scale (SMAS; Stephenson)  |   | 2000                   |
| Transcultural Acculturation Scale (developed by the researchers)  |   |                        |
| Macquarie University Participant Information and Consent Form entitled <i>The Wellbeing Course (Arabic Speaking Background)</i>   | 2 | 07/11/2013             |
| Macquarie University eCentreClinic Advertisement entitled <i>A Free Internet-Delivered Education Course to Strengthen Emotional Health in Adults of an Arabic Speaking Background (18+)</i> |   | Undated                |
| Correspondence from Co-Investigator Mr Rony Kayrouz (x2)  |   | 7/11/2013 & 16/01/2014 |

**Please ensure that a version number and date is included on all documentation.**

**Standard Conditions of Approval:**

1. Continuing compliance with the requirements of the *National Statement*, which is available at the following website:

<http://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research>

2. Approval is for five (5) years, subject to the submission of annual reports.

**First Annual Report Due:** 1 February 2015.

3. All adverse events must be reported to the HREC within 72 hours.

4. Proposed changes to the protocol must be submitted to the Committee for approval before implementation.

It is the responsibility of the Chief investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.

Please do not hesitate to contact the Ethics Secretariat should you have any questions regarding your ethics application.

8 August 2014

Professor Nick Titov  
Department of Psychology  
Faculty of Human Sciences

Dear Professor Titov

RE: *A Randomized Controlled Trial (RCT) of Self-Guided Internet-Delivered Education for Adults of an Arabic Speaking Background with Symptoms of Anxiety or Depression (Ref: 5201300657)*

Thank you for your correspondence dated 29 July 2014 submitting an amendment request to the above study. The Human Research Ethics Committee (HREC) (Medical Sciences) delegated review of these changes to the HREC (Medical Sciences) Executive.

I am pleased to advise that ethical approval of the following amendments to the above study has been granted:

1. Amendment of the trial protocol to a large single-group open trial by removal of the Standard Wellbeing Course Group and the Control Group.

This research meets the requirements set out in the *National Statement on Ethical Conduct in Human Research* (2007 – Updated March 2014) (the *National Statement*). This letter constitutes ethical and scientific approval only.

**Details of this approval are as follows:**

**Reference No:** 5201300657

**Approval Date:** 5 August 2014

The following documentation submitted with your email correspondence has been reviewed and approved by the HREC (Medical Sciences):

| Documents reviewed  | Version no. | Date                   |
|---|-------------|------------------------|
| Macquarie University HREC Request for Amendment Form  | 2.0         | Received<br>29/07/2014 |
| Participant Information & Consent Form  | 4           | 5/08/2014              |
| Protocol entitled <i>A Trial of Self-Guided Internet-Delivered Education for Adults of an Arabic speaking background With Symptoms of Anxiety or Depression</i> | 3           | 28/07/2014             |

The HREC (Medical Sciences) Terms of Reference and Standard Operating Procedures are available from the Research Office website at:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics)

Please do not hesitate to contact the Ethics Secretariat should you have any questions regarding your ethics application.

The HREC (Medical Sciences) wishes you every success in your research.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Tony Evers', with a stylized flourish at the end.

**Professor Tony Evers**

Chair, Macquarie University Human Research Ethics Committee (Medical Sciences)

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research* (2007) and the *CPMP/ICH Note for Guidance on Good Clinical Practice*.



Matthew Terides <[matthew.terides@mq.edu.au](mailto:matthew.terides@mq.edu.au)>

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**Approved- Ethics application- Titov (Ref No: 5201200603)**

*study 4*

2 messages

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**Ethics Secretariat** <[ethics.secretariat@mq.edu.au](mailto:ethics.secretariat@mq.edu.au)>

Mon, Aug 27, 2012 at 10:49 AM

To: A/Prof Nick Titov <[nick.titov@mq.edu.au](mailto:nick.titov@mq.edu.au)>

Cc: Dr Blake Dear <[blake.dear@mq.edu.au](mailto:blake.dear@mq.edu.au)>, Mr Luke Johnston <[luke.johnston@mq.edu.au](mailto:luke.johnston@mq.edu.au)>, Mr Matthew Terides <[matthew.terides@mq.edu.au](mailto:matthew.terides@mq.edu.au)>, Rony Kayrouz <[rony.kayrouz@students.mq.edu.au](mailto:rony.kayrouz@students.mq.edu.au)>

Dear A/Prof Titov

Re: "An open trial of guided iCBT intervention to determine the benefits of the Emotional Wellbeing Course for Arab Australians with symptoms of anxiety and depression" (Ethics Ref: 5201200603)

The above application was reviewed by the Human Research Ethics Committee at its meeting on 24-Aug-12. Final Approval of the above application is granted, effective 27 August 2013, and you may now commence your research.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

[http://www.nhmrc.gov.au/\\_files\\_nhmrc/publications/attachments/e72.pdf](http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf).

The following personnel are authorised to conduct this research:

A/Prof Nick Titov  
Dr Blake Dear  
Mr Luke Johnston  
Mr Matthew Terides  
Rony Kayrouz

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).
2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 27 August 2013  
Progress Report 2 Due: 27 August 2014  
Progress Report 3 Due: 27 August 2015  
Progress Report 4 Due: 27 August 2016  
Final Report Due: 27 August 2017

NB. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/)

[human\\_research\\_ethics/forms](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms)

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/forms](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms)

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

<http://www.mq.edu.au/policy/>

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/policy](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy)

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have final approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

Please retain a copy of this email as this is your official notification of final ethics approval.

Yours sincerely  
Dr Karolyn White  
Director of Research Ethics  
Chair, Human Research Ethics Committee

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**Luke Johnston** <[luke.johnston@mq.edu.au](mailto:luke.johnston@mq.edu.au)>  
To: Matthew Terides <[matthew.terides@mq.edu.au](mailto:matthew.terides@mq.edu.au)>

Mon, Aug 27, 2012 at 1:45 PM

Hi Matt,

Could you please file this appropriately?

Thanks,  
Luke

Dr Luke Johnston  
Psychologist / Operations Manager  
Centre for Emotional Health  
Department of Psychology, W6B 152  
Macquarie University NSW 2109

21 January 2015

Professor Nikolai Titov  
Department of Psychology  
Faculty of Human Sciences  
Macquarie University  
NSW 2109

Dear Professor Titov

Reference No: 5201200603

(study 6)

**Title:** An open trial of guided iCBT intervention to determine the benefits of the Emotional Wellbeing Course for Arab Australians with symptoms of anxiety and depression

Thank you for your correspondence dated 8 January 2015 submitting an amendment request to the above study. Your proposed amendment was reviewed and approved by the Human Research Ethics Committee (HREC (Medical Sciences)) Executive at its meeting held on 19 January 2015.

I am pleased to advise that ethical approval has been granted to the following amendments to the study:

1. The Arabic Wellbeing Course will be provided in Arabic alongside the approved English version of the course. All materials will be provided to participants in both Arabic and English. Further interviews and weekly clinician contact will be available in both Arabic and English and provided by Mr Rony Kayrouz.
2. The inclusion of culturally appropriate mental health services (e.g. Transcultural Mental Health Centre; TMHC) will be included on the list of services to contact if participants become very distressed during the trial.

**Details of this approval are as follows:**

The following documentation submitted with your email correspondence has been reviewed and approved by the HREC (Medical Sciences):

| Documents reviewed   | Version no. | Date       |
|--|-------------|------------|
| Macquarie University HREC Request for Amendment Form   | 2.0         | Received   |
| Participant Information & Consent Form   | 2.0         | 9/01/2015  |
| Research Protocol  | 2.0         | 6/01/2015  |
| Sample of the eCentreClinic Arabic Wellbeing Facebook fan-page and the eCentreClinic Social Media Policy | 1.0         | 14/05/2014 |
| Validated Arabic versions of outcome measures  |             |            |

The HREC (Medical Sciences) Terms of Reference and Standard Operating Procedures are available from the Research Office website at: