

ABSTRACT

A Nationally Representative Survey of Depression Symptoms among Jordanian
Adolescents: Associations with Depression Stigma, Depression Etiological Beliefs, and
Likelihood to Seek Help for Depression

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Abstract

Problem and Purpose: Arab adolescents are considered a particularly vulnerable population to depression. The substantial lack of mental health services and the stigma associated with mental illness on the one hand; and poverty, unemployment, and lack of reasonable hopes for a decent future in the context of corruption of regimes and perceived social injustice on the other, call for establishing committed and effective policies to tackle depression and its associated stigma among Arab adolescents at risk for or diagnosed with depression. However, there is a substantial lack of research that can inform the current profile of adolescent depression in the Arab region. We conducted two systematic reviews on Adolescent depression and mental illness stigma in the Arab region and found that there is currently no solid evidence available on the prevalence of depression among Arab adolescents and its potential associations with depression stigma and help-seeking beliefs and intentions. This gap in the literature makes it difficult to design, implement, and disseminate effective interventions to improve the prevention, diagnosis, and treatment of adolescent depression. Therefore, the overarching purpose of this study was to estimate a prevalence of depression symptoms among Arab adolescents, and determine relationships with depression stigma, depression etiologic beliefs, and likelihood to seek help for depression.

Methods: This study was conducted in Jordan, a Middle Eastern Arab country. A pilot study with a sample of 88 Jordanian adolescents was first conducted to assess the feasibility of collaboration and coordination with the proposed recruitment sites; assess proposed recruitment strategies; confirm the utility of the translated self-reported measures and examining their psychometric properties; and obtaining preliminary findings. Based on the lessons learned from this pilot study, we designed a nationally representative, school-based survey. Data were collected from 2,349 adolescents aged 12-

17, using a packet of self-administered questionnaires that included measures on sociodemographic and health history, depression severity, depression stigma, depression etiologic beliefs, and likelihood to seek help for depression. A passive consenting procedure was used to obtain parental consents, while returning the survey questionnaires was considered a tacit assent for the adolescents. The study obtained the needed Institutional Review Board approvals from both Duke University and the University of Jordan. Participants represented all three regions in the country, with 34% from the northern (suburban) region, 43% from the central (urban) region, and 23% from the southern (rural) region.

Results: The majority of the adolescents were females (59%) and 15-17 years old (67%). Almost 14% reported having at least one chronic health problem, 15% reported having a mental health problem, 25% reported having academic difficulties, 8% reported that they had received a psychiatric diagnosis, and 22% reported that they had sought psychological help at some point in the past. The mean total depression score was 16.3 (SD=11.2, 95% CI=15.8 to 16.7), with 34% of the sample reporting moderate to severe depression. Depression was significantly higher among respondents who were female, ages 14-15 years, and living in families with monthly incomes less than JD300 (USD 423); and who reported having a chronic health problem, mental health problem, learning difficulty, a psychiatric diagnosis and/or seeking previous psychological help. Adolescents endorsed multiple etiological factors for depression. The most often reported factors were stressful events in one's life (72%), social factors (65%), and one's weak will (56%). On the other hand, the least reported factors were genetic or inherited problems (24%), chemical imbalance (30%), and punishment for wrong doings (35%). Adolescents were more likely to seek help for depression from a family member (57%), followed by a counselor (46%), psychiatrist (43%), religious leader (39%), and general practitioner (28%). In addition, 53% of the adolescents reported they will be willing to

take medications for depression, while 50% expressed willingness to seek a therapy, and 25% of the adolescents reported they will not be willing to seek any professional help for depression. Almost half of the adolescents agreed on items that reflect stigmatizing attitudes towards depression. Adolescents reported higher rates of perceived depression stigma than personal depression stigma. Depression stigma was not significantly associated with the adolescent's severity of depression, but with adolescent's sex, age, region of residence, parents' education, and history of mental health problem.

Conclusions: This study revealed alarming results in terms of the current high prevalence and social determinants of adolescent depression in Jordan. The study also shed light on how depression stigma manifests among Jordanian adolescents and how such stigma relates to their beliefs about depression and likelihood to seek professional psychological help. We discuss how healthcare providers, researchers, and educators can focus attention on developing effective and culturally appropriate screening, prevention, and intervention approaches using evidence-based guidelines to promote Jordanian adolescent mental health, particularly for depression. This approach will be important not only for Jordan, but for all of the Arab region, given that many of the Arab countries have been witnessing years of mass violence, armed conflicts, and war. The study also provides important recommendations on when, how, and why to utilize school settings for anti-depression stigma interventions. Overall, findings from this study provide a solid, culturally competent foundation from which to conduct future research to tackle depression and its associated stigma, and reflect the unique characteristics of Arab culture.

Dedication

*To my parents!
Who have always given me the strength to reach for the stars and chase my dreams,,,
Whose love, support, patience, and guidance made this work possible,,,
Artists you are! I am forever grateful to you!*

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1. Introduction

By the year 2020, depression will be the second leading cause of disability worldwide (WHO, 2001a), and by 2030 it will be the largest contributor to global disease burden (WHO, 2008). Depression in adolescence is a highly prevalent waxing and waning disorder that predicts long-term depression and is likely to derail adolescents' emotional, cognitive, and social development (Angold & Costello, 2001; Thapar, Collishaw, Pine, & Thapar, 2012). Up to 25% of adolescents experience at least one major depressive episode by age 18. However, only 20% of adolescents with depression seek treatment, and fewer than 40% of those who receive treatment are adherent (WHO, 2005a). Adolescents who experience depression and do not receive proper treatment are at increased risk of substance abuse, early pregnancy, low educational attainment, violence, legal problems, recurrent depression, and poor long-term health (National Institute of Mental Health, 2014).

The Arab region has one of the largest proportions of adolescents compared to other parts of the world (Assaad & Roudi-Fahimi, 2010). One out of every five persons in the Arab region is between 15–24 years old and more than half of the population is below the age of 25 [United Nation (UN), 2011]. Unfortunately, available projections suggest that substantial percentages of Arab adolescents are expected to face a rapid increase in depression rates due to several economic, social, cultural, and political reasons (Amawi et al., 2014; Obermeyer, 2015; Okasha, Karam, & Okasha, 2015; Patel &

Kleinman, 2003; Saxena, Thornicroft, Knapp, & Whiteford, 2007; UN, 2011). Many Arab adolescents are increasingly exposed to negative major life events due to the recent spread of political instability and upheaval and serious armed conflicts and violence (Amawi, Mollica, Lavelle, Osman & Nasir, 2014; Karam et al., 2008). Unfortunately, Arab countries are considered among the least well-prepared regions to deal with such a critical mental health issue. The mental health infrastructure and services in most Arab countries are grossly insufficient, and the budget allowed for mental health is far below the range to promote mental health services and meet the large and growing mental health needs (Okasha, Karam, & Okasha, 2015). Furthermore, the stigma of mental illness is still a primary barrier to seeking professional psychological help, delaying receiving the proper diagnosis treatment, worsening symptoms, and often bringing greater stigmatization (Eaton et al., 2011; Dardas & Simmons, 2015; Gearing et al., 2013).

Arab adolescents are considered a particularly vulnerable population to depression (Dardas, Bailey, & Simmons, 2016). Thus, it is imperative to establish effective policies to tackle depression and its associated stigma among Arab adolescents at risk for or diagnosed with depression. However, the lack of research that can inform the current profile of adolescent depression in the region makes it difficult to design, implement, and disseminate effective interventions to improve the prevention, diagnosis, and treatment of adolescent depression (Obermeyer, 2015; WHO, 2005b).

1.1 Background

1.1.1 The Arab Region

Arabs are defined by their genealogical, linguistic, and cultural grounds, and not by race. There are 22 Arab countries that are religiously and ethnically homogenous with Islam being the dominant religion, and more than 90% of Arabs identifying as Muslims (Nydell, 2005). The Arab region covers an area of 5.25 million square miles. Arab people have one of the world's highest rates of population growth and they constitute a significant and growing population in countries including Australia, Canada, France, Britain, and the United States. The population living in Arab countries has nearly tripled over the past 40 years, increasing from 128 million in 1970 to nearly 359 million in 2010 (Mirkin, 2010). The continued population growth in the region is expected to result in an unprecedented number of young people, with a total of 190 million of children and youth in 2010 climbing up to 217 million by 2050 (UN, 2011).

In Arab culture, the family rather than the individual is the core of the community. Family relationships are built on respect and privacy. Young individuals are socialized to respect their elders, be loyal to their family, and to obey their parents (Dhami & Sheikh, 2008). Elderly parents are valued and respected for their life experiences, wisdom, and hierarchical position within the family. Extended family is also a common phenomenon and it entails providing possible economic benefits and helping in children's rearing and elderly caregiving (Ahmad & Dardas, 2015). Arab

youth tend to view family and religion as powerful anchors of their identity and their ability to navigate the future. However, some researchers argue that increased access to the Internet and social media might have led to a divide between the younger and older generations in terms of values, ideals, and modes of communication (Khoury & Lopez, 2011).

1.1.1.1 Adolescent health

Of the 1.4 million annual death cases occur among adolescents, 97% occur in low and middle-income countries (Patton et al., 2012). According to the Institute for Health Metrics and Evaluation (IHME, 2013), the deaths among adolescents in the Arab countries are contributed mainly by cardiovascular / circulatory diseases and transport injuries. Other causes of death include cancer, diabetes, infections, and unintentional injuries (Figure 1). The main adolescent health risk factors reported in the Arab literature include malnutrition (particularly in low-income countries and countries experiencing humanitarian crises), overweight and obesity (across different socioeconomic groups within each country), tobacco use, violence, and motor vehicle accidents caused by violation of traffic laws (Jaffer et al., 2006; Ng et al., 2011).

On the other hand, mental and behavioral problems among adolescents in the Arab region are considered the number one cause of DALYs (disability-adjusted life years), which take into account the number of years lost to both premature mortality and to disability. As seen in Figure 2, mental and behavioral disorders contribute to nearly

25% of DALYs in the region, considerably higher than their contribution at the global level. These data underscore the fact that the burden of disease in the Arab region has largely shifted away from communicable and maternal causes, towards non-communicable chronic causes (Obermeyer, 2015).

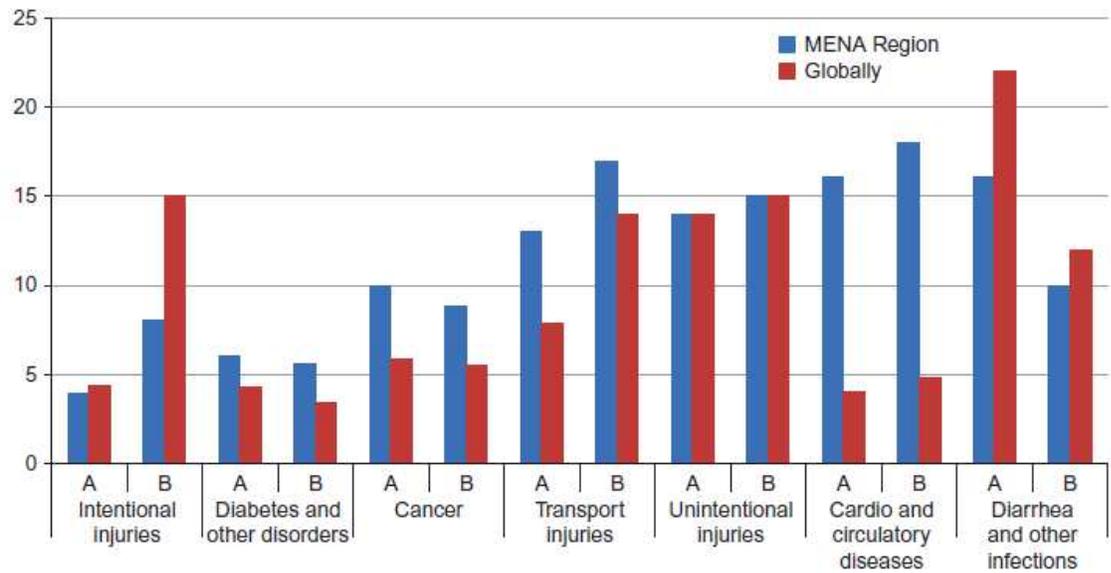


Figure 1: Major causes of death among adolescents 10-14 years (A) and 15-19 years (B) in the Arab region.

Source: Institute for Health Metrics and Evaluation (IHME, 2013). The global burden of disease: generating evidence, guiding policy. Seattle, WA, USA. MENA: Middle East and North Africa region, is the term used by the Burden of Disease Project, which includes all Arab countries.

While data on mental health in the Arab region are scattered (Obermeyer, 2015), the IHME (2013) projected that depression, anxiety and behavioral problems are the most prevalent mental health problems among Arab adolescents, with higher rates in regions of armed conflict and displacement, such as Iraq, Lebanon, and Palestine (Figure 3).

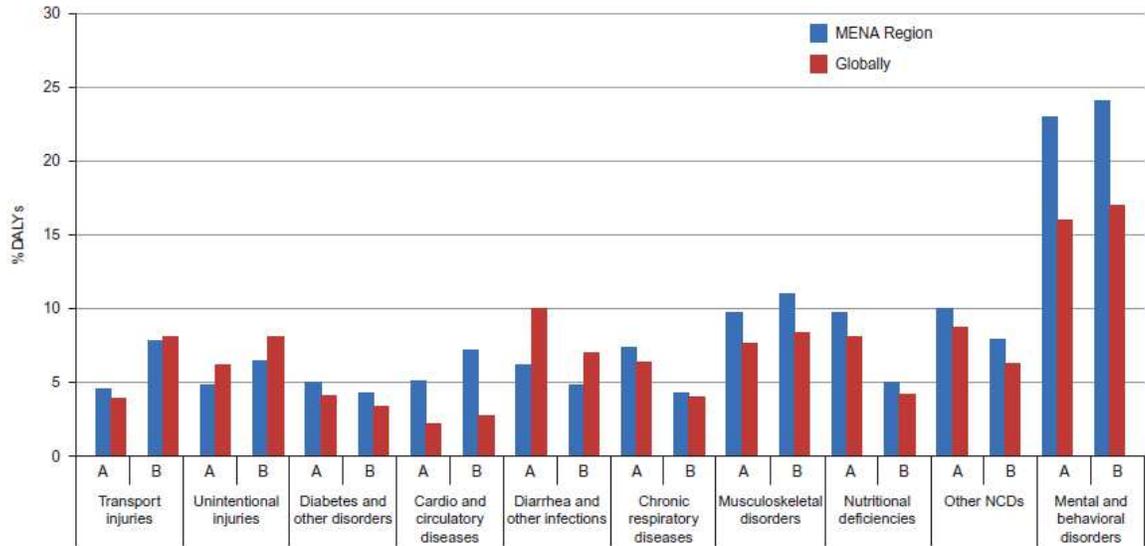


Figure 2: Main causes of DALYs (disability-adjusted life years) among adolescents 10-14 (A) and 15-19 (B) in the Arab region (percent of DALYs)

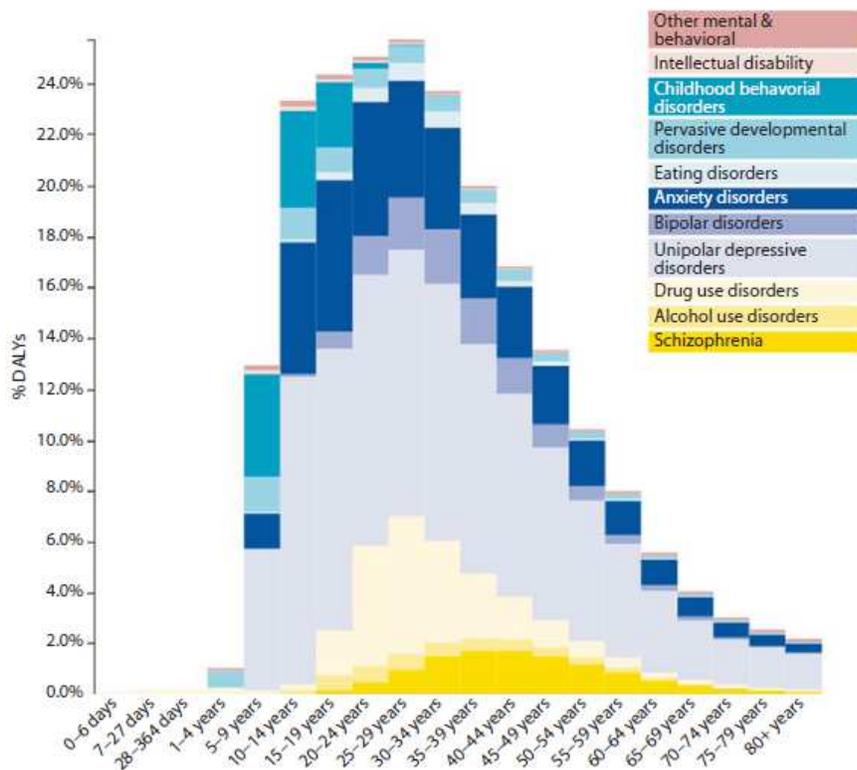


Figure 3: Percent of DALYs attributed to mental and behavioral causes in the Arab region.

Source: Institute for Health Metrics and Evaluation (IHME, 2013). The global burden of disease: generating evidence, guiding policy. Seattle, WA, USA

1.1.1.2 Social determinants of adolescent health

Reviews of the social context of adolescents in the Arab region have highlighted that structural determinants, including poverty and unemployment, political and military conflicts, and changing family environments, are the strongest determinants of Arab adolescents' mental health (Assaad & Roudi-Fahimi, 2007; UNDP, 2009; UNICEF, 2013). The Arab region is currently facing a substantial mismatch between education and employment opportunities. While there are dramatic increases in levels of education and literacy among Arab adolescents (UNESCO, 2015), job opportunities are limited, which causes unprecedented numbers of young people unable to find work once they finish their education (ILO, 2013). In fact, youth unemployment in the Arab region is considered the highest in the world, reaching 23% compared to a world average of 14% (ILO, 2013). The discrepancy between education and employment opportunities is particularly obvious in the case of women. While increases in literacy and educational attainment among Arab young women are particularly pronounced, with more women attending university than men (ILO, 2013), women's labor force participation in the Arab region is unfortunately the lowest in the world, with only 26% compared to a world average of 51% (ILO, 2013). These economic challenges are considered critical factors in determining the risk and experience of depression among Arab adolescents (Dardas, Bailey, & Simmons, 2016).

Another issue that has been receiving a great deal of attention is mental health in politically violent regions. The Arab Spring, which began in December 2010 and continues to this day, is expected to have substantial influences on Arabs' mental health and illness (Amawi, Mollica, Lavelle, Osman, & Nasir, 2014). Many Arab countries, such as Iraq, Lebanon, Palestine, Libya, Yemen, and Syria, have been experiencing, directly or indirectly, years of armed conflict, suppression, and human rights violations. The consequences of these conflicts are expected to result in higher rates of mental health problems, psychiatric diagnoses, and impairment in the mental health services and programs (Amawi et al., 2014). The United Nations human development report (UNDP, 2013) suggested that the economic crises that Arab youth face due to education-job mismatch is an important triggering factor in the political instability in the region as it led to alienation, despair and widespread protests, in which the youth have taken a major part.

1.1.1.3 Mental health service

In most Arab countries, mental health services are provided by public (government) and private sector facilities. The ratio of psychiatric beds to the total population is significantly insufficient (Al-Krenawi et al., 2004). For example, in Jordan, there are 560 beds serving a population of about 5 million people (Gearing et al., 2014). Follow-up care in Arab countries is limited due to the poor understanding most Arab people have regarding the need to follow-up after initial improvement and the lack of

community services designed for these purposes. Reliable epidemiological psychiatric baseline data are also lacking in the Arab world making it difficult to plan for future psychiatric services, education, and research (Gearing et al., 2013). Further, most Arab countries have no mental health legislation or documented mental health policies (Al-Krenawi et al., 2004).

1.1.1.4 Mental illness: knowledge, perception, and management

Arabs strongly believe in the existence of supernatural forces such as Jinn, black magic (*Sehr*), and the evil eye (*Hasad*). It is not uncommon among Arabs to relate the symptoms of mental illnesses to these supernatural reasons. For example, many Arabs believe that mental illnesses result from possession by evil spirits (Jinn) (Aloud, 2004; Weatherhead & Daiches, 2010). The evil eye, “a powerful jealous look or comment upon the good fortune of another,” is also believed to cause adverse events such as physical ailments, mental illness, or failure in relationships or business (Fadlalla, 2005). The evil eye may be averted by adding the phrase “*Ma sha’ Allah*,” meaning “Whatever God wills,” before offering a compliment. According to Arabs’ beliefs, magic or witchcraft (*Sehr*) is a set of knots (*oqad*), incantations, and words uttered, written, or carried out in such a way as to affect the body or mind of the subject without coming into contact with him/her. Some Arabs also view psychological disorders as a test from God, God’s will, or a form of punishment for sin (Youssef & Deane, 2006).

The Qur'an requires practicing Muslims, who constitute the majority of the population in Arabic countries, to seek treatment for illness, especially when the illness is serious, treatable, and/or an infectious disease. The teachings state that sick people should not only take medicine, but also should seek advice and treatment from expert physicians for this purpose. Unfortunately, the stigma of mental illness strongly precludes Arabs who experience mental illnesses from following these teachings, which significantly delays help-seeking behaviors and complicates the trajectory of mental illness, bringing further stigmatization. Additionally, Arabs tend to hold negative attitudes toward formal psychiatric services and have less knowledge regarding the existence of these services and the role of its providers (Al-Qutob, 2005). One study (Gilat, Ezer, & Sagee, 2010) revealed that when a member of an Arab family shows symptoms of mental illness, Arabs usually turn first to family practitioners (33%), followed by family members (21.6%), and then the Sheikh (19%). Only 11% turn to mental health practitioners. It takes months and even years for some families before they finally accept that the person with mental illness needs professional psychiatric care. The decision to seek professional psychological help usually occurs when symptoms are severe and recognizable by others outside the family.

Overall, the Arab region has its unique sociocultural, religious, and political context that cannot be ignored when designing and implementing mental health interventions and utilizing mental health concepts and theories. The substantial lack of

mental health services and the stigma associated with mental illness on the one hand; and poverty, unemployment, and lack of reasonable hopes for a decent future in the context of corruption of regimes and perceived social injustice on the other, may not only have immediate effects on the health and wellbeing of Arab adolescents, but also long-term negative implications on their health and wellbeing as adults, thus impacting future generations and society as a whole.

1.1.1.5 Jordan: An exemplar of Arab countries

Despite the diversity within and across Arab countries, Arab societies share many mental health values, beliefs, and practices that can be decisive in shaping their perceptions and management of all mental illnesses, including depression (El-Islam, 2008). Jordan, officially The Hashemite Kingdom of Jordan, is a developing Middle Eastern country of 9.5 million people (Jordan Department of Statistics [DOS], 2016) (Figure 4). The country has a relatively homogeneous society with 98% of the total population extending from Arabic origins (Nasir & Al-Qutob, 2005). The composition of Jordanian population has been significantly influenced by geopolitical regional factors, and constitutes primarily four major groups: (a) Arab Jordanians with roots preceding 1948, (b) Arab peoples emigrated from Palestine after the 1948 creation of Israel, (c) Palestinians who emigrated from the Gaza strip and West Bank after 1967, and (d) Palestinians who emigrated from other Arab countries after the Gulf War (Al-Krenawi, Graham, Ophir, & Kandah, 2001). Recently, around 1.5 million Syrian refugees have

settled in Jordan along with another one million coming from different Arab countries (e.g., Egypt, Iraq, Libya). Jordan is, therefore, witnessing one of its highest rates of migration and population growth (DOS, 2016). Jordan is disproportionately young with 35% of the population aged under 14, 61% aged 15-59, and only 4% aged 60 or above. Life expectancy in Jordan is 71.5 years (DOS, 2016). The country is known for its social stability, culture, and collectivist context (Helfont & Helfont, 2012).

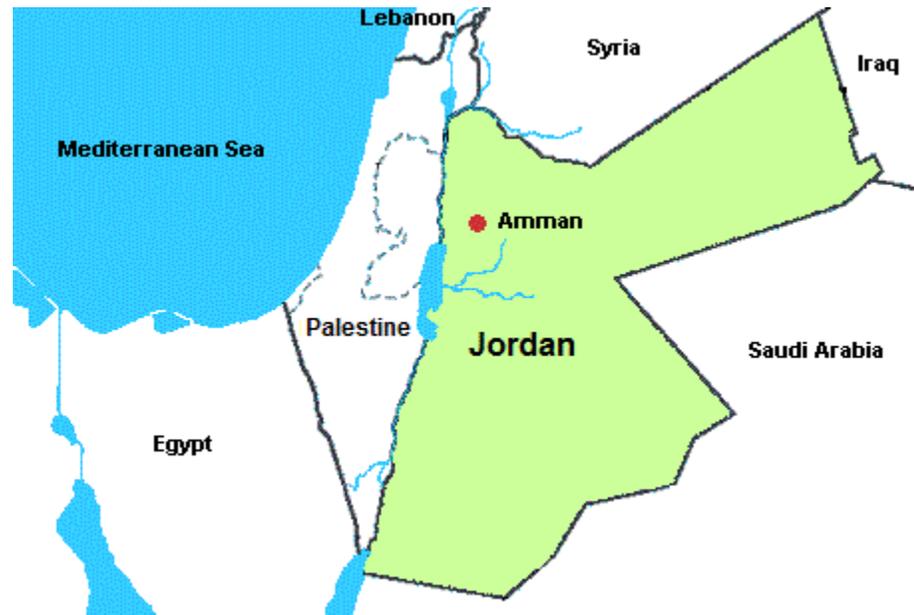


Figure 4: Jordan, a developing Middle Eastern country located in Western Asia

Mental health services and depression in Jordan

Compared to other countries in the Middle East, Jordan prides itself on its health services, which are considered one of the most modern in the region (WHO, 2011). Jordan's healthcare system is a mixture of three major sectors: public, private, and military. The Ministry of Health (MOH) runs the public sector. It provides free or low-cost services to approximately 30-40% of the population, and has clinics located throughout the country where the majority of the population can reach within 30 minutes or less (MOH, 2013). While medical health services are widely available throughout the country, mental health services are limited to two public hospitals (390 beds), one military unit (20 beds), and one private hospital (40 beds) providing inpatient services, and a few psychiatric clinics providing outpatient services. The WHO (2011) has completed an assessment study of the mental health system in Jordan and concluded that mental health services are critically underdeveloped and almost absent for families of relatives with mental illness. There is also a significant dearth of mental health staff, including psychiatric nurses, psychologists, and psychiatrists.

While some studies have documented high rates of depression in adult populations (Hamid et al., 2004; Safadi, Abushaikha, & Ahmad, 2015), only one study explored depression among a sample of Jordanian adolescents (Ismayilova, Hmoud, Alkhasawneh, Shaw, & El-Bassel, 2013). This study analyzed data from a cross-sectional national survey conducted in 2009 among 8,129 Jordanian youths between the ages of

14–25 years. Depression was measured on a 9-item scale that was developed by the researchers and showed poor psychometric properties. Ismayilova and colleagues (2013) reported that the use of an unstandardized depression measure limited the validity of the findings and comparability with estimates from other countries. Overall, as is the case in all Arab countries, Jordanian adolescents experiencing depression are considered a critically understudied population.

1.1.2 Depression in Adolescence: What Makes it Different?

Adolescence is a critical transitional period in which individuals start exploring their identity and place in society. This period is characterized by more biopsychosocial changes than any other stage of life, excluding infancy (Holmbeck, 2002). Knowledge, skills, and attitudes attained in this developmental stage is critical in establishing lifelong self-management and health-related behaviors (Holmbeck, 2002). Adolescents who adjust well to this new developmental stage tend to relate more positively to themselves, their families, and their environment (Steinberg & Morris, 2001). Conversely, developing a mental illness during this period can have serious negative effects on physical, psychological, emotional, social, and spiritual health that can persist into adulthood (Peters et al., 2015).

Depression is a highly prevalent debilitating disorder in adolescence that affects up to 9% adolescents annually (Angold & Costello, 2001; Thapar, Collishaw, Pine, & Thapar, 2012). The disorder often follows a complex illness trajectory that can drain a

significant portion of the adolescent's and family's health and resources. The immediate and long-term individual, interpersonal and societal costs of adolescent depression are substantial. Most adults with recurrent depression have their initial depressive episodes as adolescents. Further, depression disorders with early onset tend to be more chronic and debilitating than depression beginning in adulthood (Cook, Peterson, & Sheldon, 2009). Therefore, adolescence is considered an important developmental period in which to intervene (Lopez et al., 2006). However, there are several challenges to early detection and appropriate interventions for adolescent depression.

Adolescents do not readily report on emotional or behavioral manifestations of mental health problems like depression. They might deny the existence of these symptoms or have difficulty articulating them (Cook, Peterson, & Sheldon, 2009). Adolescents are also less likely than adults to exhibit melancholic symptoms, including depressed mood, marked psychomotor retardation, significant weight loss, or excessive guilt. Rather, depressed adolescents often show high levels of aggressive and violent behaviors, which are often mishandled as disciplinary issues in school or bad behaviors in home. Further, clinical presentations for various medical and psychiatric conditions, as well as reactions to psychosocial stressors, can mimic or confound the picture of depression in adolescents (Hankin, 2006). Some adolescents presenting with symptoms and behaviors that initially resemble depression develop behavior problems, traumatic stress disorders, or substance abuse rather than depression. Yet many adolescents with

depression are likely to experience subsequent substance abuse and derailed emotional, cognitive, and social development (Clark, Jansen, & Anthony Cloy, 2012). Therefore, careful assessment and differential diagnosis is essential. Collateral reports from parents, alternative caregivers, and teachers are also essential for confirming or ruling out depression in adolescence (Birmaher, Brent, & AACAP, 2007).

As should the case be within every culture, understanding the development of depression specifically among Arab adolescents requires considering all individual, social and contextual risk factors that may lead to the rise in depressive symptoms (Thapar, Collishaw, Pine, & Thapar, 2012). Adequate assessment also requires early-detection efforts that employ developmentally and culturally appropriate measurement instruments. It is important to understand how Arabs' spiritual and cultural values and family and societal structure may affect the presentation of depression symptoms among Arab adolescents in order to ensure accurate diagnoses and appropriate interventions.

1.1.3 Stigma

“People suffering from mental illness are among the most stigmatized, discriminated against, marginalized, disadvantaged and vulnerable members of our society” (Johnstone, 2001, p. 201). The stigma of mental illness is still a primary issue that concerns mental health care providers throughout the world. It generates various disadvantages for individuals with mental illness that include infringement of their

human rights and social exclusion (WHO, 2007). Stigma is also considered a devastating barrier to providing adequate mental health care, leading to serious negative impacts on the quality of life of people with mental illness (Sartorius & Schulze, 2005). As such, there is a general consensus that combating stigma is a critical step toward promoting the health and wellbeing of individuals with mental illness and their families.

Individuals with mental illnesses like depression may experience two types of stigma: personal stigma, which is the negative feelings and attitudes they have toward themselves (Goffman, 1963), and perceived stigma, which reflects how individuals perceive the general public's attitudes toward them (Corrigan, 2000). Public stigma has long been associated with lack of engagement, and poor adherence and utilization of mental health services and treatment outcomes (Al-Krenawi et al. 2004; Barney, Griffiths, Jorm & Christensen, 2006). Perceived stigma can lead to feelings of inferiority, self-hate, and shame that diminish self-esteem and cause self-doubt regarding whether one can live independently, hold a job, earn a livelihood, and find a life mate, which can eventually be a major barrier to recovery (Yanos et al., 2008). Research has established a connection between personal and public stigma such that personal stigma exists when the stigmatized individual internalizes others' negative ideas and responses leading to negative thoughts and emotional reactions toward themselves (Corrigan & Watson, 2002; Gary, 2005; Link, 1987). Interestingly, Armstrong and Secker (2000) suggested that adolescents experience an enhanced sensitivity to social stigma because of the strong

influence of their friends and peer group, so they are at increased risk for internalizing the public's negative views about them. This relationship is unknown for Arab adolescents.

While the stigma of mental illness is considered a global barrier to seeking help for adolescent depression (Barney, Griffiths, Jorm, & Christensen, 2006; Brown et al., 2010; Wrigley, Jackson, Judd, & Komiti, 2005), this is considered particularly true in the Arab region where the primary focus is on group or family members rather than on individuals. Having a child with mental illness is often viewed as an issue of poor family functioning and inadequate parenting rather than a real illness that requires medical care (Al-Issa, 2000). Thus, Arab families often try to conceal the mental illness or delay or deny needed treatment (Saxena et al. 2011; Shibre et al. 2001). Tackling public stigma in Arab societies is considered fundamental to promoting help-seeking behaviors among those managing mental illnesses (Dardas & Simmons, 2015). However, little is known about how the stigma of depression manifests within the Arab culture making it difficult to design and test interventions that support Arab adolescents experiencing depression and their families.

1.2 The Current Study

The mental health profile of Arab adolescents calls for health professionals, researchers, and policy makers to intervene early and consistently to address the growing mental health needs among this vulnerable population. However, available

approaches for promoting adolescents' mental health were originally developed and adapted for and by Western individuals (Dardas & Simmons, 2015; Makhoul et al., 2011). Health practices stemming from the Western perspective may not be congruent with the cultural and religious beliefs of Arab communities. In addition, Berg-Cross (2000) found that the degree to which different interventions influence adolescents' adjustment varies across different cultural groups. There is still a lack of valid research-driven data on the current patterns, determinants, and outcomes of adolescent depression, and the WHO (2014a) has considered this one of the main challenges for the provision of effective mental health support services in most Arab countries. Furthermore, although the impact of stigma on adolescents with depression and their families and communities is well documented in the literature, few research studies have been conducted in the Arab region (Abdullah & Brown, 2011) and no studies have been identified in Jordan (Dardas, Bailey, & Simmons, 2016). To the best of our knowledge, this study represents the first research endeavor with the goal of exploring the depression profile and its related stigma among Jordanian adolescents.

1.2.1 Theoretical Framework

This study was guided by perspectives from two theories: *Beck's Cognitive Theory of Depression* and *Roy's adaptation model*. The next sections summarize and critique each of these two theories as it pertains to adolescent depression, and an integrated

theoretical model that addresses the gaps in each theory is proposed as a framework for the current study.

1.2.1.1 Roy's adaptation model

Roy's adaptation model (RAM) conceptualizes a human as a holistic adaptive system that is in constant interaction with the internal and the external changing environment (Roy, 1971). According to Roy (1976), the main task of the human system is to maintain integrity in the face of environmental stimuli through innate and acquired coping mechanisms. To respond positively to environmental changes, the person must adapt. Health is viewed as a reflection of adaptation (Andrews & Roy, 1991). Adaptation is the process and outcome whereby adaptive responses promote the integrity of the person by supporting his/her ability to meet the goals in terms of survival, growth, well-being, and quality of life (Roy & Andrews, 1991). Maladaptive responses do not support these goals. The goal of nursing is to foster successful adaptation by managing the environmental stimuli (Roy & Andrews, 1999).

Roy's model sees an individual as a set of interrelated biological, psychological, spiritual, and social systems that try to maintain a balance between each of these systems and the outside environmental stimuli. These stimuli include *focal* stimuli, which is the major one, most immediately confronting the person and needs direct attention (e.g., illness), *contextual* stimuli includes all other factors present in the situation that contribute to the effect of the focal stimulus (e.g., sociodemographic and

cultural characteristics) and *residual* stimuli, those internal factors that may affect the coping strategies of the individual (e.g., personal attitudes, beliefs, experiences and expectations).

Roy and Andrews (1999) have set relational propositions between the three types of stimuli and the human bio-psycho-social system such that stimuli serve as inputs that trigger two types of coping systems: (a) regulator coping, which involves responses from the nervous, endocrine, and other body system, and (b) cognator coping which involves psychosocial responses (Roy & Andrews, 1999). The responses occur through one or more of four adaptive modes which are: (a) *physiological mode* (the biological responses), (b) *self-concept mode* (the psychological and spiritual responses), (c) *role function mode* (the social responses), and (d) *interdependence mode* (the receptive and contributive responses) (Figure 5).

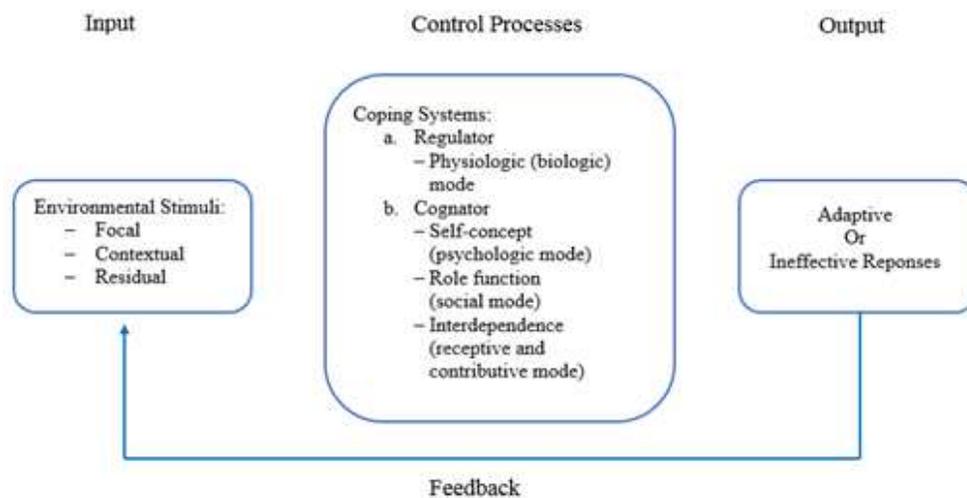


Figure 5: Roy's adaptation model

The overall goal of these responses is to *adapt* with the constantly changing environment. Inadequate responses serve as feedback to the system to decide whether to increase or decrease its efforts to cope with the stimuli (Roy, 2009). According to Roy (1981, 1983), coping systems are the mechanisms through which adaptation occurs. Nursing roles come when an individual presents an ineffective response during his or her adaptation process.

Interestingly, RAM specified several cultural assumptions that need to be considered when utilizing the model in research or practice. Roy (1984, 2009) argued that the experiences within a specific culture will influence how each element of the model is expressed. While a concept in RAM might be central within a certain culture, it may have less influence on the elements of the model when applied in a different culture. Thus, Roy's model is potentially relevant across cultures as it sees social factors such as culture, religion, education, and socio-economic status all determinant for how an individual adapt with environmental stimuli (Tomey & Alligood, 2006). In RAM, cultural and spiritual beliefs play an important part in the patient's sense of well-being. A loss of these factors may weaken an individual's social integrity. As such, Roy (2009) highlighted that differences in cultural expressions of the elements of the model should lead to changes in practice activities such as nursing assessment.

RAM and depression

While RAM was not originally developed to specifically address depression, Roy (1984) provided three explicit statements to clarify her position on the relationships between depression, coping, and the model adaptive modes: (a) a disruption in any mode can potentially lead to depression; (b) depression can be assessed in each mode; and (c) depression could be viewed as a coping mechanism. However, some researchers argued that these statements were not sufficiently clarified and were in fact confusing (Fawcett, 2005; Tsai, 2003). For example, while statement (a) implies depression as an outcome, statements (c) suggests depression is a coping mechanism rather than an outcome. In her middle-range theory of caregiver stress, which was heavily based on Roy's model, Tsai (2003) attempted to clarify Roy's assumptions on depression. Tsai took the stance that depression symptoms are ineffective coping mechanisms that can be observed in some or all adaptive models. For example, in response to a focal stimulus (e.g., cancer diagnosis) or contextual stimulus (e.g., death of a parent), sleep disturbances maybe observed in the physiological mode, low self-esteem and low morale maybe observed in the self-concept mode, social isolation maybe observed in the role function mode, and lack of ability to give and receive love and respect maybe observed in the interdependence mode. Such ineffective coping can result in negative outcomes such as poor health and quality of life.

RAM as a framework in adolescent depression research: strengths and limitations

Roy's model can be viewed as a logically congruent and internally consistent model. This model is characterized by the level of complexity required to make it broad in scope and generalizable for various areas in practice, education, and research (Phillips, 2010). In fact, the model itself has generated many specific practice theories (e.g., theory of caregiver stress). The concepts of Roy's model were seen applicable within many practice settings of nursing (Henderson et al., 2003; Razmus, 1993; Tsai et al., 2003; Waweru, et al., 2008; Yeh, 2001; Zeigler, et al., 2004; Zhan, 2000), and with various populations, including adolescents. For example, Ramini, Brown, and Buckner (2008) stated that studying the physical and psychological adaptation of adolescent patients as explained by RAM can significantly help nurses understand the adaptive strategies used by this special population and consequently, design effective intervention to promote effective coping. Woodgate and Degner (2003) also used RAM with adolescents sample and concluded that the model helped capturing not only challenges related to adolescents' illness (cancer), but also challenges related to adolescents' complex developmental changes and demands.

Utilizing RAM as a framework in research addressing adolescent depression may have its own strengths and limitations. The model's strengths come from several perspectives. Firstly, RAM views the person as a holistic, biopsychosocial being that is in

constant interaction with the internal and the external environment. Such understanding triggers researchers and health care providers working with depressed adolescents to provide care and support in more sensitive and comprehensive ways, and to help adolescents manage the interpersonal, psychological, and social circumstances that affect their mental and emotional well-being. Secondly, Roy was among the first nursing theorists to theorize that illness and health can co-exist (Roy & Andrews 1999).

According to Patton (2004), this has a positive implication for psychiatric nursing as it strongly relates to that proportion of people who function in life with long-term mental health difficulty. Thirdly yet most importantly, Roy's model is apparently relevant to individuals' unique experiences. Basic to this model is that every individual has a unique range of adaptive responses that vary by personal, contextual, and cultural characteristics. Roy (1971, 1984, 2009) maintained that the dynamics of the individual's family and social structure must be recognized, and care must be taken to understand the patient's role in that social structure. Utilizing RAM as a framework in research addressing depression specifically among Arab adolescents can be promising due to its careful attention to the individual's contextual and cultural characteristics.

There is no one global theory that can fit all situations. Roy's model has its own limitations. First, RAM has been criticized for the overlap in certain assessment categories and difficulties conceptualizing certain terms. Roy did not provide operational definitions for her concepts and propositions, which led to variations in the

variables used in research to operationalize her work (Fawcett, 2005; Tomey & Alligood, 2006). Second, the model considers the 'initial' impact of patients' contextual and residual stimuli, but does not acknowledge the ongoing impact that these stimuli may have on the management and prognosis of patients needs. A third limitation of RAM is related to the dependence on the value system of the nurse who must judge what is or is not adaptive (Tomey & Alligood, 2006). Although the model specified that setting goals and conducting evaluation should be in collaboration with the patient (Andrews & Roy, 1991), initial *assessment* is viewed as a nursing responsibility. It is the nurse who assesses the behaviors manifested from the patient's four adaptive modes (physiological, self-concept, role function, and interdependence modes), and then make a nursing diagnosis based on the nurse's "technical, interpersonal, and intuitive skills." (Roy, 2009, p. 59).

Overall, while a direct application of Roy's model in research and practice may have its limitations, the model offers a unique approach for individualized care, which is a particularly important feature of the nursing profession. Roy's work advocates for nursing care that is respectful of and responsive to patients' individual and context characteristics.

1.2.1.2 Beck's cognitive theory of depression

Coming of age at a time when psychoanalysis was the dominant method of treatment and behavioral theory was a major competitor, Aaron T. Beck (1967) established his revolutionary Cognitive Theory of Depression. Beck (1967) believed that

depression was not a product of unconscious drives and defenses nor a consequence of outside forces that could be resolved by reordering the external environment but, rather, the consequence of unduly negative thoughts, generated by dysfunctional beliefs and biased information processing. Beck (1967) identified three consecutive mechanisms that he thought were responsible for depression: (1) negative self-schemas (a set of beliefs and expectations about the self), (2) errors in logic (failures of information processing), and (3) the cognitive triad (negative automatic thinking about the self, the world, and the future).

Beck (1967) theorized that negative schemas may be acquired in childhood as a result of a traumatic event (e.g., death of a parent, parental neglect, school bullying) and then life experiences might contribute to them. Negative self-schema *predisposes* the individual to depression by impacting the process of information processing. In other words, people with negative self-schemas become prone to making logical errors in their thinking when they face stressful events. For example, those people will tend to demonstrate selective attention to information that matches their negative expectations, and selective inattention to equally relevant information that contradicts those expectations. They tend to magnify the importance and meaning placed on negative events, and minimize the importance and meaning of positive events. They tend to misinterpret facts in negative ways and blame themselves for any misfortune that occurs. Such negative thinking, faulty information processing, and poor judgment style

become *automatic* in response to stressful situations even in the face of contrary evidence. Eventually, a negatively based worldview guides one's perceptions and interpretations of life experiences, leading to depression (Figure 6).

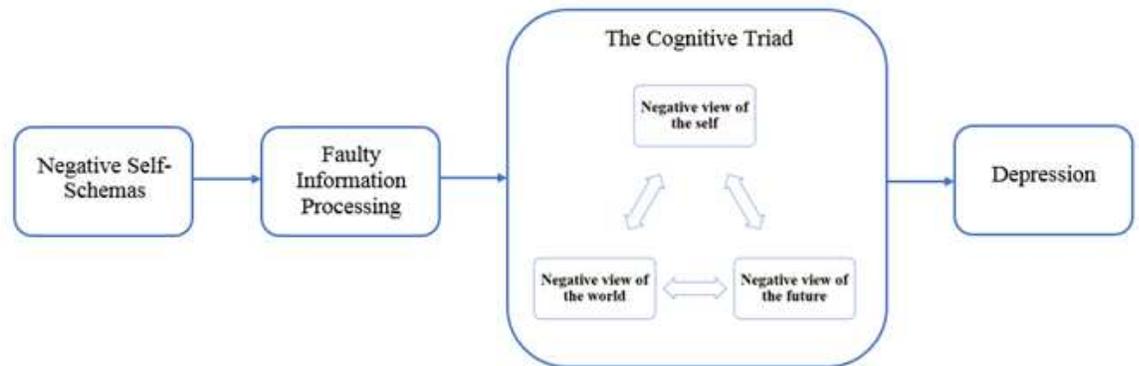


Figure 6: Beck's cognitive theory of depression

While Beck (1967) asserted that it is the negative cognition that contributes to depression, he clarified that maladaptive or irrational cognitions can be learned socially (e.g., when children in a dysfunctional family watch their parents fail to successfully cope with stressful experiences), or they can result from a lack of social experiences that would facilitate the development of adaptive coping skills. Beck (1970, 1976) clarified that his cognitive movement did not reject behavioral principles. Rather, it addressed those mental events that he thought were the basis for the observed behavior. In other words, his theory views the physical, emotional, and social symptoms seen in depressed people as a consequence of their negative thinking patterns. Beck (1979) also linked people's cognition to their feelings and behaviors, stating that how people feel and

behave is largely determined by their cognitions, and that changing how people think can change their feelings and behaviors. Because of this understanding, Beck helped evolving what is now called a cognitive-behavioral therapy, targeting both cognitive and behavioral problems using a full integration of cognitive and behavioral strategies. Beck (1983) recommended that both cognitive and behavioral theories be tied together by common assumptions, techniques and research strategies, while maintaining his view about the role cognitions play in behavior change.

Beck's theory as a framework in adolescent depression research: strengths and limitations

Beck's cognitive theory is considered one of the leading and well-established theories of depression. On the basis of this theory, Beck formulated principles of cognitive and cognitive behavioral therapies, which are now among the most widely practiced, clinically evaluated and, empirically supported interventions in the field of depression (Hollon, Stewart, & Strunk, 2006; Webb et al., 2012). Cognitive behavioral therapies proved to be a valid intervention for adolescent depression on a number of dimensions including format (e.g., individual, group, family, couples, computerized), content (e.g., cognitive vs. behavioral emphases, incorporation of other treatment modalities) and style (e.g., didactic persuasion vs. Socratic questioning) (Asarnow et al., 2002; Spirito et al., 2015; Dobson & Dozois, 2010). Consistent with the underlying cognitive theory, these therapies were associated with reductions in negative cognitions

and subsequently, changes in depressive symptoms. There is also a growing evidence that cognitive therapy can be used to prevent the emergence of depression among adolescents at risk (Gillham et al., 2006; Hetrick et al., 2016; Merry et al., 2012).

On the other hand, the use of Beck's cognitive theory as a framework for research addressing adolescent depression has some limitations. First, holding a self-focused cognitive approach assumes that depression is merely related to the irrational or negative beliefs, rather than negative experiences that activate them. Some researchers speculated that this approach may lead some patients to further engage in self-blame and self-criticism (Segal & Shaw, 1996). Second, experts in the psychology discipline have determined that Beck's cognitive theory of depression is central to negative thoughts only, and did not take the biologic predisposition into account (e.g., neurotransmitter and neuroendocrine dysregulation and dysregulated brain circuit) that often lead to variations in the formation of negative schemata among children despite similarities in experiences (Hankin, 2006). Finally, the theory suggests that treating depression requires focusing mainly on individuals' cognition, which minimizes the importance of their personal history and surrounding family, social, and cultural environment. There is no scope within this theory for personal exploration and examination of emotions, or of looking at troubling issues from a variety of perspectives (Haaga, Dyck, & Ernst, 1991).

1.2.1.3 Cognitive-Adaptation Model (CAM): An integrated conceptual framework for depression among Arab adolescents

Addressing depression among adolescents has long been considered a complicated arena due to the complexity of the health problem and the complexity of the population. One of the most crucial steps to ensure valid and reliable findings when investigating such complicated human phenomenon is having an appropriate theoretical framework. Both Roy's adaptation model and Beck's cognitive theory can be promising for research examining depression among Arab adolescents. Each of these theories has its own strengths that can be utilized to overcome the limitations of the other. The cognitive-adaptation model (CAM) is an integrated theoretical model of factors associated with depression among Arab adolescents that addresses the gaps in both Roy's theory and Beck's theory.

In line with Roy's model, CAM views an Arab adolescent experiencing depression as a holistic, biopsychosocial being that is in constant interaction with the internal and the external environment. Basic to CAM is that the experience of depression significantly varies by personal, contextual, and cultural characteristics. However, the model takes into account the individual biologic predisposition. In CAM, the *focal* stimuli presented in Roy's model are viewed as the patterns of thinking or cognitions, the *contextual* stimuli include adolescents' sociodemographic, family, and cultural characteristic, and the *residual* stimuli include adolescents' beliefs and attitudes towards depression. Roy's careful consideration of the role that individual's contextual and

cultural characteristics play in shaping their adaptation process is a major building block in CAM. However, CAM does not view the contextual factors as being only initial stimuli as in Roy's model. Rather, CAM considers context an ongoing influential factor that significantly impacts the whole experience of depression. Seemingly, the residual stimuli (e.g., values, beliefs, attitudes) are affected by the surrounding context and themselves affect the experience of depression (Figure 7).

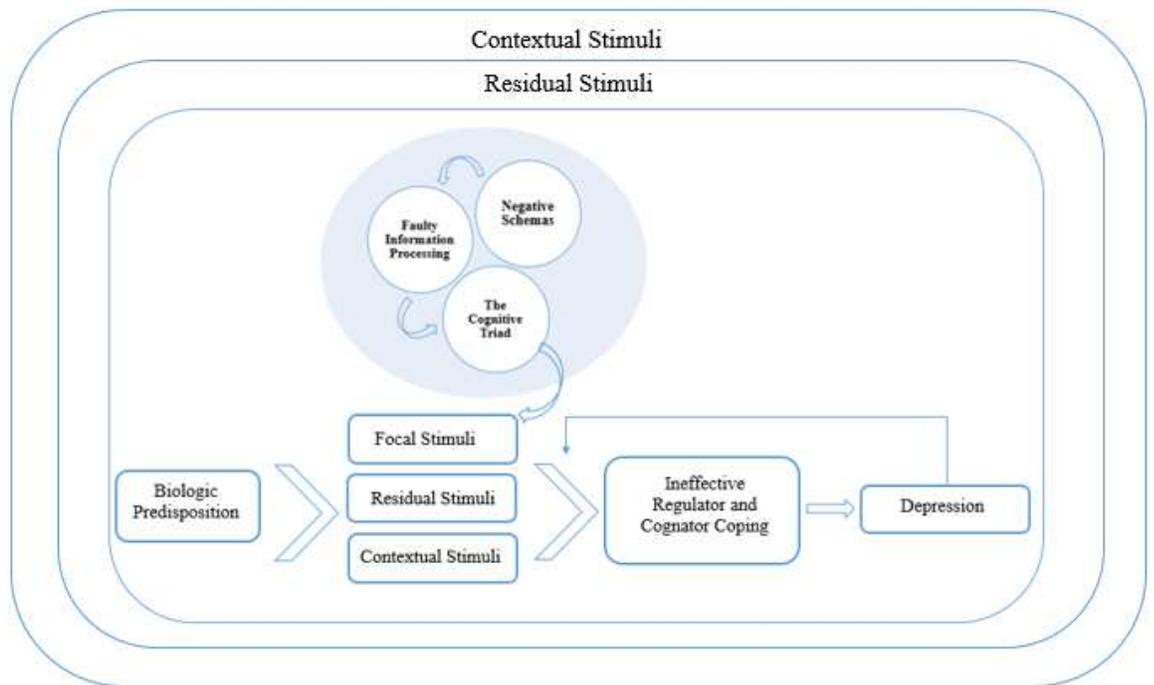


Figure 7: The cognitive-adaptation model is an integrated theoretical model of factors associated with depression among Arab adolescents

Contrary to Roy's model and in line with Beck's cognitive theory, CAM views depression as an outcome rather than a coping mechanism. Depression is an outcome of maladaptive responses to the various environmental stimuli. CAM also draws from Beck's cognitive theory and views negative cognition as central (focal) to the development of depression. As such, CAM believes that any effort to tackle depression should include helping adolescents learn how to explore the accuracy of their own beliefs and how to avoid the biasing effects of schema-driven processing. However, CAM does not minimize the role of the surrounding environment in triggering, maintaining, and/or exaggerating the negative patterns of thinking.

In CAM, coping responses are considered the mediators between the environmental stimuli and the outcomes of the adaptation process. As such, CAM believes that adequate cognitive, psychological, emotional, spiritual, and social coping responses are necessary to maintain integrity in the face of environmental stimuli and to achieve positive adaptive outcomes. Overall, CAM provides a holistic approach that facilitates designing synergistic and combined treatment programs that would overcome potentially incompatible or mutually antagonistic mechanisms.

1.2.2 Purpose and Aims

The overarching purpose of this study was to estimate a national prevalence of clinically significant depression symptoms among adolescents in Jordan, and determine relationships with depression stigma, depression etiologic beliefs, and likelihood to seek help for depression. The specific research aims were to (1) estimate the national prevalence of moderate to severe depression symptoms among Jordanian adolescents, and identify adolescent characteristics associated with severity of depression; (2) describe Jordanian adolescents' depression etiological beliefs and likelihood to seek help for depression; (3) explore relationships between depression severity, depression etiologic beliefs and the type of treatment that Jordanian adolescents are likely to seek.; (4) describe the severity of personal and perceived depression stigma among Jordanian adolescents and its relationship to severity of depression; and (5) determine adolescent characteristics associated with severity of depression stigma among Jordanian adolescents.

1.2.3 Approach: Introduction to Dissertation Chapters

The study aims will be answered through six chapters:

1.2.3.1 Chapter one

Chapter one introduces the research problem and synthesizes the background information necessary to establish the significance of this study. It provides important information regarding adolescent depression as a global public health concern. It also

clarifies the negative impact that mental illness stigma has on the health and wellbeing of adolescents experiencing depression and their families. The chapter provides background information on the Arab mental health values, beliefs, and traditions that are shaped by their distinct history, religion, ethnic identity, and nationality. This chapter also provides a theoretical framework that helps explaining the relationships between the concepts of interest, placing the findings of the study within the existing knowledge base, and explaining how potential interventions are expected to induce change.

1.2.3.2 Chapter two

Chapter two provides the necessary understanding for the current patterns, determinants, and outcomes of adolescent depression in the Arab region. The chapter includes the first systematic review of all Arab literature pertaining to adolescent depression. Findings from this work were structured around four main themes: (a) few robust prevalence estimates of adolescent depression are available in Arab countries; (b) depression varies based on the individual characteristics of Arab adolescents; (c) context influences Arab adolescents' risk of experiencing depression; and (d) the stigma of depression negatively impacts help-seeking process among Arab adolescents. The chapter also delineates the role of Arab nurses in adolescent depression treatment outcomes.

1.2.3.3 Chapter three

Chapter three analyzes the concept of ‘mental illness stigma’ as it pertains to Arab families. To date, little is known about how mental illness stigma manifests within the Arab culture making it difficult to design and test interventions that support Arab individuals with mental illness and their families in treatment seeking and adherence. Chapter three addresses this gap by providing a concept analysis and systematic review on ‘mental illness stigma’ in the Arab region. Rodgers’ and Knafl (2000) evolutionary method of concept analysis is used to analyze and synthesize Arab literature and identify attributes, antecedents, consequences, and contextual variations of the concept of mental illness stigma among Arabs.

1.2.3.4 Chapter four

Chapter four provides an evaluation of the feasibility of surveying Arab adolescents regarding depression severity, depression stigma, and attitudes toward seeking psychological professional help. Since this was a novel area of research in the Arab region generally, and Jordan specifically, this chapter provides results from a successful pilot investigation that aimed at assessing the feasibility of collaboration and coordination with the proposed recruitment sites; assessing proposed recruitment strategies for meeting desired sample size projections in the larger study; confirming the utility of the translated self-reported measures and examining their psychometric properties; and providing preliminary findings. These steps were critical to establishing

the dissertation methodology that considered the ethical, methodological, cultural, linguistic, and logistical issues that might potentially affect the validity and reliability of the collected data.

1.2.3.5 Chapter five

Chapter five presents findings from the large-scale study, which utilized a nationally representative school survey. The chapter reveals significant findings regarding the high prevalence of depression symptoms among Jordanian adolescents, and identifies likely social determinants that need to be addressed, especially considering that the political instability in the region is likely to increase risk for depression. It also sheds light on the high prevalence of inaccurate depression etiological beliefs and low tendency to seek professional psychological help for depression among Jordanian adolescents. The chapter provides specific recommendations for healthcare providers, researchers, and educators in the Arab region to develop effective and culturally appropriate screening, prevention, and intervention approaches using evidence-based guidelines to promote Arab adolescent mental health, particularly for depression.

1.2.3.6 Chapter six

Chapter six sheds light on how depression stigma manifests among Jordanian Arab adolescents, using findings from the national survey. It describes the severity of personal and perceived depression stigma among Jordanian adolescents, and its

relationship with adolescents' sociodemographic and health characteristics and depression symptoms. The chapter also provides important information on when, how, and why to utilize school settings for anti-depression stigma interventions.

1.2.3.7 Chapter seven

Chapter seven synthesizes the information obtained from this research endeavor, and highlights the foundations for future work to tackle adolescent depression and its associated stigma in the Arab region. The chapter addresses the study's limitations, and provides comprehensive recommendations for Arab educators, researchers, mental health care providers, and policy makers. Finally, the chapter provides an international perspective that calls for promoting cultural competency and transcultural nursing.

Overall, Arab adolescents experiencing depression are considered a critically under-studied population, and there are many methodological issues to consider when tapping this significant gap in knowledge. Currently, no solid evidence is available on the prevalence of depression among Arab adolescents and its potential associations with depression stigma and help-seeking intentions; making it difficult to design and test effective interventions for Arab adolescents with depression and their families. This study will fill this gap in the literature by collecting data on depression severity, depression sigma, depression etiological beliefs, and attitudes toward seeking help for depression among Jordanian Arab adolescents. The goal is to help establishing

preventive and treatment programs for Arab adolescents at risk for or diagnosed with depression.

Findings from this study are necessary to establish a holistic mental health nursing practice that is culturally competent. Indeed, the focus of this study is consistent with the report by the WHO (2014b) entitled “Health for the World’s Adolescents”, which calls upon researchers, healthcare providers, and policymakers to bridge the gaps between health policies and services through drawing up evidence-based guidelines to promote the mental health and reduce mental illness stigma among adolescents experiencing depression and their families.

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2. Adolescent Depression in the Arab Region: A Systematic Literature Review

2.1 Introduction

Evidence suggests there is considerable variability among countries in the prevalence, diagnosis, management, and prognosis of adolescent depression. In the Arab region, the detection and treatment of depression in early adolescence is imperative due to large proportion of youth and many of the factors that contribute to the onset of mental disorders in this region (Assaad & Roudi-Fahimi, 2010). According to the United Nation's report on Arab youth (UN, 2011), almost 38% of Arabs are under the age of 14, and more than half of them are below the age of 25. Unfortunately, most Arab adolescents face critical challenges that can negatively affect their mental health. These include high illiteracy rates (reaching 16.6%), sharp disparities in education and deterioration of education quality, some of the highest unemployment rates in the world, inadequate health services, and poor access to health facilities, especially mental health facilities (Afifi, 2005; Patel & Kleinman, 2003; Saxena, Thornicroft, Knapp, & Whiteford, 2007; UN, 2011). These risk factors are further exacerbated by the dramatic changes that many Arab countries are currently experiencing due to serious armed conflicts, violence, and suppression (Amawi, Mollica, Lavelle, Osman, & Nasir, 2014).

The distinct Arab culture can significantly influence individuals experiencing depression and their families. Arabs usually seek help from close family members and/or traditional healers rather than mental health practitioners (Gilat, Ezer, & Sagee,

2010). The stigma of having a mental illness exists in all Arab countries and is associated with significant negative effects on patients and their families (Abdullah & Brown, 2011). Despite that the Islamic teachings require practicing Muslims, who constitute the majority of the population in Arabic countries, to seek treatment when they get sick, the stigma of mental illness strongly precludes Arabs who experience mental illnesses from following these teachings and seeking professional help (Dardas & Simmons, 2015). Moreover, many Arabs still believe that supernatural forces (e.g., Jinn, black magic, and the evil eye) cause mental illness symptoms (Aloud & Rathur, 2009; Weatherhead & Daiches, 2010). Thus, they often do not view mental illnesses as real illnesses that are subject to professional treatment as instructed in the Qur'an (Dardas & Simmons, 2015).

Understanding current patterns, determinants, and outcomes of adolescent depression specifically in Arab countries is important for planning effective strategies for primary prevention and intervention. Addressing this critical mental health issue needs sound evidence derived from the Arab literature itself. To our knowledge, no comprehensive data driven reviews have been published on adolescent depression in Arab countries. The purpose of this study was to provide such a review with the goal of identifying the necessary foundations for culturally competent mental health care practices to address the unique needs of Arab adolescents and their families. The specific aims for this systematic review were to: (a) describe the prevalence of adolescent depression in Arab countries; (b) describe how Arabs' spiritual and cultural values and

family and societal structure may affect Arab adolescents' depression; and (c) delineate the role of Arab nurses in adolescent depression treatment outcomes.

2.2 Methods

2.2.1 Search Strategy and Study Selection

The investigator (LD) initially searched the Database of Abstracts of Reviews of Effects (DARE) and the Cochrane Database of Systematic Reviews (CDSR) to ensure the absence of similar reviews. The databases PubMed, CINAHL, and PsycINFO were chosen as primary data sources for this review. PubMed provides an expansive abstracting and indexing of a wide array of journals in the fields of medicine, nursing, and healthcare system. CINAHL is the largest and most in-depth nursing research database. PsycINFO provides a comprehensive coverage of research in behavioral and social sciences, including psychology, nursing, social work, and other mental health-related disciplines.

The investigator (LD) and two research assistants then conducted a systematic review of each database using search algorithms to identify relevant studies regarding adolescent depression in Arab countries. The two research assistants were qualified nurses who hold a master's degree in nursing and have experience in research and literature reviews. An academic health center reference librarian helped building a combination of index and MeSH terms, which was used according to the requirements of each database (Tables 1, 2, and 3). The search key words were mainly focused on

'Arab' AND 'Adolescent' AND 'Depression'. The investigator (LD), who is a native Arabic speaker, conducted another search using the same English terms as well as an Arabic translation of them through the University of Jordan E-Library, which is one of the largest databases of Arab literature. No restrictions were applied on publication status and date. The last search was completed in December 2015. Articles were required to feature keywords in the title and/or abstract of full length publications, be peer-reviewed, and be written in English or Arabic. We decided to exclude articles that (a) included participants diagnosed with comorbid psychiatric conditions; since comorbidity has been associated with more severe symptom profiles, greater disability, increased service utilization, and poorer treatment outcomes that may not be related directly to depression (Kaminer, Connor, & Curry, 2007); (b) were conducted with Arab immigrants who live in Western communities; since the overarching goal of this review was to better understand adolescent depression within an Arab context; and/or (c) included participants with mixed age groups unless separate findings were reported for adolescents aged 10–19, which is the age range for adolescence as defined by the WHO, UNICEF, and UNFPA (UN, 1981; WHO, 2000).

Table 1: PubMed search trail

Search #	MeSH Terms and Key Words	Articles Revealed
#1	"depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depression"[All Fields] OR "depression"[MeSH Terms]	343247
#2	("adolescent"[MeSH Terms] OR "adolescent"[All Fields] OR "teen"[All Fields]) OR "youth"[All Fields])	1748591
#3	((("middle east"[MeSH Terms] OR ("middle"[All Fields] AND "east"[All Fields]) OR "middle east"[All Fields]) OR (("algeria"[MeSH Terms] OR "algeria"[All Fields]) OR ("bahrain"[MeSH Terms] OR "bahrain"[All Fields]) OR ("comoros"[MeSH Terms] OR "comoros"[All Fields] OR ("comoros"[All Fields] AND "islands"[All Fields]) OR "comoros islands"[All Fields]) OR ("djibouti"[MeSH Terms] OR "djibouti"[All Fields]) OR ("egypt"[MeSH Terms] OR "egypt"[All Fields]) OR ("iraq"[MeSH Terms] OR "iraq"[All Fields]) OR ("jordan"[MeSH Terms] OR "jordan"[All Fields]) OR ("kuwait"[MeSH Terms] OR "kuwait"[All Fields]) OR ("lebanon"[MeSH Terms] OR "lebanon"[All Fields]) OR ("libya"[MeSH Terms] OR "libya"[All Fields]) OR ("morocco"[MeSH Terms] OR "morocco"[All Fields]) OR ("mauritania"[MeSH Terms] OR "mauritania"[All Fields]) OR ("oman"[MeSH Terms] OR "oman"[All Fields]) OR Palestine[All Fields] OR ("qatar"[MeSH Terms] OR "qatar"[All Fields]) OR ("saudi arabia"[MeSH Terms] OR ("saudi"[All Fields] AND "arabia"[All Fields]) OR "saudi arabia"[All Fields]) OR ("somalia"[MeSH Terms] OR "somalia"[All Fields]) OR ("sudan"[MeSH Terms] OR "sudan"[All Fields]) OR ("syria"[MeSH Terms] OR "syria"[All Fields]) OR ("tunisia"[MeSH Terms] OR "tunisia"[All Fields]) OR ("united arab emirates"[MeSH Terms] OR ("united"[All Fields] AND "arab"[All Fields] AND "emirates"[All Fields]) OR "united arab emirates"[All Fields]) OR ("yemen"[MeSH Terms] OR "yemen"[All Fields]) OR ("arabs"[MeSH Terms] OR "arabs"[All Fields]) OR ("arabs"[MeSH Terms] OR "arabs"[All Fields] OR "arab"[All Fields])))) OR "Middle East"[Mesh]	307143
#4	#1 AND #2 AND #3	1327

Table 2: CINAHL search trail

Search #	Subject headings (MH) and Key Words	Articles Revealed
#1	MH "Depression+"	73,736
#2	Depression	102,300
#3	#1 OR #2	102,369
#4	MH "Adolescence+"	357,615
#5	Adolescence OR Adolescents OR adolescent OR teen* OR youth	380,493
#6	#4 OR #5	380,493
#7	MH "Arabs"	1,583
#8	Arab OR Arabs	3,031
#9	TI (Algeria OR Bahrain OR Comoros Islands OR Djibouti OR Egypt OR Iraq OR Jordan OR Kuwait OR Lebanon OR Libya OR Morocco OR Mauritania OR Oman OR Palestine OR Qatar OR Saudi Arabia OR Somalia OR Sudan OR Syria OR Tunisia OR United Arab Emirates OR Yemen) OR AB (Algeria OR Bahrain OR Comoros Islands OR Djibouti OR Egypt OR Iraq OR Jordan OR Kuwait OR Lebanon OR Libya OR Morocco OR Mauritania OR Oman OR Palestine OR Qatar OR Saudi Arabia OR Somalia OR Sudan OR Syria OR Tunisia OR United Arab Emirates OR Yemen)	10,832
#10	(MH "Middle East") OR (MH "Bahrain") OR (MH "Iraq") OR (MH "Jordan") OR (MH "Kuwait") OR (MH "Lebanon") OR (MH "Oman") OR (MH "Qatar") OR (MH "Saudi Arabia") OR (MH "Syria") OR (MH "United Arab Emirates") OR (MH "Yemen") OR (MH "Sudan") OR (MH "Somalia") OR (MH "Algeria") OR (MH " Mauritania") OR (MH "Egypt") OR (MH "Libya") OR (MH "Morocco") OR (MH "Tunisia") OR (MH "Djibouti")	18,251
#11	#7 OR #8 OR #9 OR #10	22,679
#12	#3 AND #6 AND #11	175

Table 3: PsychINFO search trail

Search #	Subject Headings (DE) and Key Words	Articles Revealed
#1	DE "Major Depression" OR DE "Depression (Emotion)"	120,349
#2	Depression	216,071
#3	#1 OR #2	216,071
#4	Adolescence OR Adolescents OR adolescent OR teen* OR youth	293,134
#5	DE "Arabs"	2,502
#6	Arab OR Arabs	6,626
#7	TI (Middle East OR Algeria OR Bahrain OR Comoros Islands OR Djibouti OR Egypt OR Iraq OR Jordan OR Kuwait OR Lebanon OR Libya OR Morocco OR Mauritania OR Oman OR Palestine OR Qatar OR Saudi Arabia OR Somalia OR Sudan OR Syria OR Tunisia OR United Arab Emirates OR Yemen) OR AB (Middle East OR Algeria OR Bahrain OR Comoros Islands OR Djibouti OR Egypt OR Iraq OR Jordan OR Kuwait OR Lebanon OR Libya OR Morocco OR Mauritania OR Oman OR Palestine OR Qatar OR Saudi Arabia OR Somalia OR Sudan OR Syria OR Tunisia OR United Arab Emirates OR Yemen)	13,201
#8	#5 OR #6 OR #7	17,999
#9	#3 AND #4 AND #8	95

2.2.2 Quality Appraisal

We adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher, Liberati, Tetzlaff, & Altman, 2009) to guide the process of identification, selection, and appraisal of the reviewed articles. We evaluated

each potential article based on quality criteria extracted from the WHO Reproductive Health Library guidelines for critical appraisal of systematic reviews (Abalos, Carroli, Mackey, Bergel, & de Estudios Perinatales, 2001) and Meline's (2006) inclusion and exclusion criteria for selecting studies for systematic review. We developed a structured study evaluation form based on the previous criteria and was independently used by the three reviewers to evaluate the elicited studies. The goal of the form was to minimize bias in locating, selecting, coding, and aggregating individual studies.

2.3 Results

The search of PubMed identified 1,327 potentially relevant articles, the search of CINAHL identified 175 articles, the search of PsycINFO identified 95 articles, and the search of the Arabic library identified 33 articles. After removing 1,311 duplicate publications and 120 articles with clearly irrelevant titles, a total of 199 unique articles remained for review at the abstract level. Of these, 47 articles were selected for further review in full text. After full-text review, 21 articles met the study's inclusion criteria. An additional six articles were identified via snowballing (Figure 8). The investigator (LD) used Garrard's (2014) matrix strategy for abstracting the selected 27 articles and building a database including the articles' types, main concepts, measures, samples, methods, main findings, and limitations.

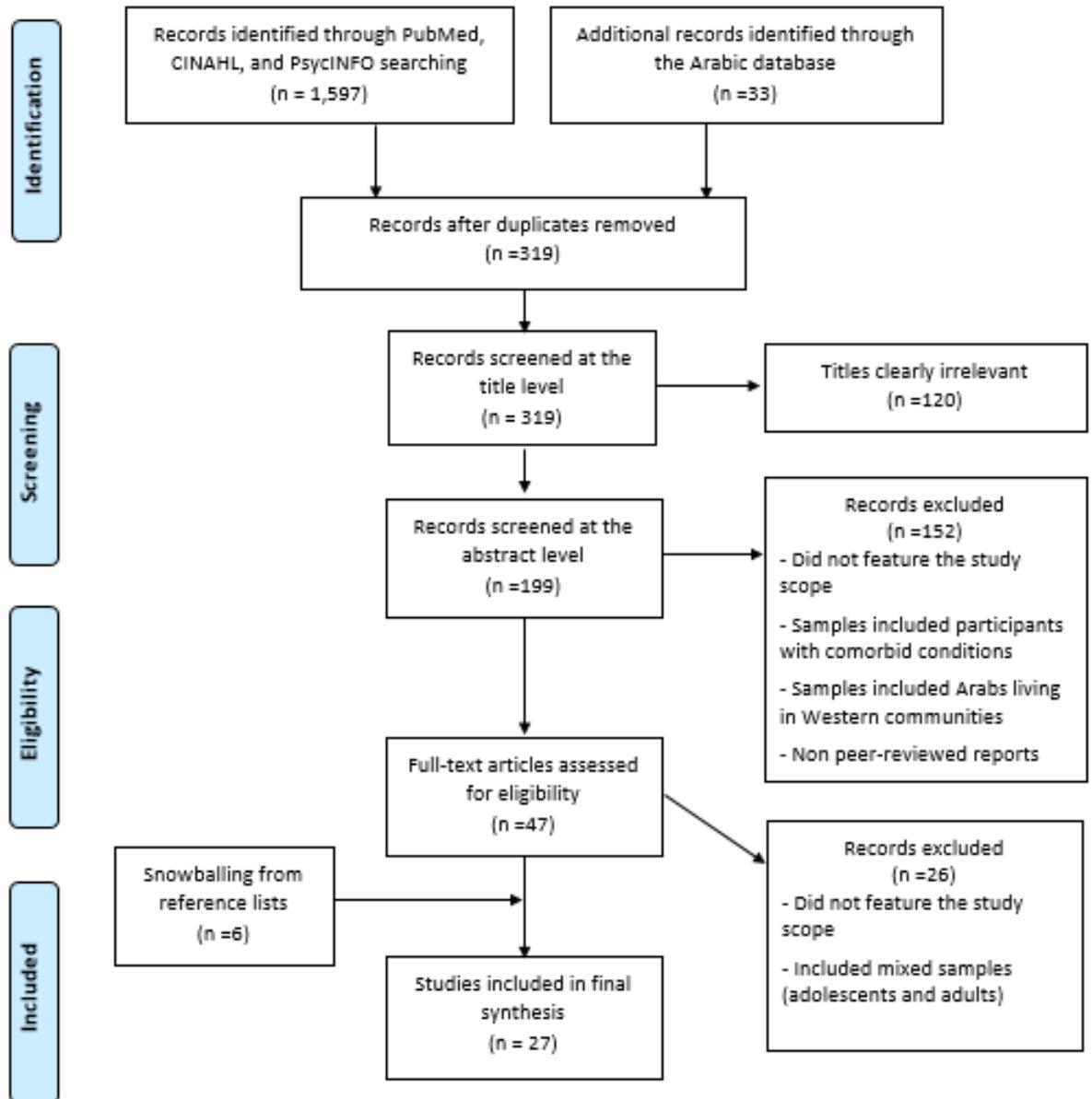


Figure 8: Literature review flow chart.

Source: Adapted from PRISMA 2009 Flow Diagram (Moher et al., 2009).

2.3.1 Study Characteristics

All the 27 studies included in this review were descriptive cross-sectional. No randomized controlled trials, longitudinal, or qualitative studies were found. Studies were conducted in Egypt, Palestine, Oman, Saudi Arabia, Jordan, Lebanon, Kuwait, and Sudan. Studies came from the medical, psychological, and educational disciplines. None of the studies was authored by nursing researchers or considered nursing implications. There was significant heterogeneity between the studies in terms of focus, methods, measures, and analyses, making a robust meta-analysis or statistical analysis difficult to conduct. Thus, a qualitative summary of the findings is presented. As part of this summary, we identified four emerging themes: (a) few robust prevalence estimates of adolescent depression are available in Arab countries; (b) depression varies based on the individual characteristics of Arab adolescents; (c) context influences Arab adolescents' risk of experiencing depression; and (d) the stigma of depression negatively impacts help-seeking process among Arab adolescents.

2.3.2 Theme 1: Few Robust Prevalence Estimates of Adolescent Depression Are Available in Arab Countries

Our search elicited 17 studies that claimed prevalence estimates of depression among Arab adolescents. In order to objectively evaluate the 17 studies, we used the Joanna Briggs Institute (JBI) critical appraisal checklist for studies reporting prevalence data (Munn, Moola, Riitano, & Lisy, 2014; Figure 9). The results revealed that none of the reviewed studies qualified as reporting prevalence data (Table 4).

JBI Critical Appraisal Checklist for Studies Reporting Prevalence Data

	Yes	No	Unclear	Not Applicable
1. Was the sample representative of the target population?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were study participants recruited in an appropriate way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the sample size adequate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were the study subjects and the setting described in detail?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the data analysis conducted with sufficient coverage of the identified sample?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were objective, standard criteria used for the measurement of the condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the condition measured reliably?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was there appropriate statistical analysis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Are all important confounding factors and subgroups differences identified and accounted for?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were subpopulations identified using objective criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Figure 9: The Joanna Briggs Institute (JBI) critical appraisal checklist for studies reporting prevalence data.

Table 4: Critical appraisal of studies reporting depression rates in Arab countries

Study	1	2	3	4	5	6	7	8	9	10
Ghareeb et al. (2004)	No	Yes	UN	No	Yes	No	Yes	Yes	No	No
Afifi (2004)	No	Yes	UN	No	Yes	No	Yes	Yes	No	No
Afifi (2007b)	No	Yes	UN	Yes	Yes	No	Yes	Yes	No	No
Celedonia et al. (2013)	Yes	Yes	UN	No	Yes	No	UN	Yes	No	No
Abdel-Fattah et al. (2004)	No	Yes	UN	Yes	Yes	No	No	Yes	Yes	No
Abdel-Fattah (2006, 2007)	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No

Table 4: Critical appraisal of studies reporting depression rates in Arab countries (cont.)

Study	1	2	3	4	5	6	7	8	9	10
Al-Gelban (2007)	No	Yes	UN	Yes	Yes	No	Yes	Yes	No	No
Al-Sharbati et al. (2003)	No	Yes	UN	Yes	No	Yes	Yes	Yes	Yes	Yes
Afifi et al. (2006), Afifi (2006b)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Elbedour et al. (2007)	Yes	Yes	UN	Yes	Yes	No	Yes	Yes	Yes	Yes
Ghareeb and Beshai (1989)	No	UN	UN	No	Yes	No	No	Yes	No	No
Abdullatif (1995)	Yes	Yes	UN	No	Yes	No	Yes	Yes	No	Yes
Al-Balhan (2006)	Yes	Yes	UN	No	Yes	No	Yes	Yes	No	Yes
Shaaban and Baashar (2003)	No	Yes	UN	No	Yes	Yes	Yes	Yes	No	No
Ismayilova et al. (2013)	Yes	Yes	UN	Yes	Yes	No	No	Yes	No	No

Note. Numbers represent same-order criteria appearing in Figure 2. UN: Unclear.

In the following sections, we critique the methodological quality of the 17 studies based on the JBI criteria. Table 5 summarizes the studies' geographical locations, sample characteristics, measures, and reported depression scores.

2.3.2.1 Sampling and recruitment strategies were inadequate to determine accurate prevalence rates

Our appraisal revealed that only six studies used nationally representative samples (Abdullatif, 1995; Afifi, Al Riyami, Morsi, & Al Kharusil, 2006; Afifi, 2006b; Al-Balhan 2006; Celedonia, Wilson, El Gammal, & Hagra, 2013; Elbedour, Onwuegbuzie, Ghannam, Whitcome, & Abu Hein, 2007; Ismayilova, Hmoud, Alkhasawneh, Shaw, &

El-Bassel, 2013), which makes it difficult to infer valid estimates of the prevalence of depression in the entire population. With the exception of Al-Sharbati, Al-Hussaini, and Antony (2003), who recruited participants from a child psychiatry clinic, the remaining 10 studies utilized convenience samples that were drawn from schools. According to the JBI criteria, prevalence studies require representative samples, and the sources of data and sampling frames need to be clear and appropriate. Of the six studies that utilized representative samples, only four reported how sampling was performed (Al-Balhan 2006; Celedonia et al., 2013; Elbedour et al., 2007; Ismayilova et al., 2013). Although it is not clear whether quality standards of random sampling were actually met but not reported, inadequate reporting often reflects inadequate methods (Liberati, Himel, & Chalmers, 1986).

An adequate sample size is important to ensure precision of the final estimate. Ideally, researchers reporting prevalence estimates need to clarify the process they adopted to determine their sample size and to ensure that their study is sufficiently powered to produce a reliable estimate of the measure(s) of interest (Munn et al., 2014). In addition, the sample sizes for subgroups' analyses need to be adequately powered. Our appraisal revealed that only four studies reported power analysis and sample size calculation (Abdel-Fattah & Asal, 2006, 2007; Afifi, 2006; Afifi et al., 2006b). Furthermore, only these four studies considered the prevalence of adolescent depression reported in the literature to estimate their sample size.

2.3.2.2 Descriptions of study subjects and setting lacked pertinent details to compare across countries

When the outcomes of interest vary in prevalence across different geographic regions and populations, the study sample should be described in sufficient detail so that other researchers can determine if it is comparable to the population of interest to them (Munn et al., 2014). As we mentioned previously, adolescent depression has considerable variability among countries and within groups' characteristics (e.g., gender, sociodemographic status, culture). It was difficult in this review to contrast the findings related to depression across the 17 studies and even among the studies that were conducted in the same Arab country due to insufficient descriptive data (Tables 4 and 5).

2.3.2.3 Significant variation in measures of depression limited findings

This review revealed that estimates of the prevalence of depression among Arab adolescents are significantly limited due to the considerable diversity in each of the study's methods and assessment criteria, and the lack of objective standardized assessment tools for depression. In fact, only two studies (Al-Sharbati et al., 2003; Shaaban & Baashar, 2003) conducted comprehensive assessment interviews to diagnose depression. All other studies used either available depression screening tools or investigator-developed questions to measure adolescent depression. Interestingly, even among studies that used available depression screening tools (e.g., Beck Depression Inventory [BDI], Child Depression Inventory [CDI]), only one study (Ghareeb & Beshai,

1989) validated the tool for Arab adolescents before implementing it. All other studies utilized tools that were originally developed for adult populations to capture depression among adolescents. See next section.

2.3.2.4 Valid and reliable tools to assess depression for Arab adolescents are limited

Only four studies were designed to develop and/or test the properties of depression assessment tools among Arab adolescents (Al-Balhan, 2006; Ghareeb & Beshai, 1989; Mahfoud et al., 2011; Makhoul et al., 2011). Ghareeb and Beshai validated the Arabic version of the CDI among Egyptian adolescents using a sample of 1,010 boys and 1,019 girls. The results supported the validity, reliability, and internal consistency of the factor structure of the CDI for use among Arab children (aged 7.5–9) and adolescents. However, Ghareeb and Beshai reported that their Arabic translation relied on a colloquial rather than a classical Arabic translation of the items and thus, their translation might limit the applicability of the translated measure in other Arab countries with different dialects. The reliability of the CDI also was examined by Al-Balhan (2006) with Kuwaiti adolescents. Al-Balhan administered the CDI to 2,299 randomly selected adolescents (males = 1,215; females = 1,084) aged 9–17. The CDI was translated into Arabic using a back-translation procedure. The results revealed an overall Cronbach's alpha reliability coefficient of 0.85. Test-retest reliability also was measured with a sample of 561 adolescents aged 9–17 and showed an overall correlation coefficient of 0.70. Al-Balhan concluded that the reliability and internal

consistency of the CDI supported its use in Kuwait as a measure of childhood depression.

The only available depression assessment tool developed specifically for Arab adolescents was the Arab Youth Mental Health scale (AYMH; Makhoul et al., 2011). These investigators developed the 28-item scale through a systematic procedure that took into account existing scales and input from Arab experts, researchers, and community members. The psychometric properties of the final scale were tested with a sample of 288 Palestinian refugees aged 10–14. According to the investigators, the scale was not named an anxiety/depression scale because the terms depression, anxiety, and disorder in Arabic, both linguistically and culturally, bring to mind stigmatizing medical conditions. As such, they speculated that presenting these terms to healthy youth may erroneously imply to the participants that they have a mental disorder. Makhoul et al. (2011) concluded that the new scale showed acceptable psychometric properties and was a contextually sensitive and culturally appropriate reliable scale to measure mental health (including symptoms of depression) among Arab adolescents. However, Makhoul et al. (2011) suggested that these findings could not be generalized to all Arabs given that the work leading to the development and validation of this scale was conducted in one Palestinian refugee camp as part of a larger intervention study in Lebanon.

To further test the psychometric properties of the AYM scale, Mahfoud et al. (2011) administered the scale to 153 Lebanese children aged 10–14 years. The results revealed a reasonably good construct validity and internal consistency. However, the scale showed weak discriminatory validity; half of all boys diagnosed with depression or anxiety through a clinical psychiatric assessment were missed by the scale. Mahfoud et al. (2011) considered the difference in the diagnostic capability of the AYM scale by gender as probably related to the nature of the items of the scale, which, for an Arab culture, might be biased toward detecting depression and anxiety among girls but not boys. As such, they suggested incorporating items that capture externalizing behavior suggestive of mental disorders among boys to strengthen the validity of the scale. Overall, available data on depression among Arab adolescents were obtained using tools that were originally developed and adapted for and by Western individuals.

Table 5: Adolescent depression in seven Arab countries

Author/year	Country	Sample	Depression Measure	Main Findings
Ghareeb and Beshai, (1989)	Egypt	2,029 adolescent students (50% males)	CDI	- Depression scores were below the cut-off for depression screening but higher than that reported in western literature. - Females had significantly higher depressive symptoms than males.
Afifi (2004, 2007b)	Egypt	Secondary analysis of 1,577 adolescent students (50% males).	CDI	- 4% of the sample had high depressive symptoms. - No gender-based scores were reported
Celedonia et al. (2013)	Egypt	Secondary analysis of 5,138 adolescent students (66% males).	Single yes/no question	- 32% of the sample reported signs of depression. - Females were significantly more likely to answer yes to the signs of depression question than males.
Abdel-Fattah et al. (2004)	Saudi Arabia	1,416 male adolescent students	Child Behavior Checklist- <i>parent</i> form	- 4.1% of the sample reported high depressive symptoms.
Abdel-Fattah and Asal (2006, 2007)	Saudi Arabia	490 adolescent students (62.4% males)	The Beck Depression Inventory	- 32% of the sample had mild depression, while 29% had moderate to very severe depression. - Females reported higher depression scores than males at a 1.5:1 ratio.

Author/year	Country	Sample	Depression Measure	Main Findings
Al-Gelban (2007)	Saudi Arabia	1,765 male adolescent students	The depression, anxiety, and stress scale	- 38% of the sample reported depressive symptoms, of them, 24% reported moderate to extremely severe symptoms, while 14% reported mild symptoms.
Al-Sharbati et al. (2003)	Oman	212 cases (65% boys, 26% adolescents) who attended child psychiatry clinic.	clinical interviews and DSM-IV criteria	- 8 cases (4%) were diagnosed with depression.
Afifi et al. (2006), Afifi (2006b)	Oman	Secondary analysis of 5,616 adolescent students (51% males).	CDI	- The overall mean score of the CDI was indicative of sub-threshold depression - Being a female was a significant predictor of depression in bivariate analysis but not when adjusting for other predictors in multivariate analysis.
Elbedour et al. (2007)	Palestine (Gaza Strip)	Secondary analysis of 229 adolescent students (52.8% males).	The Beck Anxiety Inventory	- Following serious violent attacks by the Israeli army, 14% had serious depression, 26% had moderate depression, 23% had mild depression, and 37% had minimal depression. - No significant differences in the depression scores were found between females and males.

Author/year	Country	Sample	Depression Measure	Main Findings
Ghrayeb et al. (2014)	Palestine	720 adolescent students (50.6% males).	The international Global School-based Health Survey.	<ul style="list-style-type: none"> - 24% had seriously considered attempting suicide, 16% reported feeling lonely, 55% reported that they had no close friends, and 19% had difficulty sleeping. - Males were significantly more likely to have considered attempting suicide, while females were more likely to report feeling lonely.
Abdullatif (1995)	Kuwait	1,981 adolescent students (50% males).	CDI	<ul style="list-style-type: none"> - 7% of boys and 4.8% of girls had high depression. - Males had significantly higher depression scores than females.
Al-Balhan (2006)	Kuwait	2,299 adolescent students (53% males).	CDI	<ul style="list-style-type: none"> - The mean depression score was below the cutoff for depression. - Females had higher depression scores than males.
Shaaban and Baashar (2003)	Sudan	1,107 female adolescent students.	The short Beck Depression Inventory, clinical interviews, and DSM-IV criteria	<ul style="list-style-type: none"> - 4.2% met the criteria for DSM-IV major depression, while 8.7% were classified as having partial depressive syndrome. - None of the girls who was identified as suffering from major depressive disorder had ever been diagnosed by a health care provider.
Ismayilova et al. (2013)	Jordan	8,129 adolescent students (50% males).	5-item scale developed by the researchers	<ul style="list-style-type: none"> - On average, adolescents experienced two symptoms of depression frequently. - Higher levels of depressive symptoms were observed among females - The poor psychometric properties of the scale limited the assessment of depression.

2.3.3 Theme 2: Depression Varies Based on the Individual Characteristics of Arab Adolescents

Almost across all the reviewed studies, being a female adolescent was significantly associated with higher depressive symptoms. Studies that reported this gender difference were from Egypt (Ghareeb & Beshai, 1989; Celedonia et al., 2013); Saudi Arabia (Abdel-Fattah & Asal, 2006; Abdel-Fattah & Asal, 2007); Oman (Afifi et al., 2006; Afifi, 2006b); Kuwait (Al-Balhan, 2006); and Jordan (Ismayilova et al., 2013). In a Kuwaiti study (Abdullatif, 1995), males had significantly higher depression scores than girls, which the investigator referred to measurement error or cultural or age-related characteristics rather than actual gender-based difference.

In response to these gender-based findings, some Arab researchers argued that depression assessment among Arab adolescents might lead to unreliable findings due to significant differences in depression symptom expression based on gender. The study by Gearing et al. (2013) found that adolescent Jordanian females were twice as likely as their male counterparts to display depression and internalizing disorders. Further, Gearing and colleagues reported that the co-morbidity of anxiety and depressive disorders was more common in adolescent females than males, and that depressed adolescent males had significantly higher rates of physical aggression and violence. Gearing et al. suggested that these findings might be explained by the role of Arab culture in which females learn to inhibit externalizing behaviors (e.g., aggression and violence) in early childhood and instead express adjustment difficulties as internalizing

problems (e.g., depressive symptoms). Al-Balhan (2006) also reported that it was not surprising that Kuwaiti girls tended to score higher on the CDI than boys due to the sociocultural disparity between both genders in displaying internalizing and externalizing disorders. In contrast to these findings, an Omani study (Afifi et al., 2006) found that males were slightly more likely to have depressive symptoms than girls. The authors reported that this difference in the presence of depressive symptoms was reduced to a non-significant level after controlling for differences between females and males in psychosocial variables. Mahfoud et al. (2011) therefore recommended adopting depression scales that capture both externalizing and internalizing symptoms of adolescent depression to reliably detect depression among Arab male adolescents.

Other personal characteristics that were associated with higher depressive symptoms included: (a) being an older adolescent (16–17) (Al-Balhan, 2006; Shaaban & Baashar, 2003); (b) being the youngest child; (c) having a higher number of siblings (Afifi, 2007b; Abdel-Fattah & Asal, 2006); (d) having a lower educational level; and (e) having lower socioeconomic status (Ismayilova et al., 2013). Religiosity, defined as following religious duties regularly, was significantly associated with reduced level of depressive symptoms primarily among 17–19 year olds (Ismayilova et al., 2013). Arab adolescents with a personal history of mental illness were more likely to have depressive symptoms than those who did not (Abdel-Fattah & Asal, 2006; Afifi et al., 2006). Similarly, those with a personal history of chronic physical illness were more likely to

have depressive symptoms than those with no such history (Abdel-Fattah & Asal, 2007; Afifi et al., 2006).

Adolescents who scored high on external health locus of control scales had higher depressive symptoms than those with high internal health locus of control (Afifi, 2007b; Afifi et al., 2006). Negative body image was associated with a higher level of depressive symptoms primarily among 17–19 year old females and males (Ismayilova et al., 2013). Adolescents who happened to have scars, disfiguring lesions, or limitations on activities were more socially isolated and depressed (Abdel-Fattah & Asal, 2007). Being physically abused by parents was associated with increased depression both among females and males (Ismayilova et al., 2013). In addition, a history of abuse during childhood or adolescence was significantly associated with mild depressive symptoms (Afifi, 2006b).

Depression was also associated with risk behaviors among Arab adolescents. Depression scores were higher among adolescent boys aged 14–16 years who reported ever drinking alcohol (Ismayilova et al., 2013). Furthermore, adolescents who showed high depressive symptoms were more likely to begin smoking, to smoke more, to continue smoking, and to find it hard to quit smoking (Afifi, 2007b). Adolescents who reported signs of depression were also more likely to have reported being involved in fighting or bullying behaviors (Celedonia et al., 2013). On the other hand, having a hobby, eating breakfast regularly, not smoking, sleeping enough at night, and doing

physical exercises protected against having depressive symptoms (Afifi et al., 2006). These findings were similar to what has been reported in western literature (Cairns, Yap, Pilkington, & Jorm, 2014).

2.3.4 Theme 3: Context Influences Arab Adolescents' Risk of Experiencing Depression

2.3.4.1 Parental and family context

Impaired parent-adolescent relationships have been shown to be related to depression among Arab adolescents. Adolescents who reported more supportive, open, and caring relationships with parents demonstrated lower depression scores (Ismayilova et al., 2013). Dwairy and Menshar (2006) also revealed that adolescents who had stronger functional connectedness with their parents and family tended to report significantly lower depression symptoms. Arab adolescents who had strong attachment to their families, specifically their parents, were less likely to engage in risky health behaviors and experienced less mental health problems like depression (Dwairy & Menshar, 2006). Adolescents with working mothers were more predisposed to develop emotional and /or behavioral disturbances than those with nonworking mothers (Abdel-Fattah & Asal, 2007).

The parenting style of Arab parents also has been shown to impact their adolescents' mental health and depression symptoms. Dwairy (2004a) found that an authoritative parenting style, meaning parents are demanding and responsive, was associated with better mental health outcomes and lower depression scores among

adolescents. A permissive parenting style, meaning parents are undemanding and responsive, was significantly associated with male adolescents' increased depressive disorders. Dwairy assumed that permissive parenting does not foster the masculine role expected from boys in an authoritarian/masculine society, and therefore the weak and dependent boy fails to adapt and faces rejection and is put at risk for poor mental health. On the other hand, a weak and dependent girl may fit with the normative feminine role of this society and therefore face less rejection and criticism. Dwairy's study also found that the authoritarian parenting style, meaning parents are demanding and unresponsive, showed no significant negative effect on adolescents' mental health. Rather, adolescents reported they followed their parents' direction in all areas of life and were satisfied with this way of living.

Interestingly, Dwairy (2004b) conducted another comparison study to explore the association between different parenting styles and the mental health of Arab Palestinian gifted and non-gifted adolescents. The gifted subjects were drawn from gifted children's centers to which they had been admitted after scoring above 140 in an intelligence quotient (IQ) test. Non-gifted adolescents were drawn from urban middle-class schools. In this study, a more authoritative style among the gifted adolescents was significantly associated with lower levels of depression, while a more authoritarian style among the adolescents was significantly correlated with higher levels of depression. Arab parents of gifted adolescents tended to be more authoritative and less

authoritarian than parents of non-gifted adolescents, resulting in more positive attitude of the gifted adolescents toward their parents and more cohesive and supportive family environment (Dwairy, 2004b). Other family factors that have been correlated with depression among Arab adolescents included having a family member with a psychiatric illness or chronic diseases (Abdel-Fattah & Asal, 2006). Depression scores were also significantly higher among adolescents who had lost a relative than among those without a history of relative loss (Abdel-Fattah & Asal, 2006).

2.3.4.2 War

War is associated with mental health problems in the Arab region (Amawi et al., 2014) and this association was identified for adolescent depression. In Kuwait, Abdullatif, (1995) noted that those who had lost a family member or had a family member who was a martyr or a prisoner of the Gulf War in 1991 had high depressive symptoms. Al-Balhan (2006) also reported that even after the conflict was over, Kuwaiti adolescents still suffered from depression, nightmares, and feelings of insecurity that could be related to negative experiences during times of war. Elbedour et al. (2007) also revealed that a significant proportion of Palestinian children and adolescents living in the refugee camps in the Gaza Strip often experience significant psychological distress and depression due to the accumulation of the Israeli war traumatic events such as death or injury of a family member or friends, or witnessing the demolition of homes and buildings. Ghrayeb, Rusli, Ismail, and Al Rifai (2014) also reported that the

extended war and political instability, which was combined with poverty and unemployment, had extreme negative health effects on the Palestinian population including adolescents. There were no studies documenting the impact of recent wars and armed conflicts occurring in many Arab countries on adolescent depression.

2.3.5 Theme 4: The Stigma of Depression Negatively Impacts Arab Depressed Adolescents' Help-Seeking Process

Arab adolescents' selection, utilization, and attitudes toward seeking help for depression are negatively affected by existing mental illness stigma, resulting in poor prognosis and a complicated illness trajectory. Gilat et al. (2010) found that Arab adolescents experiencing psychological symptoms like depression strongly prefer seeking help from parents or friends rather than seeking help from formal sources. In an additional qualitative analysis of the reasons for seeking/avoiding help, Gilat et al. revealed that confidentiality was a strong factor that determined the adolescents' willingness to seek formal help. Adolescents also felt reluctant to talk about their symptoms due to concerns that self-disclosure may be perceived as an individual weakness or that actively seeking out and engaging in treatment could bring further attention to their psychological problem, resulting in greater stigmatization. Interestingly, Gilat et al.'s study showed greater willingness from adolescents to seek formal help when resources were part of their schools (e.g., teachers and counsellors).

Shukair (2012a) found that among 163 Saudi adolescents aged 17–19, the majority held false beliefs and negative attitudes toward professional services and had less

knowledge regarding the existence of these services and the role of their providers. Khlaifah (1999) also found that the majority of Egyptian adolescents' believe that individuals diagnosed with mental illnesses like depression are dangerous, unpredictable, and often unable to succeed in their lives. Furthermore, the majority believed depression and other mental illness were probably due to psychosocial crises (67%), drug use (56%), genetic factors (48%), and poor ethical and religious connectedness (46%). Although the majority believed that receiving professional treatment would help treating mental illnesses, females had significantly lower positive attitudes towards seeking such treatment than males. Participants also were asked to what extent they agreed that certain treatment options would help address mental illnesses, and agreement percentages were as follows: reading from the Bible or Quran (54%), Electroconvulsive therapy (53%), psychiatric medications (44%), and herbal medicine (32%) (Khlaifah, 1999).

Some studies have reported gender differences in the perception and experience of depression and related stigma among Arab adolescents. For example, Shukair (2012a) found that getting a diagnosis of mental illness is more likely to damage Arab females' marital prospects or affect current marital relationships than is the case for males. This was also supported by Al-Balhan (2006) who considered the higher rates of depression among Kuwaiti girls a reflection of the cultural environment that puts more restriction on girls than boys, since it is perceived in the Kuwaiti culture that anything affecting the

girls will be a reflection on the family as a whole. As such, if a girl is suffering some type of mental health problems like depression, she is less likely to be taken for treatment.

According to Gilat et al. (2010), accessing professional services might be the turning point at which the stigma of depression is expected to significantly increase, with the recognition that a potentially “shameful” medical diagnosis might be made. Therefore, Al-Qutob (2005) suggested integrating mental health services into non-stigmatizing frameworks, assuming that since accessing mental illness institutions is often stigmatizing for Arab adolescents, it might be more helpful if mental health services are delivered in general health setting such as general medical clinics. In a study that explored the Jordanian public stigma towards adolescent depression, Gearing et al. (2015) found that being a female adolescent with depression was associated with higher levels of stigma among the respondents. For example, participants reported a greater willingness to accept adolescent males with depression in their child’s school than females with depression. Furthermore, participants were less likely to hire females receiving treatment for depression than either males or untreated females, indicating that females with depression may be further stigmatized by engaging with treatment. Gearing et al. (2015) suggested that although having depression or seeking treatment is not without stigma, alleviating the symptoms through effective treatment may lessen stigma as the condition becomes less visible and problematic.

2.4 Discussion

To the best of our knowledge, this is the first systematic review of the literature on Arab adolescent depression. We detailed four themes in this review and these were structured around the prevalence of adolescent depression, the individual differences in adolescent depression, and the stigma of adolescent depression in Arab countries.

2.4.1 Prevalence Profile

High depressive symptoms were reported across almost all studies, calling for national and regional intervention programs that promote the mental health of Arab adolescents. Moreover, 15 out of the 17 studies that reported depression rates/percentages in their samples were 10 to 25 years old and thus, they do not reflect the dramatic changes that Arab societies have encountered recently. The pronounced lack of recent knowledge on the prevalence of adolescent depression and its associated burden in Arab countries is alarming given the considerable clinical and research findings linking depression to increased suicide attempts among adolescents. Further, untreated adolescent depression often evolves into relapsing conditions with significant impairments in social development and poor mental health in adulthood (Patel, Flisher, Hetrick, & McGorry, 2007). Therefore, early detection, primary prevention, and proper treatment efforts for adolescent depression are strongly needed in Arab communities. In particular, findings from this review support the need for programs and services that enhance adolescents' social and emotional skills, reduce violence in schools, promote

healthy life styles, and create a space for extracurricular activities for adolescents to feel productive and strengthen their social network. Programs that strengthen parent–child relationships and enhance parenting styles are also of special importance since ineffective parenting styles have been shown to be related to the vulnerability, development, maintenance, and recurrence of depressive disorders in adolescence (Birmaher et al., 2000), and are strong risk factors for adolescent suicide (Wagner, Silverman, & Martin, 2003).

Future prevalence studies need to give careful consideration to measurement instruments that are both developmentally and culturally appropriate. Ensuring developmentally and culturally sound measurement tools for depression among Arab adolescents requires taking into account the different ways in which the construct of depression is expressed across cultures and age groups. It is also important to understand the conceptions of mental health and illness among those living in the Arabic context and speaking Arabic. Interestingly, Obermeyer, Bott, & Sassine (2015) speculated that depression and mental states among Arab adolescents are constructed and expressed differently than among adolescents in other cultures. Arabs tend to not interpret cognitive symptoms of depression (e.g., feelings of worthlessness, preoccupation with death), and physical symptoms of depression (e.g., fatigue, insomnia, changes in appetite) as mood symptoms. Thus, such symptoms may not be

articulated by Arab adolescents as potential depressive symptoms, which can discourage their seeking mental health support services.

2.4.2 Gender Differences

A “gender approach to health,” in which researchers and clinicians thoughtfully consider women’s and men’s roles and relationships, which are shaped by social, economic, political, and cultural factors in addition to biology, is crucial to therapeutic and holistic care (Afifi, 2007a). In the arena of mental health and illness, gender is seen as a critical determinant not only for the prevalence rates of various mental disorders, but also for the individual’s susceptibility, diagnosis, treatment, and adjustment to a certain disorder (Afifi, 2006a; Nolen-Hoeksema, 2001). Our review revealed that the prevalence, expression, and experience of adolescent depression varied between Arab male and female adolescents, with females having higher risk for experiencing depression, developing psychiatric comorbidities, and experiencing public stigma. The reviewed articles (Afifi et al., 2006; Al-Balhan, 2006; Gearing et al., 2015; Mahfoud et al., 2011) related these differences to the sociocultural context of Arab adolescents in which a female is expected to inhibit externalizing behaviors and instead express adjustment difficulties in the form of internalizing problems like depression. As such, while diagnostic criteria for major depressive disorder and depressive episodes capture both internalizing and externalizing symptoms of depression, it is important that Arab clinicians consider gender differences in the perception and expression of these

symptoms. This recommendation is supported by the biobehavioral interactive models, which address the coordination of physiological and behavioral responses during social contact. In particular, girls' higher rates of low instrumental coping styles and hormonal changes in conjunction with greater risk of experiencing negative life events are factors that can potentially contribute to the higher rates of depression in girls (Cyranowski, Frank, Young, & Shear, 2000). As such, gender analysis is essential to improving the epidemiology, detection, and treatment of health problems, and also increasing the potential for greater public participation in mental health care.

2.4.3 Stigma

There is a general consensus that the stigma associated with mental illness is one of the key barriers to effective treatment. In their concept analysis of mental illness stigma in Arab culture, Dardas and Simmons (2015), concluded that mental illness stigma strongly exists in all Arab countries and has significant negative effects on patients' and their families' health and well-being. Although the stigma related to mental illnesses like depression is not uncommon across all countries and cultures (Brohan, Gauci, Sartorius, & Thornicroft, 2011; Calear, Griffiths, & Christensen, 2011), the impact that stigma has on individuals' help-seeking behaviors is stronger in developing countries (Eaton et al., 2011; Dardas, 2014; Dardas & Ahmad, 2014a; Gearing et al., 2013; Thapar, Collishaw, Pine, & Thapar, 2012). This review supported this notion and found that Arab adolescents who experience depression have poor engagement in,

adherence to, and utilization of mental health services due to their fear that actively seeking out treatment could bring further attention to their depression, resulting in greater stigmatization.

Understanding public stigma as one of the main barriers to treatment is an important first step in promoting the health and well-being of depressed Arab adolescents and their families. Given that stigma manifests differently in different social contexts (Dardas & Simmons, 2015), we need to further explore how the stigma of depression manifests itself in Arab communities and the mutual relationship between the public stigma and engagement in treatment. We also need to also explore how Arab adolescents' cultural background, education, gender, class, and religion can impact the perception, experience, and response to depression. For example, although the Islamic teachings require patients to seek treatment whenever needed, the fear of mental illness stigma keeps depressed adolescents from following these Islamic teachings and seeking the appropriate treatment. Rather, they tend to seek help through social networks and traditional healers, delaying receiving the proper treatment, worsening their symptoms, and often bringing greater stigmatization (Figure 10).

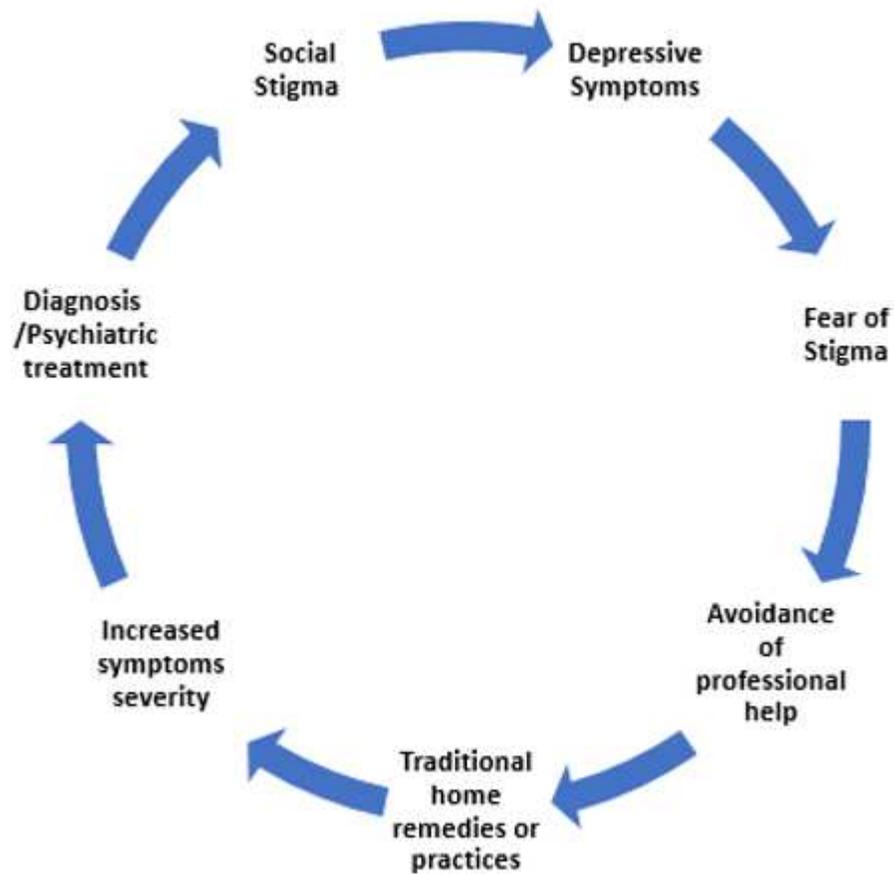


Figure 10: The impact of mental illness stigma on help-seeking process among Arab adolescents experiencing depressive symptoms.

Breaking this maladaptive chain of responses to depression requires combating the stigma associated with depression symptomology, diagnosis, and treatment. For example, traditional healers are perceived by most Arab mental health researchers as an obstacle to early detection and proper treatment of depression, and recommendations are often posted to policy makers and practitioners to challenge their role in the community (Alosaimi et al., 2014; Gilat et al. 2010; Fakhr El-Islam, 2008). However, if we advocate for culturally-sensitive health practices, we need to recognize that traditional

healers are part of the culture. Rather than segregating these practices, we recommend providing health services that are based on current evidence but also align with traditional, cultural, and religious values. Professional interventions need to be understood as complementing rather than substituting for culturally sensitive community responses. We recommend that Arab mental health researchers, care providers, and policy makers have a collaborative purpose to: (a) understand the mechanisms that link informal and traditional care providers to individuals' beliefs and practices; (b) understand the potential negative as well as positive influences that these traditions can exert on the public mental health, and then; (c) officially integrate traditional healers into the mental health system. Establishing relationships with traditional healers and including them in program planning and implementation may increase acceptance of new services and encourage those who believe in traditional over modern mental health practices to adhere to treatment (Al-Krenawi, Graham, Dean, & Eltaiba, 2004; Okasha, 2001). The development of models of care that include integration of indigenous health practices into modern mental health systems, and that are established in synchrony with Arab/Muslim cultural and religious value systems, can effectively raise awareness and will encourage mental health-care utilization.

2.4.4 Where are the Nurses?

Unfortunately, this review did not elicit any research within the nursing field related to depression among Arab adolescents. However, such a dearth of nursing

findings does not preclude us from addressing our third aim of delineating the role of Arab nurses in adolescent depression's treatment outcomes. Nurses, who form the largest proportion of health personnel in all Arab countries (Shukri, 2005), are uniquely situated to help Arab depressed adolescents and their families restore, maintain, and/or promote their mental health and wellbeing. Nurses are the caregivers' advocates in a fragmented care system in which culturally-sensitive care is rarely achieved (Mariano, 2007).

Arab nurses in all practice settings need to hold responsibility for establishing the treatment alliance with depressed adolescents using a wide range of therapeutic techniques. It is the nurse who is supposed to give adolescents the opportunity to discuss their person-environment situation and vent their overwhelming feelings. It is also the nurse's responsibility to assist depressed adolescents in developing appropriate problem-solving strategies and developing healthy lifestyles changes to handle their stressors. Arab nurses in particular, need to thoughtfully apply depression assessment and intervention methods that are not adapted to their Arab patients and do not reflect the unique the social-cultural context that they live in.

2.5 Conclusion

This review uncovered areas that need further research and will serve as a foundation of knowledge helpful in developing future interventions addressing adolescent depression within Arabs mental health care systems. The findings highlight

the need for more community-based detection efforts that employ developmentally and culturally appropriate measurement instruments. Furthermore, investigating the factors associated with developing depressive symptoms and the factors associated with delayed help-seeking behaviors specifically among Arab adolescents is strongly recommended. Help-seeking is considered a critical pathway between the point of first recognizing depression and the point of entering the mental health care system and thus, policymakers need to establish effective plans to encourage Arab depressed adolescents and their families to seek professional help. Nurses in all settings are at the forefront to provide the needed support services for adolescents at risk for depression or in need of treatment.

3. The Stigma of Mental Illness in Arab Families: A Systematic Review and Concept Analysis

3.1 Introduction

According to the World Health Organization (WHO, 2001b), 25% of the worldwide population experience a mental disorder at some time during their lives. Less than 30% of those who receive a mental health diagnosis seek treatment, and fewer than 40% of those who receive treatment are adherent. The WHO (2001b) identified the stigma of mental illness as one of the key barriers to effective treatment due to its negative impacts on individuals' mental health seeking behaviors, and recent studies have underscored this. For example, a study in Australia showed that individuals who report high perceived stigma would be embarrassed to seek treatment and if they did obtain help, they would expect negative reactions from both providers and other people who know them (Barney, Griffiths, Jorm & Christensen, 2006). A U.S. study (Menke & Flynn, 2009) showed that stigma prevented individuals with moderate psychological symptoms from seeking care, increasing their symptom burden. Conversely, a Canadian study (Wang, Fick, Adair, & Lai, 2007) showed that individuals who endorsed evidence-based treatments for mental health problems, such as antidepressants and professional care, were less likely to report personal stigma. Thus, combating stigma is a critical step towards promoting the health and wellbeing for individuals with mental disorders and their families.

Addressing the stigma of mental illness is of special importance in developing countries, including most Arab countries, where formal mental health resources are scarce and people with mental illness experience the compounded disadvantages of poverty and illness stigma (Al-Krenawi, 2005). Arabs have a shared set of values, beliefs, and traditions that are substantially different from those of Westerners. According to Fakhr El-Islam's (2008) review of literature on the influence of Arab culture on mental illness, Arab cultural beliefs and practices can be decisive in shaping Arabs' perceptions and management of psychiatric disorders. Further, the Arab sociocultural context can affect their selection, utilization, and attitudes toward mental health services. In particular, Gearing et al. (2014) reported that the stigma attached to mental illness is one of the main factors that negatively influences Arab individuals with mental illness accessing mental health services. In a review of literature, Al-Kernawi (2005) similarly found that Arab patients with mental illness often somatize their psychiatric symptoms to avoid the public negative reactions toward their illness.

Given that accessing mental health services is a critical step towards reducing the burden of mental illness, considering stigma as one of the factors that may disrupt seeking mental health care in Arab communities is an important goal for healthcare providers and policymakers. However, most of the approaches in the literature for challenging mental illness stigma were originally developed and adapted for Western communities. Stigma is embedded in its social context. What may be considered

acceptable in one society may be considered unacceptable and open to stigmatization in other societies (Abdullah & Brown, 2011). To date, little is known about how mental illness stigma manifests within the Arab culture making it difficult to design and test interventions that support Arab individuals with mental illness and their families in treatment seeking and adherence. To address this gap, it is important to clarify the concept of 'mental illness stigma' itself. According to Rodgers (2000), through analyzing concepts within different contexts, their scope becomes clearer, as do the situations that are characterized effectively using the concepts. Based on the knowledge we gain from clarifying the concepts, directions for further development are generated.

Given the unique sociocultural influences within Arab countries, a concept analysis of stigma within the context of Arab culture is critical for the effective design, implementation, and dissemination of nursing interventions to improve the diagnosis and treatment of mental illness among Arabs. Therefore, the purpose of this analysis is to enhance understanding of mental illness stigma in Arab families and its practical implications for nursing. The analysis addresses three specific research questions: (1) How do Arabs' spiritual and cultural values and health beliefs and practices affect the attributes of mental illness stigma? (2) What is the impact of mental illness stigma on Arab patients and their families? and (3) How can nurses working with Arab patients integrate the concept of mental illness stigma into a culturally competent practice?.

3.2 Methods

Rodgers' evolutionary method of concept analysis was used. According to Rodgers and Knafl (2000), concept analysis is necessary because concepts are dynamic, fuzzy, and context dependent. Furthermore, because phenomena, needs, and goals change, concepts must be continually refined and variations introduced to achieve a clearer and more useful meaning. Using Rodgers' method (Table 6), we analyzed research articles to identify attributes, antecedents, consequences, and contextual variations of the concept of mental illness stigma.

Table 6: Rodgers' concept analysis method

Term	Definition
Surrogate Terms	Different terms to express the same concept.
Related Concepts	Concepts that are related to each other, but are not the same because they do not have the same attributes.
Attributes	The defining characteristics most frequently associated with the concept.
Antecedents	The situations, events, or phenomena preceding the presence of a concept.
Consequences	The events or phenomena that results from the concept.
Contextual variations	The variations in the attributes of the concept within the context of disciplinary, social, cultural, or historical situations.

3.2.1 Primary Data Sources

We searched the databases PubMed, CINAHL, and PsycINFO using the search terms 'stigma', 'Arab', and 'mental illness'. These three databases were chosen because they cover journals across relevant disciplines. PsycINFO has coverage of mental health-

related disciplines including psychology, social work, psychiatry, nursing, health administration, pharmacology, rehabilitation, epidemiology, and other human services professions. PubMed covers an array of life science and biomedical journals that span the fields of medicine, nursing, dentistry, and health care system. CINAHL is a leading nursing database that can help derive literature that explores the use of the concept of mental illness stigma specifically in nursing. To maximize the search in the databases, we used the thesaurus function for the keyword 'stigma'. Based on this step, we conducted an additional search after replacing stigma with the words 'attitudes', 'discrimination', 'labeling', 'prejudice', 'social acceptance', and 'stereotypes', and connected each of them with the search terms 'Arabs' and 'mental illness' using the Boolean's operator 'AND'.

Another search was conducted using the same terms translated into Arabic, through the University of Jordan E-Library. This E-library is considered one of the largest databases of Arab literature. It provides full text for most of the peer-reviewed journals in different Arab countries. We searched articles published prior to September 2014. No restrictions were applied for publication date. The search was completed in November 2014. Potentially relevant studies were identified using a multistep process (Figure 11). A total of 2,767 records were retrieved from the primary key word search. Of these, 1,989 duplicates were removed, leaving a total of 778 articles. Two qualified research assistants independently screened titles to remove any study that clearly lacked

relevance. Both reviewers negotiated and reached consensus in situations where there was not initial agreement of selection. We screened the abstracts of the remaining articles (N=363) to further exclude any irrelevant records.

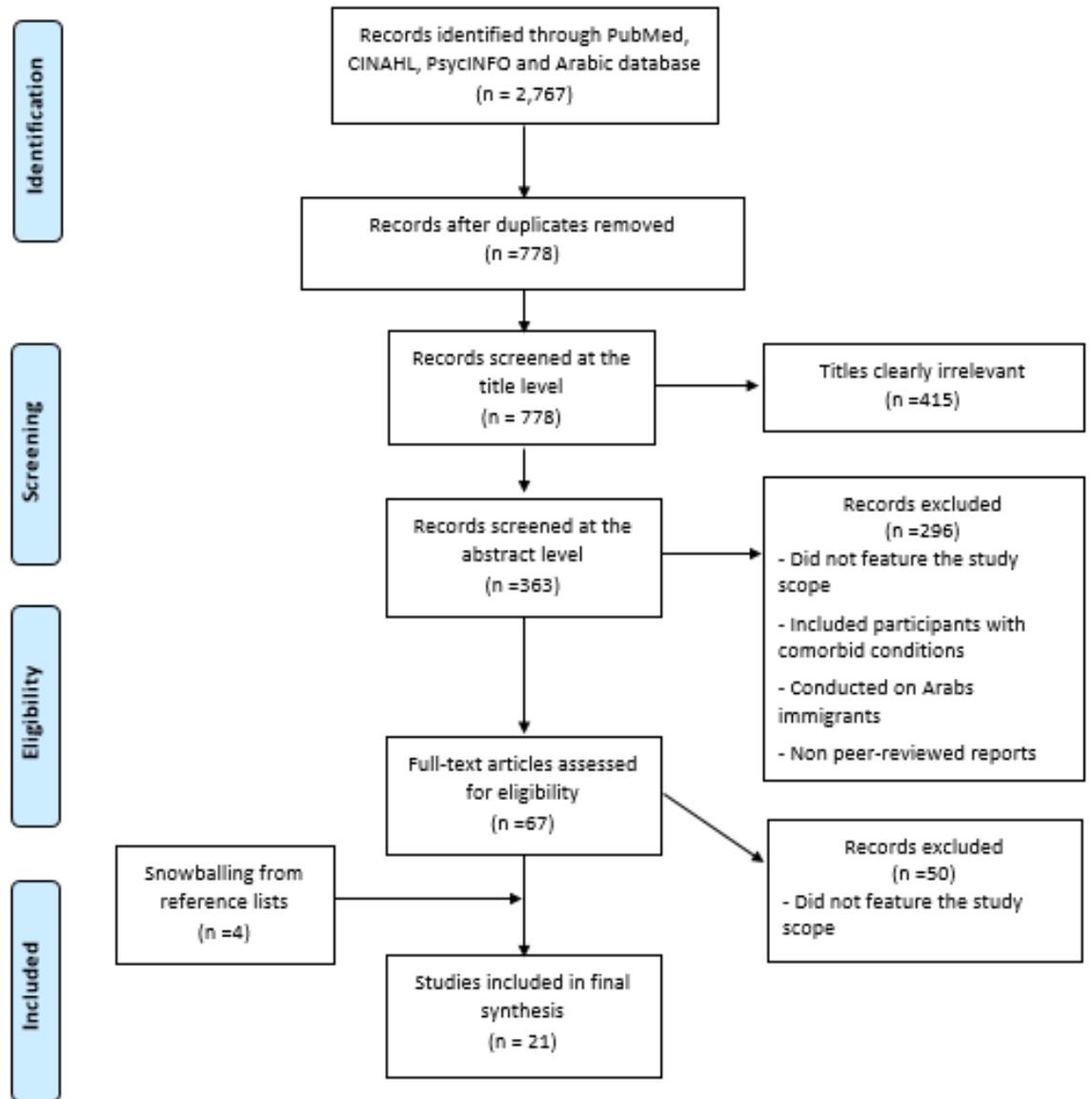


Figure 11: Literature review flow chart

We excluded articles if they (1) included participants diagnosed with comorbid conditions other than mental illnesses, (2) were conducted on Arab immigrants who live in Western communities, or (3) did not explicitly report findings related to mental illness stigma. We used the snowball technique for building literature described by Garrard (2014) with the 17 collected articles which led to four more articles. A total of 21 articles were finally retained

3.3 Results

3.3.1 Origins of Stigma concept: From Slaves to Mentally Ill

According to Goffman (1963), the term stigma originated from the ancient Greek word 'stizein' which referred to a bodily sign (burn or cut) designed to expose something unusual and bad about the moral status of certain individuals who were usually criminals or slaves. Interestingly, an opposite connotation of the term was used in the United States prior to the 1800s, when 'stigma' was tied to the suffering of Christ and implied a positive tone (Goffman, 1963). The current use of stigma as related to mental illness can be traced back to the second half of the 19th century when the word was used to refer to the negative characteristics of some sicknesses. The concept was formally labeled and defined as a societal problem for the first time in Goffman's book (1963).

In the Arabic language, the word '*Wasmah*' refers to the meaning implied in the concept of stigma. The word '*Wasmah*' is derived from the word '*Alwasm*' which means

the process of attaching signs to things or places so they can be easily identified. It means attributing social disgrace and shame to people due to their socially unacceptable behaviors. As is the case in the English language, the word '*Wasmah*' has been attached to the word for mental illness, '*Almarad Alnafsy*', and it implies the negative beliefs, attitudes, and behaviors toward people with mental illness.

3.3.2 Definitions

Researchers agree there is a lack of consensus on the definition of stigma (Link, et al., 2004). Stigma has various meanings and definitions and scientists from diverse disciplines have conceptualized the term with no concordance on the usefulness of only one definition (Table 7). Available definitions of stigma are subject to two main debates. First, the definitions lack focus on the central origin of stigma. Some researchers view stigma as a problem of knowledge; some believe it to be a form of negative attitude; and others believe that stigma should be considered only when actual neglecting or discriminating behaviors exist. For example, in the most widely cited definitions of stigma provided by Goffman (1963), the stigmatized individual feels ashamed and less valued than others. Such reactions, however, are not necessary for stigma to exist according to Schreiber and Hartrick (2002).

Table 7: Definitions of stigma concept in the literature

Definition	Author
An attribute that is deeply discrediting and that makes the person different from others and of a less desirable kind, and motivate efforts by the stigmatized individual to hide the mark when possible.	Goffman (1963)
A visible or apparent characteristic indicative of some undesirable or discreditable quality, action or circumstance.	Brown (1998)
Stigmatization occurs when a person possesses (or is believed to possess) some attribute or characteristic that Conveys a social identity that is devalued in a particular social context.	Crocker et al. (1998)
Stereotypes or negative views attributed to a person or groups when their characteristics or behaviors are viewed as different from or inferior to societal norms.	Dudley (2000)
A mark of shame, disgrace or disapproval which results in an individual being rejected, discriminated against, and excluded from participating in a number of different areas of society.	WHO (2001c)
Stigma exists when elements of labeling, stereotyping, separation, status loss, and discrimination co-occur in a power situation that allows these processes to unfold.	Link and Phelan (2001)
Stigma occurs when one person is labeled deviant while the other person is validated as normal.	Schreiber and Hartrick (2002)
A collection of negative attitudes, beliefs, thoughts, and behaviors that influence the individual, or the general public, to fear, reject, avoid, be prejudiced, and discriminate against people with mental disorders.	Gary (2005)
A relationship and context specific phenomenon that it does not reside in the person but rather within a specific social context.	Major and O'Brien (2005)
A pervasive and global devaluation of certain individuals on the basis of some characteristic they possess, related to membership in a group that is disfavored, devalued, or disgraced by the general society.	Hinshaw (2007)
A severe social disapproval due to believed or actual individual characteristics, beliefs or behaviors that are against norms, be they economic, political, cultural, or social.	Lauber and Rossler (2007)

Definition	Author
Any attribute, trait or disorder that marks an individual as being unacceptably different from the “normal” people with whom he or she routinely interacts, and that elicits some form of community sanction.	Yang et al. (2007)
A mark separating individuals from one another based on a socially conferred judgment that they are tainted and ‘less than’ and which lead to eliciting negative attitudes to its bearer.	Pescosolido, Martin, Lang, and Olafsdottir (2008)

The second debate is related to the perspective from which stigma is experienced (the stigmatized versus the stigmatizer). Some definitions included only the stigmatizer’s perspective (Schreiber & Hartrick, 2002), while others included both the stigmatized and the stigmatizer’s perspectives as interdependent (Goffman, 1963; Pescosolido et al., 2008). To address this issue, the psychology literature has deduced subcategories from the broad concept of stigma. Based on this view, individuals can experience stigma two ways, social stigma and self-stigma. Social stigma refers to the general public's discriminatory response to people with mental illnesses, while self-stigma is the negative attitudes people have about themselves as a result of internalizing stigmatizing ideas held by society (Corrigan, 2004). However, it should be noted that authors are not consistent in using the terms social and self-stigma. Table 8 includes the most commonly used concepts to refer to social and self-stigma. As in most cultures, the sociocultural and demographic characteristics of both the stigmatizers and the stigmatized Arab individuals influence how stigma is activated and perceived.

Table 8: Surrogates for the terms self-stigma and social-stigma

Self-stigma	Social stigma
Internalized stigma	Externalized stigma
Internal stigma	External stigma
Felt stigma	Enacted stigma
Implicit stigma	Explicit stigma
Lived stigma	Public stigma
Perceived stigma	Experienced stigma
Discreditable stigma	Discredited stigma

3.3.3 Surrogate Terms and Related Concepts

According to Corrigan (2004), the terms prejudice and discrimination served as surrogates for stigma during the 1960s–1990s. However, in late 1990s, stigma, prejudice, and discrimination were used in the psychology and sociology literature to describe different phenomena which led to misunderstanding of these concepts. Therefore, the National Institute of Mental Health (2006) (as cited in Phelan, Link, & Dovidio, 2008) called for involved researchers to address the meanings of the three concepts in a special issue. Prejudice and discrimination were analyzed and re-clarified to serve as related terms for stigma.

According to Corrigan (2000), the terms prejudice, discrimination, and stereotypes are considered the cognitive and behavioral constructions of stigma. Shukair (2012b) applied Corrigan’s (2000) stigma model showing how the three concepts operate in the Arab community. According to this adapted model, the process of mental illness stigma begins with cues or indicators that a person has a mental illness (e.g., psychiatric

symptoms, unusual physical appearance or social interactions). These cues, when severe and attached to a diagnosis of mental illness, trigger the public stereotypes that generally exist regarding people with mental illness (e.g, violence, incompetence, dependence, and/or being hopeless cases). Holding these stereotypes may lead to negative attitudes towards persons with mental illnesses, which can ultimately bring about discriminatory and negative actions towards them (Shukair, 2012a).

Finally, there is disagreement on whether the term “labeling” is considered a surrogate or related term for stigma. For example, Link and Phelan (2001) have argued that in contrast to stigma, labeling has both positive and negative aspects. Labelling may provide categorization for the individual’s problems and thus, help professionals provide the needed care based on that category and help the public to give special concern to individuals under certain categorical labels. Conversely, labeling may make labeled individuals more vulnerable by evoking public discriminatory responses against them. In this analysis, we suggest “negative labeling” as a related term for stigma.

3.3.4 Defining Attributes of Stigma

According to Rodgers and Knafl (2000), attributes are the defining characteristics most frequently associated with a concept. Attributes related to stigma are usually reported as a cluster. However, we need to differentiate social stigma attributes from self-stigma attributes. Based on Corrigan’s (2004) model, the attributes of social stigma include analysis, features of the stigma model will be adopted to understand the

cognitive, emotional, and behavioral attributes of social and self-stigma. Based on this model, the attributes of social stigma include: (1) hurtful representations of the person with mental illness, (2) discrediting the person with mental illness, and (3) treating the person with mental illness as being different from others. An attribute of self-stigma is an unpleasant personal experience due to internalizing the society's stereotypes and unfavorable attitudes. By considering these two categories of attributes, this analysis can answer the question of whether stigma might exist if the person with mental illness did not show negative reactions to people's prejudicial attitudes. The answer is yes, social stigma has different attributes and can exist without self-stigma.

3.3.5 Antecedents

Researchers agree on two main factors that must exist prior to the occurrence of 'social' mental illness stigma: (1) having a mental illness, and (2) the presence of societal or cultural norms that reject persons with mental illness or perceive them as being different and/or less than others. In addition, antecedents of 'self' mental illness stigma include: (1) the individual's 'acceptance' of others' devaluation, and (2) having insight into mental illness. It is important to note that the presence of mental illness *alone* may not be enough to activate social stigma in Arab families. According to Al-Krenawi (2005), Arabs generally tolerate mental disturbances and do not stigmatize them as long as they do not result in out of control or shameful behavior (e.g., insulting elder people, stripping off clothing, making inappropriate sexual remarks or behaviors). Another

important issue is that Arabs do not stigmatize mental illness as long as they believe it is related to Jinn possession, evil eye (*hasad*), or black magic (*sehr*). For them, these are supernatural powers that need specific religious and cultural practices to overcome. The beliefs that a mental illness is a “test” from God, a chance to reconnect with God, or a result of God’s will and that only His will cure it are also factors that may de-stigmatize mental illness (Youssef & Deane, 2006). However, such beliefs may induce the stigma of mental illness from a different perspective: that mental illness is a punishment for one’s sins or is the result of a person’s weak faith (Aloud, 2004; Weatherhead & Daiches, 2010).

Some authors suggest that being in a ‘relationship’ with someone who has mental illness can be an antecedent of social stigma (Major & O’Brien, 2005). El-Islam (1994) discussed that ‘associative stigma’ is a prevalent occurrence in Arabian Gulf countries, and that social shame associated with a family member’s psychiatric diagnosis and/or abnormal behavior not only brings social shame to the patient but also to the entire family. Therefore, traditional people from Arab countries, especially those who live in extended families, tend to discuss issues related to mental illness within the family rather than involving outside members including psychiatric or other health professionals.

However, other researchers have shown that being in relationship with someone who has mental illness can reduce both social and self-stigma (Sandelowski & Barroso, 2003). Arab literature has revealed positive interchangeable impacts for individuals with

mental illness and their families. The extended family system is often the first line of defense against potential life stressors. Arabs who experience mental illnesses and have strong attachment to their families are less likely to engage in risky health behaviors and experience less mental health problems (Dwairy, 2004; Eapen et al., 2008). On the other hand, having a member with mental illness can lead to positive gains for the Arab family, including personal growth, increased awareness of people with mental illness, improved relationships with others, greater compassion and understanding of people who are different, increased patience and empathy, developing new coping strategies, and finding new resources and network (Dardas & Ahmad, 2015a,b ; Hastings & Taunt, 2002; Kayfitz, Gragg & Orr, 2010).

3.3.6 Consequences

The impact of stigma on individuals with mental illness and their families and communities has been widely studied. Results from previous research can be presented on a continuum. At one end of that continuum, individuals with mental illness are coping with the stigma, feeling empowered, and having positive self-appraisal (Sibitz et al., 2011). On the other end, individuals with mental illness are heavily influenced by the social stigma and are also self-stigmatized. They have poor quality of life, are socially isolated, have low self-esteem and little confidence in their future success, and can potentially die by self-neglect or suicide (Phelan, Link, & Dovidio, 2008). It is important

to note that the sociocultural context of the person plays a major role in determining his or her place on the continuum.

Arab research has revealed that the stigma attached to mental illness strongly exists in all Arab countries and has significant negative impacts on patients' and their families' health and well-being. Arab patients who face the public's stigmatizing attitudes often experience a complicated mental illness trajectory and are at risk for poor quality of life, social isolation, low self-esteem, and little confidence in future success (Azar & Kurdahi Badr, 2006; Endrawes et al., 2007). Mousa and Fares, (2005) studied 12 cases of Iraqi depressed adolescents and reported that despite their knowledge of the importance of adherence to treatment as a critical determinant of prognosis and health outcomes, the stigma associated with their illness significantly compromised their motivation to seek and adhere to psychiatric treatment. Further, Arabs who experience mental illness symptoms but feel reluctant to seek psychiatric treatment because of their fear of having a mental illness diagnoses, are more prone to low educational attainment and sleep and eating disturbances (Okasha, 2001), low self-esteem and high psychological distress (Al-Otoum, 2003), and poor prognosis (Mousa & Fares, 2005). In addition, in their study of 100 Arab family members of relatives with schizophrenia, Kadri and colleagues (2004) revealed that 86.7% of family members reported hard lives and 72% reported psychological suffering and poor quality of life due to the presence of a member with mental illness.

3.3.7 Contextual Application: A Model Case

Montaser is a 26-year-old banker who was admitted to a psychiatric facility with acute symptoms of depression. The onset of his illness was at the age of 17 when he failed *Tawjihi* [the general secondary examination held in most Arab countries. Students who fail the *Tawjihi* are not eligible to enter any university]. At that time, he became noticeably withdrawn from both family and friends, became less interested in his appearance, suffered sleeping and eating disturbances, and had pessimistic views for his life and future. Montaser's parents believed that their son was smart enough to pass the *Tawjihi* but an evil eye caused him to fail. Therefore, they went with him to a traditional healer, who failed to treat the symptoms. Over a period of 6 months, Montaser's family continued to seek all the available informal help resources before they decided to admit him to a general hospital due to his severe fatigue and weight loss. A week later, a physician informed the parents about their son's depressive symptoms and that he needed psychiatric care. Montaser's parents were not convinced with the diagnosis and decided to discharge him and try other traditional methods, such as reading the holy Quran and drinking '*zamzam*', a holy water from Saudi Arabia. However, the symptoms significantly worsened and started to be life-threatening because of severe self-neglect, which forced them to admit him to a psychiatric facility. Montaser was diagnosed with major depression, received the needed treatment, and was discharged with better

condition. With the use of anti-depressive medications, the symptoms gradually subsided.

Five years later, Mohanand got married. He was symptom-free, living with his wife, having a fairly good job, and enjoying an active social life. Recently though, he had a relapse of his depression with no identifiable precursor. His condition was deteriorating so rapidly that his wife, who knew his psychiatric history, felt afraid and called the psychiatric hospital emergency. It took two weeks in hospital for Montaser to recover and get ready to go back home. Montaser found that his wife had not told anyone that he had been depressed and hospitalized. She was embarrassed to tell people because she was afraid they might think he got depressed and 'mad' because he was unhappily married. Further, Montaser went back to his job where he was asked to send a legal excuse for his absence. After sending his medical reports, Montaser received a call from his manager telling him that he had been dismissed. He was told that the company would not leave financial documents and critical responsibilities with him as they could not expect what he might do if he had such severe depression again. Montaser felt ashamed that he was not strong enough to handle his symptoms. He felt that because of his weakness, his wife and children will suffer socially and financially and will be exposed to people's criticism and devaluation. In sum, despite that Montaser recovered from his depression, he had to encounter the consequential social stigma related to his mental illness which led him to feel self-stigmatized as well (Figure 12).

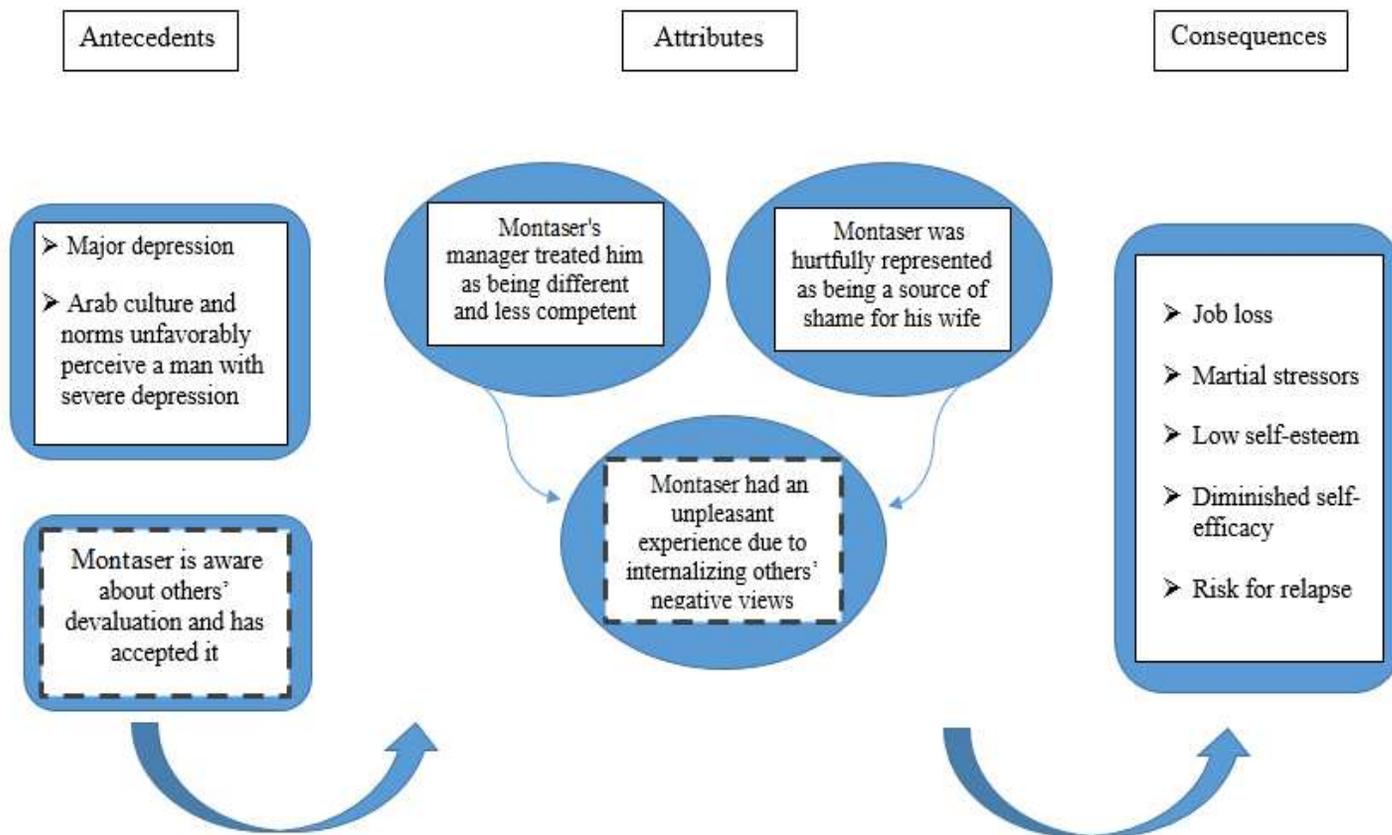


Figure 12: Model case for the experience of social and self-mental illness stigma for an Arab adult diagnosed with depression. Dashed outlines represent self-stigma.

3.4 Discussion

The fear of stigma can negatively affect the trajectory of mental illness among Arabs by delaying the proper diagnosis and treatment. Although the Islamic teachings ask patients to seek treatment because of the belief that Allah did not send down a sickness but has sent down a medication for it, the fear of mental illness stigma keeps ill individuals from following these Islamic teachings and seeking the appropriate treatment. In addition, given the religious or supernatural beliefs associated with mental illness, Arabs are more likely to seek mental health care from religious healers rather than professional care providers. A religious healer (*Imam* or *Sheikh*), is usually involved in leading prayers in the mosque, offering spiritual guidance, and providing religious advice. Religious healers are often the first non-family personnel with whom Arabs prefer to disclose mental illness-related issues due to their private, non-judgmental, and non-stigmatized encounters (Youssef & Deane, 2006). Those healers use religious practices such as prayers, reading '*Ruqya*' (specific verses from the Holy Quran), or asking the patient to drink and wash their body using water over which verses of the Quran are read. All these practices are believed to treat spiritual aspects of illness by removing the effects of evil eye, magic, or Jinn possession. While they may serve a cultural purpose, these practices do not actually cure mental health problems and the person with mental illness is still likely suffering.

There is a need to promote Arabs' mental health awareness through including mental health sciences in academic curricula, establishing media campaigns to challenge mental illness stigma, and integrating mental health services into general health settings. It is important to help Arabs, especially those from low socio-economic status, differentiate between mental health practices that are 'cultural' and those that are 'religious'. This is important to consider since some cultural practices, such as relying on reading the Holy Quran to cure diseases, still exist in Arab countries because they are misperceived as religious when in fact they are contradictory to Islamic teachings, which mandates patients to seek treatment. Interestingly, the first mental hospital built in the world was in Baghdad in 705 A.D., followed by other hospitals in Cairo (800 A.D.), Damascus, and Aleppo (1270A.D). These hospitals were reported to be extremely ahead of their times in regard to psychiatric care. It is hypothesized that Muslims at that time had more accurate interpretations of the Islamic teachings and thus, were more acceptable of mental illness as a real illness that requires medical care (Al-Issa, 2000).

Alosaimi et al. (2014) have recently highlighted the importance of integrating psycho-education into clinical practice. Many participants in their study of the prevalence of psychiatric disorders among visitors to faith healers in Saudi Arabia reported that they felt frustrated they were not cured and therefore, they either quit their medication or turned back to traditional practices. Alosaimi and colleagues suggested that the lack of adequate education for Arab patients regarding the course and prognosis

of their mental illnesses might lead to poor treatment seeking and adherence. Another study by El-Islam (2005) advocated educating Arab traditional healers themselves about the nature of psychiatric symptoms and the process of appropriate referrals to psychiatric care. When Arab patients are referred to professional care providers by trusted persons, they are more likely to accept psychiatric treatment and adhere to it.

From a broader perspective, the Arab region needs to establish effective and accessible psychiatric services and develop powerful mental health legislation and policy that encourage both those who experience mental illnesses and the community to accept psychiatric diagnoses and treatments. This is of special importance in some Arab countries where policymakers themselves can be stigmatizers by their tendency to allocate less resources to mental health services and inaccurately portray people with mental illness. For example, it is disappointing that the word '*majnoon*', meaning 'mad', is used in Jordanian law to describe patients with severe uncontrolled psychiatric symptoms.

3.4.1 Nursing Perspective

Stigma varies significantly from culture to culture and from person to person. Therefore, a client centered approach is vital for combating stigma. With their holistic approach to individualizing care, nurses should be key players in helping patients and their families accept the mental illness, develop realistic interventions, and appropriately incorporate individual values, beliefs, and cultural perspectives into the proposed

treatment plans. By emphasizing a respectful and collaborative relationship with their patients, nurses can send a strong message to the public against the stigmatizing attitudes towards mental illness (Delaney, 2012).

The study by Al-Krenawi and Graham (2000) suggests that most Arabs view psychiatrists, psychiatric nurses, psychologists, and other mental health professionals as a single unit that discards religious values, lacks genuineness and empathy with personal experiences, and with whom it is difficult to establish trust. With this in mind, in order to combat the stigma of mental illness and promote patients' help seeking behaviors, Arab nurses need to effectively adopt a patient-centered approach that allows for the differences among patients with the same diagnosis (Gray, 2002).

By taking into account the unique understanding and expectations that each patient and family member bring to the clinical encounter, nurses can most effectively tailor diagnosis, treatment, and management of mental illnesses (Dardas & Ahmad 2014a, b). Unfortunately, such approach is still limited in the nursing field. Pinto-Foltz and Logsdon (2009) conducted a literature review focusing on the disciplines of nursing, psychology, and medicine to synthesize the evidence on the most effective interventions for reducing mental illness stigma. Results revealed that stigma was grossly understudied in the nursing literature with only one intervention study conducted in the United Kingdom (Essler, Arthur, Stickley, 2006). The latter provided a school-based intervention for adolescents and did significantly reduce stigma through mental health

workshops and theatrical drama. Comparatively, significant research has been performed within the fields of psychology and psychiatry, including the testing of several innovative approaches using pre-experimental and experimental designs. The absence of nurses from intervention research on mental illness stigma is a significant gap in the literature.

3.5 Conclusion

To date, little is known about how mental illness stigma manifests within the Arab community making it difficult to design and test interventions that support Arab individuals with mental illness and their families in treatment seeking and adherence. Using Rodger's evolutionary concept analysis method, we aimed to enhance understanding of mental illness stigma in the Arab families. This analysis provides Arab researchers with a culturally competent framework that can be used to tackle stigma, discrimination, and inequality, and reflect the unique characteristics of Arab culture.

4. Studying Depression among Arab Adolescents: Methodological Considerations, Challenges, and Lessons Learned from Jordan

4.1 Introduction

There is a dearth of research on adolescent depression in the Arab region, and the few available studies have significant methodological flaws, especially regarding documentation of prevalence rates and the validity of assessment strategies (Dardas, Bailey, & Simmons 2016). As such, it is challenging to establish evidence-based prevention and treatment programs for Arab adolescents at risk for, or diagnosed with, depression (Dardas & Simmons, 2015). While more research is clearly needed on adolescent depression and its associated stigma in the Arab region, many methodological issues need to be addressed to ensure valid conclusions and culturally-sensitive recommendations. Currently, valid and reliable tools to assess depression among Arab adolescents are limited. The Beck Depression Inventory-II (Al-Musawi, 2001) and the Child Depression Inventory (Ghareeb & Beshai, 1989) are the only two depression screening tools that have been translated into Arabic, but not yet tested with Arab adolescents. The Arab Youth Mental Health Scale was developed specifically for Arab adolescents, but its use is limited because it was developed using a relatively small sample of refugees (Mahfoud et al., 2011). There are currently no validated tools to measure depression stigma or attitudes towards seeking professional psychological help among Arabs.

The feasibility and acceptability of research studies exploring sensitive and stigmatizing issues like depression and suicide among Arab adolescents are not yet well-established. In Arab culture, the family rather than the individual is the core of the community. It is an extremely important responsibility for Arab parents to raise children so that they will reflect well on the family. Arabs tend to give parents much of the credit for their children's successes and much of the blame for their failures (Nydell 2005). Thus, having an adolescent with depression is often viewed as an issue of a poor family functioning rather than a real illness that needs professional treatment. Consequently, Arabs tend to discuss issues related to mental illness within the family rather than involving outside members, including psychiatric or other health professionals (Dardas & Simmons, 2015).

We attempted to evaluate the feasibility of surveying Arab adolescents ages 12-17 regarding depression severity, depression stigma, and attitudes toward seeking professional help. This investigation obtained data from a convenience sample of Arab adolescents from Jordan. Since this was a novel area of research in the Arab region generally, and Jordan specifically, this study aimed at: (1) assessing the feasibility of collaboration and coordination with the proposed recruitment sites; (2) assessing proposed recruitment strategies for meeting desired sample size projections in a larger study; (3) confirming the utility of the translated self-reported measures and examining

their psychometric properties; and (4) obtaining preliminary findings. These steps are critical to advancing research about depression among Arab adolescents.

4.2 Methods

4.2.1 Design

This pilot study utilized a descriptive, cross-sectional design. Data were collected using self-administered questionnaires. Adolescents who agreed to participate in the study and for whom parents provided signed consent forms were asked to complete a questionnaire that included measures on depression, depression stigma, and attitudes towards seeking professional help.

4.2.2 Sampling and Setting

The study targeted Jordanian male and female school adolescents aged 12-17 years. The study utilized a convenience sampling procedure. Students were recruited from four schools located in Amman, the capital, and Zarqa, the second largest city in the country. The four schools ensured that any potentially needed mental health services would be made available to the participating students through a qualified social worker. According to the Jordanian Ministry of Education, social workers who are appointed in Jordanian schools are certified and trained mental health professionals who can assist with mental health concerns, behavioral concerns, and academic support. They are also authorized to intervene and provide consultation with teachers, parents and

administrators as well as provide individual and group counseling (Jordan Ministry of Education, 2002).

4.2.3 Measures

4.2.3.1 Socio-demographic instrument

This instrument was used to obtain information about adolescents' gender, age, educational attainment, employment status, family socioeconomic status, health insurance, whether the adolescent has any health problems, and whether a family member, including the adolescent, has a current or lifetime history of a psychiatric diagnosis. We have adapted this instrument based on research findings from Arab literature that found the selected variables significant in shaping Arabs' attitudes towards seeking professional help (Abdullah & Brown, 2011; Al-Adawi et al. 2002; Al-Krenawi, 2005; Mousa & Fares, 2005; Shukair, 2012a).

4.2.3.2 The Beck Depression Inventory-II (BDI-II)

The BDI-II (Beck, Steer, & Brown, 1996) is a widely used 21-item screening tool for adults and adolescents. It takes five minutes to complete and is designed to measure the presence and severity of depressive symptoms in the general population as well as in clinically diagnosed patients. According to the Beck Institute of Cognitive Behavioral Therapy, the measure has high test-retest stability (.93), internal consistency (.94), and construct validity when compared to the BDI (.93). Scores range from 0-13 indicate minimal depression, 14-19 mild depression, 20-28 moderate depression, and 29-63 severe

depression (Beck, Steer, & Brown, 1996). The total score was used in this study. A translated Arabic version was available for the scale. However, item 21, which asks about respondents' loss of interest in sex was rephrased as "loss of interest in females" for male participants, or "loss of interest in males" for female participants. This change was needed since it was not culturally appropriate to ask participants about interest in having sex given (a) sexual relationships outside marriage are religiously, culturally, and socially unacceptable; and (b) all participants were below the legal age of marriage in Jordan (18 years). The translated version of the BDI-II used in this study was tested with undergraduate Arab students and showed a Pearson product-moment correlation of .94, which supported that cross-language equivalence of the Arabic and English forms of the BDI-II (Al-Musawi, 2001). Using the STAI T-Anxiety and S-Anxiety scales, the convergent validity of the Arabic BDI-II was also supported. Scores from the translated version also showed high reliability (Cronbach's coefficient $\alpha = 0.84$, test re-test reliability=.80). In this study, the Cronbach's coefficient α was .88.

4.2.3.3 The Depression Stigma Scale (DSS)

The DSS (Griffiths, Christensen, & Jorm, 2008) is an 18-item measure designed to assess stigma associated with depression. It has two subscales (9 items each), which measure two different types of stigma: personal and perceived. The Personal Stigma Subscale measures stigma in the respondents' own attitudes towards depression by asking them to indicate how strongly they personally agree with nine statements about

depression (e.g., *Depression is a sign of personal weakness; If I had depression I would not tell anyone*). The Perceived Stigma Subscale measures the respondent's perception about the attitudes of others towards depression by asking them to indicate what they think most other people believe about the same nine statements (e.g., *Most people believe that people with depression are dangerous; Most people would not employ someone they knew had been depressed*). Responses to each item are measured on a five-point scale (ranging from zero 'strongly disagree' to four 'strongly agree'). Higher scores indicate higher levels of depression stigma (Griffiths, Christensen, & Jorm, 2008). The measure has adequate psychometric properties (test-retest reliability= .71; internal consistency= .77; and convergent validity= .53). In this study, Cronbach's coefficient α was .73 for the summated scale, and .54 and .62 for the DSS personal and perceived subscales, respectively. The measure has been used with variety of samples including adolescents (Griffiths et al., 2006; Griffiths, Christensen, & Jorm, 2008; Simmons, Yang, Wu, Bush, & Crofford, 2015). No validated Arabic version is available for the scale. Therefore, the scale was translated into Arabic as described later.

4.2.3.4 The attitudes towards seeking professional psychological help scale (ASPH)

The ASPH scale is a 10-item measure (Fischer & Farina, 1995) that assesses respondents' attitudes toward seeking professional psychological help (e.g., *If I believed I was having a mental breakdown, my first inclination would be to get professional attention*). Items are rated from 0 (disagree) to 3 (agree), with higher scores reflecting positive

attitudes. The total score was used in this study. The scale showed .84 internal consistency, and .80 test-retest reliabilities with adolescent student samples. In this study the Cronbach's coefficient α was .38. However, item-total statistics showed that deleting one of the items "*Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me*", increased the Cronbach's coefficient α to .60. As such, we decided to delete this item for subsequent analyses. A validated Arabic version is not available for the scale. Therefore, the scale was translated into Arabic. Table 9 describes the study scales.

Table 9: Description and reliability of the study scales

Scale	Mean (\pm SD)	Responses Range	Number of Items	Cronbach's alpha
BDI-II	19.5 (\pm 11.2)	0-53	21	.88
DSS-Total	37 (\pm 9.8)	8-62	18	.73
DSS-personal	18 (\pm 5.5)	4-31	9	.54
DSS-perceived	19 (\pm 5.7)	4-31	9	.62
ASPH ⁺	16 (\pm 4.3)	4-25	9	.60

BDI-II: Beck Depression Inventory; DSS: Depression Stigma Scale; ASPHS: Attitudes towards seeking professional help scale

⁺One item was deleted from the original 10-item scale

4.2.4 Translation Procedure

Two measures, the DSS and the ASPH Scale, needed to be translated into Arabic.

A systematic procedure was followed to ensure the reliability, validity, and cultural sensitivity of the translation as described by Brislin (1970) and Champan and Carter

(1979). Initially a bilingual professional language editor translated the measures into Arabic. Another professional language editor then translated the Arabic translations of the measures back into English. Both translators were aware that the overarching goal of the translation was to obtain linguistic and conceptual equivalence of the original measures, and to ensure the language was simple, clear and concise; suitable for the most common audience; and included no jargon. Where there were discrepancies between the original measures and their translated versions, the translators worked together to resolve conflicts.

To ensure that the translated Arabic versions had the same meanings as the original measures, an expert panel was used. The panel included three bilingual health professionals and researchers; two had PhD in nursing and one had a Master's degree in nursing. The three members were familiar with the terminology of the area covered by the measures. Further, one of the panel members was an expert in instrument development and validation. Together, the panel reviewed the three forms (original English, translated Arabic, and back-translated English) to identify and resolve any inadequate expressions/concepts within the translations, as well as any discrepancies between the forward translation and the existing version of the documents that the two translators could not adequately resolve. The panel also suggested alternative words or expressions as needed. After reviewing the final edits, the panel agreed on final Arabic translations that were accurate representations of the original English study documents.

4.2.5 Study Procedures

Institutional Review Board approvals were received from both Duke University and the University of Jordan prior to enrollment of participants. Two copies of consent forms were sent to all parents of adolescent students eligible for the study. The consent form included a full description of the study's purpose, targets, benefits, risks, procedures, and the investigators' contact information. Parents were assured that their decision to enroll their children into the study was completely voluntary and would not affect their children's status or impact their learning in school. Parents who agreed to participate were asked to sign both consent forms and return by mail in a preaddressed, stamped envelope one of the signed copies. In addition, a signature line for the adolescents was added to the consent form so that adolescents could provide their assent to participate.

The first author (LD) reviewed the returned consent forms to ensure signatures from both parents and adolescents, and created a list of eligible students. Teachers in the recruited schools then distributed the questionnaire packets to the students. The packet contained a cover letter with a brief description of the study, including reminders that participation was completely voluntary, would not affect their school status, and that they could: (1) choose to not answer any questions that make them feel uncomfortable; (2) stop before they completed the questionnaires; and (3) decide to not participate even though they signed an assent by simply returning the questionnaires blank. We also

specified in the instructions that if any student answered the suicide item positively to immediately contact the social worker at the school, talk to a trusted adult, or call the suicide hotline provided. A separate card with the needed contact information for referrals and with the suicide hotline was included in the packet. The packet also included a small incentive (\$3 notebook and pen) and an empty envelope. Students were asked to complete the questionnaires and return them sealed into a drop box at their school within one week.

Voluntary information sessions were conducted at the students' schools one week after collecting the study questionnaires to provide an additional opportunity to follow up with the students. In line with the anonymity of the study, these sessions were open to all adolescent students in the recruited schools. The first author (LD), the social worker, and/or other professionals from the recruited schools attended the sessions. Each session included a presentation on depression, its risk factors and symptoms, and available options for help. After the presentation, the session was opened up for 30-60 minutes (based on need and interest) so the students could ask questions and express concerns. Students were encouraged to seek help as soon as possible either through the researchers, the school resources, or the suicide hotline service if their responses were more than zero on the suicide item or more than 19 on total for the BDI-II scale. The sessions were well-attended and informative to the participating students.

4.2.6 Data Analysis

All data were analyzed using SAS 9.4 software (SAS Institute, Cary, North Carolina). Non-directional statistical tests were conducted with the level of significance set at 0.05 for each test. Due to the exploratory nature of the study, the level of significance was not adjusted for multiple tests. Descriptive statistics were used to describe sample characteristics as well the measures of depression risk, depression stigma, and attitudes towards seeking professional help.

4.3 Results

4.3.1 Participants

A total of 460 consent forms were distributed to parents of eligible adolescent students aged 12-17 (grades 7 to 11). Of them, only 95 (21%) signed consent forms returned. The study questionnaire packets were distributed to the 95 adolescent students for whom consents/assents were obtained. Among these 95 adolescents, 88 (93%) adolescents completed and returned the questionnaires. Of the 88 adolescents who participated in this study, 60% (n = 53) were males. The mean age was 16 years (SD = 0.5), ranging from 15-17 years. About half of the adolescents (51%, n = 45) had a GPA between 70 and 79 on a scale of 100. Seventy four percent (n = 65) reported being part-time workers. The average working hours was six (SD = 2.0), ranging from 2 to 10 hours per day. The vast majority of the adolescents (83%) came from a relatively low socio-economic status. The majority of participants' parents had high school (*Tawjihi*) as their

highest educational degree, 15% completed education up to 11th grade, and almost 6% were illiterate. About two-thirds of the adolescents had a family monthly income ranging between JD 150 and 500 (\$211-705). Of the 88 adolescents, nine (10%) reported a psychiatric history; six (7%) had a diagnosis of depression and three (3%) had a diagnosis of anxiety disorder. Table 10 shows the breakdown of the participants' characteristics.

Table 10: Demographic characteristics of the participants

Demographics	n	%
Male	53	60%
GPA		
90-100 (excellent)	14	16%
80-89 (very good)	14	16%
70-79 (good)	45	51%
≤ 69 (fair)	15	15%
Employment		
Employed	23	26%
Not employed	65	74%
Family monthly income (JD)		
Less than 150 (\$211)	6	7%
150-300 (\$211-423)	28	32%
301-500 (\$424-705)	30	34%
501-1000 (\$706-1410)	19	22%
1001-1500 (\$1411-2114)	4	5%
Health Insurance	60	68%
Chronic Health Problems	14	16%
Psychiatric Diagnosis	10	11%
Parents' Psychiatric Diagnosis	3	3%
Relatives' Psychiatric Diagnosis	6	7%

4.3.2 Depression

The mean depression total score was 19.5 ($SD = 11.0$), ranging from 0-53. Of the 88 adolescents, 22% reported scores suggesting mild depression, 19% reported scores suggesting moderate depression, while 24% reported scores suggesting severe depression (Table 11). Depressive symptoms that were most frequently reported were changes in sleep patterns (76%), changes in appetite (63%), agitation (62%), and crying (61%). Table 12 provides the relative distribution of responses (%) reported by the participants for the 21 depressive symptoms. Females scored higher on all depressive symptoms except for suicidal thoughts or wishes. The analysis revealed a significant difference ($t(86) = -3.66, p < .001$) in the mean of BDI-II total score between female adolescents (25.0, $SD = 10.0$) and male adolescents (16.0, $SD = 11.0$) (Table 13). We also explored differences in depression scores with regard to other participants' characteristics, including age, socioeconomic status, health insurance availability, and mental health history, but revealed no significant differences (all $p > .05$).

Table 11: Depression symptoms severity

Cutoff Scores	Depression Severity	N	%
0-13	Minimal	31	35%
14-19	Mild	19	22%
20-28	Moderate	17	19%
29-63	Severe	21	24%

4.3.3 Depression Stigma

On the *personal* stigma subscale, adolescents reported a mean score of 18 ($SD = 5.5$), ranging from 4-31. On the *perceived* stigma subscale, the mean score was 16 ($SD = 4$), ranging from 4-25. Items that scored high (indicating higher stigma) were “*People with depression could snap out of it if they wanted*”; “*Depression is not a real medical illness*”, and “*People with depression are unpredictable*”. Table 14 shows the relative distribution of the participants’ agreement on the items of the two depression stigma subscales.

No cut-off scores have been established by the scale’s developers. However, in order to provide a better understanding of the data, as done previously (Simmons, Yang, Wu, Bush, & Crofford, 2015), we divided data into tertiles with scores 0–11 indicating “low stigma”; scores 12–23 indicating “moderate stigma”; and scores 24–36 indicating “high stigma”. Accordingly, 25% of the participants had *low* personal stigma; 70% had *moderate* personal stigma, and 5% had *high* personal stigma. Likewise, 18% had *low* perceived stigma; 76% had *moderate* perceived stigma; and 6% had high *perceived* stigma. There were no significant differences in the mean total scores of the DSS scale between female and male participants ($t(86) = -.78, p=.44$) (Table 13). Further, no significant gender differences were revealed among the low, moderate, and high stigma subgroups (Fisher’s Exact, all $p >.05$).

Table 12: Distribution of responses to depression symptom items

Symptom	Minimal (0)	Mild (1)	Moderate (2)	Severe (3)
Sadness	31%	55%	4%	10%
Pessimism	53%	23%	15%	9%
Past failure	67%	17%	11%	5%
Loss of pleasure	45%	31%	17%	7%
Guilty feelings	18%	56%	20%	6%
Punishment feelings	50%	35%	5%	10%
Self-dislike	78%	7%	13%	2%
Self-criticalness	33%	15%	32%	20%
Suicidal thoughts or wishes	72%	22%	2%	4%
Crying	39%	8%	12%	41%
Agitation	37%	33%	6%	24%
Loss of interest	44%	20%	23%	13%
Indecisiveness	43%	43%	14%	0%
Worthlessness	81%	8%	7%	4%
Loss of energy	59%	21%	12%	8%
Changes in sleeping pattern	24%	26%	14%	36%
Irritability	46%	26%	18%	10%
Changes in appetite	36%	27%	16%	21%
Concentration difficulty	29%	34%	30%	7%
Tiredness or fatigue	28%	38%	16%	18%
Loss of interest in sex ⁺	75%	19%	4%	2%

⁺This item was rephrased as “loss of interest in females” for male participants, or “loss of interest in males” for female participants, since it was not culturally appropriate to ask participants about interest in having sex given (a) sexual relationships outside marriage are religiously, culturally, and socially unacceptable in Arab countries; and (b) all participants were below the legal age of marriage in Jordan (18 years).

Table 13: Gender differences on the study scales

Scale		Mean	SD	DF	t statistic	P value
BDI-II	Male	16	11	86	-3.66	<.001
	Female	25	10			
DSS	Male	37	10	86	-.78	.44
	Female	38	9			
ASPHS	Male	16	4	86	-.59	.56
	Female	16	4			

BDI-II: Beck Depression Inventory; DSS: Depression Stigma Scale; ASPHS: Attitudes towards seeking professional help scale; Sample sizes: Male = 53; Female = 35.

Table 14: Distribution of responses to stigma items

Item ⁺	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1- People with depression could snap out of it if they wanted	3%	7%	26%	25%	39%
2- Most people believe that people with depression could snap out of it if they wanted	4%	15%	23%	30%	28%
1- Depression is a sign of personal weakness	16%	21%	25%	26%	12%
2- Most people believe that depression is a sign of personal weakness	10%	20%	17%	43%	10%
1- Depression is not a real medical illness	17%	20%	22%	25%	16%
2- Most people believe depression is not a real medical illness	14%	20%	33%	24%	9%
1- People with depression are dangerous	19%	27%	23%	16%	15%
2- Most people believe that people with depression are dangerous	15%	30%	22%	16%	17%
1- It is best to avoid people with depression so that you don't become depressed yourself	23%	30%	10%	16%	21%
2- Most people believe it is best to avoid people with depression so that you don't become depressed yourself	20%	23%	17%	22%	18%
1- People with depression are unpredictable	6%	18%	18%	32%	26%
2- Most people believe that people with depression are unpredictable	8%	22%	21%	32%	17%
1- If I had a problem such as depression I would not tell anyone	23%	25%	23%	16%	13%
2- If they had depression, most people would not tell anyone	14%	28%	20%	22%	16%
1- I would not employ someone if I knew they had been depressed	24%	32%	19%	12%	13%
2- Most people would not employ someone they knew had been depressed	16%	27%	23%	19%	15%
1- I would not vote for a politician if I knew they had been depressed	16%	26%	16%	20%	22%
2- Most people would not vote for a politician they knew had been depressed	11%	20%	25%	21%	23%

⁺ Items numbered as 1 constitute the *personal* stigma subscale, while items numbered as 2 constitute the *perceived* stigma subscale

Table 14: Distribution of responses to stigma items (conti.)

Category	Total Scores Cutoffs	
	Personal Stigma	Perceived Stigma
0-14 (low)	25%	18%
15-29 (moderate)	70%	76%
30-45 (high)	5%	6%

4.3.4 Attitudes toward Seeking Professional Help

Regarding the participants' responses on the ASPH scale, the mean was 16 ($SD = 14$) ranging from 4-25. About 43% of the sample had a mean score less than 15. The majority of the participants (65%) believed that talking about problems with a psychologist is a poor way to get rid of emotional conflicts, yet 67% reported they would be confident in finding relief in psychotherapy if they ever had a serious emotional crisis. There were no significant differences in the mean of the total score between female and male participants ($t(86) = -.59, p=.56$) (Table 13). Table 15 shows the relative distribution for responses for individual items comprising the ASPH scale.

Table 15: Item distribution for attitudes toward seeking professional help scale

Item	Disagree	Partly disagree	Partly agree	Agree
If I believed I was having a mental breakdown, my first inclination would be to get professional attention	19%	13%	25%	43%
The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts	11%	24%	17%	48%
If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy	16%	17%	18%	49%
There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help	59%	18%	9%	14%
I would want to get psychological help if I were worried or upset for a long period of time	13%	8%	35%	44%
I might want to have psychological counseling in the future	21%	17%	28%	34%
A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help	15%	18%	28%	39%
A person should work out his or her own problems; getting psychological counseling would be a last resort	56%	16%	13%	15%
Personal and emotional troubles, like many things, tend to work out by themselves	31%	24%	17%	28%

4.4 Discussion

4.4.1 Feasibility of the Study Procedures

Feasibility of collaboration with recruitment sites was established. Both the

Jordanian Ministry of Education and the recruited schools facilitated the study

procedures and allowed investigators to contact eligible parents and adolescents.

However, only 21% of parents who received the consent forms agreed to participate in

the study, which is considered a low response. Mail surveys are often used with good

success in many contexts and rates of 50-70% are common, with 90% possible in some cases (Asch, Jedrzejewski, & Christakis, 1997; Hager, Wilson, Pollak, & Rooney, 2003; Harzing, 1997; Kanuk & Berenson, 1975; Kaplowitz, Hadlock, & Levine, 2004; Shih & Fan, 2008). A main challenge in this study was related to obtaining active consents from parents, which is not customary in Jordan. Some parents informed researchers and the schools' principals that the process of signing papers to international institutions was suspicious and threatening and, therefore, decided not to participate. Typically, the Jordanian Ministry of Education requires schools' principals to oversee school's research activities and work as liaison between parents/students and researchers. School-based surveys are undertaken using passive consent, where parents are informed that a research study is pending and unless they express an objection, they will be assumed to have consented to the study. Obtaining passive consents from participants in anonymous surveys, particularly those that are believed to pose minimal risk to participants, is not uncommon. The passive consent procedure requires participants to actively opt out (Courser et al., 2009).

The impact of active consent procedures on participation rates, nonresponse error, characteristics of surveys samples, and validity of the findings is not new and is well-documented in the literature (Courser et al., 2009; Dent, Sussman, & Stacy, 1997; Dyer, Marshman, Merrick, Wyborn, & Godson 2008; Esbensen, Melde, Taylor, & Peterson, 2008; Fendrich & Johnson, 2001; Groves, Presser & Dipko ,2004; Groves ,2006;

Jason, Pokorny, & Katz, 2001; White, Hill, & Effendi, 2004; White, Morris, Hill, & Bradnock, 2007). Groves (2006) reported that low survey response rates in active consent procedures is a major challenge in research with adolescents, leading to samples that do not represent the target population from which it was drawn. This is mainly because the process of active consent is always complex, time consuming, and requires more parental involvement. For example, in this study, the American IRB requested that participating parents send their signed consents to researchers via mail. Although stamped consents were provided, parents were still required to visit mail offices to send their consents, which required transportation for some parents.

The other potential limitation of surveys that require active consents is influencing the demographic characteristics of drawn samples (Pokorny, Jason, Schoeny, Townsend, & Curie, 2001; Unger et al. 2004). An interesting study by White, Hill, and Effendi (2004) assessed the influence of active consent procedures on data from a student survey by assigning schools to either an active or passive consent condition. The study found that active consenting led to reduced response rates, and limited the internal and external validity of the study's conclusions due to the variations in sample characteristics. In our study, while we targeted parents of adolescents aged 12-17, only parents of adolescents aged 15-17 returned the signed consents. Similar to White et al. (2004), the sample characteristics were limited to older adolescents, which limits the generalizability of our findings.

Active parental consenting also may lead to overrepresentation of adolescents who have positive family functioning and less mental health issues. This is particularly important to consider in this study since it taps a stigmatizing issue. According to Arab literature examining mental illness stigma (Al-Adawi et al. 2002; Mousa & Fares, 2005; Shukair, 2012a), Arab individuals who feel stigmatized because of being depressed or having mental illness often avoid seeking help to avoid identifying themselves as mentally ill. Such possibility is alarming since our sample has already showed relatively high rates of depression.

The issue of passive versus active consent has received considerable discussion from the research community, governmental regulators, IRBs, and policy makers, and it is apparently not easy to simplify or standardized the solutions. While some researchers suggest using passive consent only in restricted situations, others feel comfortable using it when there is minimal risk to the participants. For example, a large school-based survey entitled “The Global School-based Student Health Survey (GSHS) was developed by the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) in collaboration with UNICEF, UNESCO, and UNAIDS. The survey was conducted among students aged 13–17 years in 94 countries throughout the world, including Jordan (CDC, 2016). The purpose of the survey was to measure and assess the behavioral risk factors and protective factors among adolescents by gathering information on their physical health, mental health, suicide, bullying, violence, HIV and

sexual interactions. There was no standardized consent protocol in this survey. Rather, researchers followed each country's own parental permission procedures (CDC, 2016).

Taken together, we argue that researchers need to design research protocols that fully protect participants' rights while at the same time do not add additional burdens on participants in a way that indirectly forces them to opt out, which was likely the case in our study. We also agree with White, Hill, and Bradnock, (2007) in that school screening surveys need creative approaches that take into account the sociocultural context and existing school's policies and regulations in order to reduce the impact of the consent process itself on subjects' decision to participate or opt out of the study.

4.4.2 Utility of the Utilized Measures

4.4.2.1 The Beck Depression Inventory-II (BDI-II)

This study supported the reliability of the Arabic version of the BDI-II (Beck, Steer, & Brown, 1996) with Arab adolescents. As we mentioned before, the item on sexual interest was reworded for cultural sensitivity purposes. Modifications on this item were also reported in previous Arabic, Eastern, and Western studies. In her study on depression among adolescent females in Saudi Arabia, Raheel (2015) chose to totally delete this item before data collection. Byrne (2005) also deleted the item before administering the questionnaire to Canadian school adolescents. Uslu, Kapci, Oncu, Ugurlu, and Turkcapar (2008) tested the psychometric properties of the BDI-II with Turkish adolescents and found that the item did not load on any of the proposed factors

and also recommended deleting it. In addition, Gary and Yarandi (2004) conducted a factor analysis on the BDI-II using a sample of southern rural African American women and reported that this item had the lowest correlation coefficients. In fact, in the original report by Beck, Steer, and Brown (1996), the item "loss of interest in sex" did not load significantly. Since this was a pilot investigation, we chose to modify rather than delete the item. Our item-total analysis showed that the internal consistency reliability of the scale was not affected by retaining (.878) or deleting the item (.877).

4.4.2.2 Translated Measures: DSS and ASPH scales

This is the first study to translate and utilize the DSS and ASPH scales with Arab adolescents. Due to the small sample size, we were not able to run factor analyses. However, this study provided important preliminary findings regarding the reliability of these scales. The DSS had a Cronbach's alpha of .73. According to George and Mallery (2003), Cronbach's alpha can be interpreted as excellent ($\alpha \geq .9$), good ($0.9 > \alpha \geq 0.8$), acceptable ($0.8 > \alpha \geq 0.7$), questionable ($0.7 > \alpha \geq 0.6$), poor ($0.6 > \alpha \geq 0.5$), and unacceptable ($0.5 > \alpha$). While the summated scale had acceptable reliability, the two subscales showed poor to questionable reliability (.54 and .62 for the DSS personal and perceived subscales respectively). These findings require testing the factor structure of the scale with large and representative samples. It is possible that a one-factor scale would fit the data better than the original 2-factor scale.

The ASPH scale with its 10 items had unacceptable reliability (.38). As we mentioned before, item-total statistics showed that deleting one of the items "*Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me*", increased Cronbach's alpha from .38 to .60. As such, we decided to delete this item for subsequent analyses, hypothesizing that expenses might not be perceived as relevant for school adolescents. However, according to Gliem and Gliem (2003), while increasing the value of alpha might be a reasonable goal to delete an item in the scale, factor analysis is still needed to validate the scale with that item deleted. Such an analysis is beyond the scope of this paper. However, future studies should focus on collecting data from a large, nationally representative sample from Jordan to examine the reliability and validity of these scales using exploratory and confirmatory factor analyses.

4.4.3 Risk-Benefit Assessment

This study aligns with the WHO's (2014b) recent report entitled "Health for the World's Adolescents," which calls upon researchers, healthcare providers, and policymakers to bridge the gap between health policies and services by establishing evidence-based guidelines to reducing stigma among adolescents with depression and their families. Arab adolescents are at increased risk for depression that is coupled with substantial lack of mental health support (Dardas, Bailey, & Simmons, 2016). We anticipate that adolescents who received the study's packet, which included information about depression and resources to seek professional help, might gain more awareness

on depression and the importance of its early detection and treatment. In addition, the study could help these adolescents articulate any potential depressive symptoms they might have. This is important since cognitive and physical symptoms of depression are rarely perceived as indicative of depression among Arabs (Mousa & Fares, 2005; Shukair, 2012a). The consent form that was sent to parents might also enhance their awareness about issues related to their children's mental health. There is also a possibility that this study would open a parent-child conversation about depression, which could help identify undetected symptoms and encourage parents to intervene if they determined there were any mental health concerns with their children. We provided parents with information on how to seek professional help if needed.

The information sessions that we conducted at the adolescents' schools after data collection provided an additional opportunity to discuss issues related to depression with adolescents. The sessions were well-attended and participating students expressed interest in further participation in similar studies. These sessions provided further evidence that assessing sensitive health concerns like depression, suicidal ideations, and stigma among minors would not be associated with more than minimal risk to this vulnerable population.

4.4.4 Participants' Characteristics

Research has documented that individuals' perceptions and attitudes towards mental illness are mediated by their socio-demographic characteristics (Dardas & Ahmad, 2014a, b; Mousa & Fares, 2005; Yoo, Goh, & Yoon, 2005). Further, familiarity with and social distance from persons who have serious mental illness have been found to be significantly related to individual's stigmatizing attitudes about mental illness and seeking professional help (Corrigan, Green, Lundin, Kubiak, & Penn, 2001). With the exception of gender difference on depression scores, there were no significant differences in participants' characteristics (i.e., age, educational attainment, employment status, family socioeconomic status, health insurance availability, whether the adolescent has any health problem, and whether a family member, including the adolescent, had a current or lifetime history of a psychiatric diagnosis) based on adolescents' depression scores, depression stigma, or attitudes towards seeking professional help. However, the small sample size reduces both the power to detect differences between groups as well as the stability of findings. Moreover, sampling bias, resulting from a non-random convenience sampling, makes it difficult to establish reliable associations between and among these factors. A representative and larger sample is needed to establish an accurate profile of depression and its related stigma among Jordanian adolescents.

4.4.5 Gender Differences in Depression

This study provided preliminary evidence that female Jordanian adolescents experience significantly higher depressive symptoms than male adolescents. This finding is consistent with a previous systematic review on adolescent depression in the Arab region (Dardas, Bailey, & Simmons 2016), in which the authors concluded that the prevalence, expression, and experience of depression in the Arab region differ according to gender. In fact, gender difference in depression is one of the most robust findings in psychiatric epidemiology (WHO, 2002). It is well-documented in all health fields that women and men are different not only regarding their biology, but also their perception and management of health and illness, their access to and control over resources, their decision-making power in the family and community, and their social status in families, communities and society (Afifi, 2007; Doyal, 2001; Östlin, Eckermann, Mishra, Nkowane, & Wallstam, 2006; Payne, 2009; WHO, 2009). These gender norms contribute to expectations and behaviors for both men and women, and can either reinforce or detract from depression prevention, diagnosis, and treatment efforts. It will be the task of future research to clarify how gender differences may impact the trajectory of depression among Arab adolescents, and to help Arab health care providers and policy makers socially contextualize depression and its associated risk, and actively translate available knowledge of gender differences in depression into culturally-sensitive health planning and program implementation.

4.4.6 Depression Stigma

We assessed depression stigma using the two subscales of the DSS: (a) the personal stigma subscale, which measures respondents' own attitudes towards depression by asking them to indicate how strongly they personally agree with nine statements about depression (e.g., *People with depression are dangerous*); and (b) the perceived stigma subscale, which measures the respondent's perception about the attitudes of others towards depression by asking them to indicate what they think most other people believe about the same nine statements (e.g., *Most people believe that people with depression are dangerous*) (Griffiths, Christensen, & Jorm, 2008). The majority of adolescents in this study reported moderate personal and perceived stigma. However, average scores were higher on the perceived stigma subscale. This indicates that the level of stigma that adolescents believed others in the community have is higher than the level of stigma expressed by the adolescents themselves. It is also possible that adolescents were more willing to reflect on the public's stigmatization against individuals' with depression than on their own. Regardless, our findings are only suggestive given the relatively small sample size. More research is still needed to clarify how different views of depression stigma relate to each other and to adolescents' health outcomes.

4.4.7 Attitudes toward Seeking Professional Help

Almost 57% of the sample had a mean score greater than 15 on the ASPH scale, which has a total score ranges from 0-30 with higher scores reflecting positive attitudes. We need to underscore the difference between a positive attitude towards mental health services, and the behavior of consulting professional treatment. Studies suggest that a positive attitude is a potentially necessary, but *insufficient*, condition to help-seeking behaviors (Ajzen & Fishbein, 2005). The two are not analogous; participants may hold mental health services in high regard, but may have strong reasons for not seeing a therapist. Rather, they choose to conceal the depressive symptoms, delay, and/or deny needed treatment. This is particularly true in the Arab region where those who would seek professional treatment are often challenged by a variety of factors including scarcity of trained mental healthcare specialists, lack of resources, lack of treatment guidelines, lack of access due to financial barriers, and stigmatization of mental illness in Arab cultures (Al-Krenawi, 2005; Fakhr El-Islam, 2008; Nasir & Al-Qutob, 2005).

Another important result to highlight in this study is that while 65% of respondents viewed seeking psychological help as a poor way to get rid of emotional conflicts, 67% expressed confidence in getting relief from psychotherapy if they experienced mental health crisis. This is supported by the study of Gearing et al. (2014) on the Jordanian Public's attitudes towards adolescents with depression. Gearing and colleagues concluded that while mental illness stigma might be generally prevalent,

treatment is perceived to benefit adolescents with depression. While data from a nationally representative sample is needed to make reliable conclusions, findings from this study may call for increasing Jordanian adolescents' and their families' awareness that seeking professional treatment for adolescent depression may not be socially stigmatized as they fear.

4.5 Conclusion

Conducting cross-cultural research requires careful considerations of all ethical, methodological, cultural, linguistic, and logistical issues that might potentially affect the validity and reliability of the collected data. This study fills a significant gap in the literature, and provides important information on the potential impacts of the consent process on subjects' decision to participate or opt out of studies examining stigmatizing issues, such as mental illness. This is the first study to translate and utilize the DSS and the ASPH scales with a sample of Arab adolescents. The study provides a foundation for culturally competent research and new interventions for practice. The study also provided preliminary evidence that the prevalence of depression symptoms may be high among Jordanian adolescents, and that many of these adolescents might be experiencing depression-related stigma that affects their attitudes and willingness to seek professional help. Findings support the need to conduct additional studies, including research with representative samples, to further address these issues.

5. The Prevalence of Depression Symptoms among Jordanian Adolescents: Associations with Adolescent Characteristics, Depression Etiological Beliefs, and Likelihood to Seek Help for Depression

5.1 Introduction

Depression is the top cause of illness and disability for adolescents (WHO, 2014a). While longitudinal clinical and epidemiological studies have documented that nearly all adolescents will recover from their first depressive episode, recurrence rates range from 20 to 60% during the first two years after remission and rise to 70% after five years (Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001; Hale, van der Valk, Akse, & Meeus, 2008). Most adults with recurrent depression have their initial depressive episodes as adolescents. Further, depressive disorders with early onset tend to be more chronic and debilitating than depression beginning in adulthood (Cook, Peterson, & Sheldon, 2009). Therefore, adolescence is considered a critical and optimal time for early detection and adequate treatment of depression (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006). Unfortunately, research reveals that adolescents do not readily report on emotional or behavioral manifestations of mental health problems like depression (Cook, Peterson, & Sheldon, 2009), and they often hold negative beliefs and attitudes towards depression and people with depression (Arbanas, 2008; Sheffield, Fiorenza, & Sofronoff, 2004; Williams & Pow, 2007).

In the Arab region, depression is estimated to be the most prevalent mental health problem among adolescents. Available projections suggest that substantial percentages of Arab adolescents are expected to face a rapid increase in depression rates due to several economic, social, cultural, and political reasons (Amawi et al., 2014; Obermeyer, 2015; Okasha, Karam, & Okasha, 2015; Patel & Kleinman, 2003; Saxena, Thornicroft, Knapp, & Whiteford, 2007; UN, 2011). However, Obermeyer, Bott, and Sassine (2015) argued that data on depression among Arab adolescents are scattered, and there is a pronounced lack of recent knowledge on adolescent depression and its associated burden in Arab countries. The lack of research that can inform the current profile of adolescent depression in the region makes it difficult to design, implement, and disseminate effective interventions to improve the prevention, diagnosis, and treatment of adolescent depression (Obermeyer et al., 2015; WHO, 2005a).

5.1.1 Filling the Gap

There is still a lack of valid research-driven data on the current prevalence rates of adolescent depression in the Arab region. Using the Joanna Briggs Institute critical appraisal checklist for studies reporting prevalence data (Munn, Moola, Riitano, & Lisy, 2014), Dardas, Bailey, and Simmons (2016) evaluated the methodology of all published prevalence studies pertaining to adolescent depression in Arab countries (n=17) and revealed that none of these studies qualified as reporting prevalence data. Common limitations to these studies included using small and/or non-representative samples,

using unstandardized recruitment strategies, and/or using unreliable assessment measures. Achieving the appropriate precision for prevalence studies requires that researchers screen for and diagnose depression outside mental health institutions. This is particularly relevant in the Arab countries, where psychological problems are not considered to require professional help, and people who seek help often do not represent the broader community, because they tend to be more seriously affected and have comorbid conditions (Dardas & Simmons, 2015). Data on Arab adolescents' beliefs and attitudes towards depression are also absent (Dardas, Bailey, & Simmons, 2016), which is considered a significant gap in the literature, given that people's beliefs about a mental illness can substantially influence their willingness to seek help and their views of best treatment (Goldstein & Rosselli, 2003; Samouilhan & Seabi, 2010). The WHO (2014a) has considered the lack of research on current prevalence and determinants of depression as one of the main challenges for the provision of effective mental health support services in the Arab countries. Therefore, the aims of this study were to: (1) estimate the national prevalence of moderate to severe depression symptoms among Jordanian adolescents, and identify adolescent characteristics associated with severity of depression; (2) describe Jordanian adolescents' depression etiological beliefs and likelihood to seek help for depression; and (3) explore relationships between depression severity, depression etiologic beliefs and the type of treatment that Jordanian adolescents are likely to seek.

5.2 Methods

5.2.1 Design

A descriptive, cross-sectional, nationally representative school survey was utilized. Data were collected using self-administered questionnaires. Adolescents (ages 12-17) who agreed to participate in the study were asked to anonymously complete a questionnaire on individual characteristics, depression symptoms, depression etiological beliefs, and likelihood to seek help for depression (measures described below). We designed the survey based on lessons learned from an earlier feasibility study (chapter four; Dardas, Silva, Noonan, & Simmons, 2016b), and with collaboration with the Jordanian Ministry of Education. Our school-based survey used a passive consenting approach, where parents were informed that a research study is pending and they were required to actively opt out (Courser, Shamblen, Lavrakas, Collins, & Ditterline, 2009). Returning the survey questionnaires was considered a tacit assent for the adolescents.

The study obtained the needed Institutional Review Board approvals from both Duke University and the University of Jordan. The data collection process was completed between the period November 15 and December 22, 2016. We closed the data collection before the final school examination period in Jordan to avoid over-estimation of transient depression severity. Previous reports indicated high rates of distress and suicide attempts among adolescents aged 17 years, who do not score high in their *Tawjihi* exams (Al-arabi, 2014; Al-Shahid, 2014). *Tawjihi* is the general secondary

examination held in most Arab countries. Students who fail the *Tawjihi* are not eligible to be accepted at any university.

5.2.2 Sample

According to the most recent schools report released by the Jordanian Ministry of Education (JMoe, 2014), there were 4,686 schools that include a total of 749,134 adolescents aged 12-17. We utilized a stratified random sampling procedure to select schools that represent the three main regions in the country (north, central, and south). Using SAS 9.4 software, we randomly selected a weighted sample of the schools such that more schools were selected from provinces that include a higher density of population (see appendix C for the SAS program).

5.2.3 Sample Size for Point Prevalence Estimate

To meet overall study goal (establishing a point prevalence of depression symptoms), we used the sample calculation method for prevalence survey with finite population correction. We used the following parameters: (a) a precision rate of 3%, (b) a population size of 749,134, (c) a prevalence of 43, which is the estimated prevalence obtained from the pilot investigation (chapter four; Dardas, Silva, Noonan, & Simmons, 2016a), and (d) a 95% confidence interval (CI). The calculated minimal sample size needed for the study was 1045. According to Vaughan and Morrow (1989), if the sample is selected correctly, the larger the sample, the closer the estimate of prevalence in the sample is likely to be to the true prevalence in the whole community from which the

sample is drawn. As such, our procedure aimed to gain the largest sample size possible within the shortest time frame to ensure point prevalence.

5.2.4 Measures

5.2.4.1 Adolescent sociodemographic and health characteristics measure

We obtained information on adolescents' sociodemographic and health characteristics. In particular, we obtained dichotomous (male/female or yes/no) responses regarding adolescents' gender, employment status, health insurance availability, whether the adolescent has any chronic health problem, mental health problem, or a learning difficulty, whether the adolescent had a parent, relative, or friend with mental illness, and whether the adolescent has ever sought psychological treatment. We also obtained categorical responses regarding adolescents' age (years 12 to 17), region of residence (south, north, central), current grade point average (fair to excellent), parents' education (illiteracy to graduate degrees), and family monthly income (less than JD150 to more than JD1000).

5.2.4.2 The Beck depression inventory-II

We assessed the presence and severity of depression symptoms among Jordanian adolescents using the Arabic version of the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). The BDI-II is a self-reported questionnaire of 21 items, each of which consists of four self-evaluative statements in a time frame of two weeks, and scored 0 to 3. A BDI-II depression total score with a possible range of 0 to 63 was derived

by summing the 21-items, with higher total scores representing greater severity of depression. Using the total scores, the level of depression was determined for each adolescent. The four levels or categories of depression were: (1) minimal, scores from 0 to 13; (2) mild, scores from 14–19; (3) moderate, scores from 20–28; and (4) severe, scores from 29–63 (Beck et al., 1996). The Arabic version of the BDI-II was tested with Arab university students (Al-Musawi, 2001) and showed high test-retest stability (0.93), high internal consistency (0.92-0.94), and high construct validity (0.93). The BDI-II has been validated with good sensitivity in differentiating depressed from non-depressed individuals.

5.2.4.3 Depression etiological beliefs scale

To assess participants' beliefs about depression etiology, we used the depression etiological beliefs scale (Samouilhan & Seabi, 2010). The scale includes items rated on a Likert-scale (1 = strongly disagree, 5 = strongly agree) indicating how strongly one agree with the following depression etiological options: weak will or lack of personal strength, chemical imbalance, the way the person was raised, stressful events in the person's life, social factors such as negative peer influence, a genetic or inherited problem, spiritual forces, inadequate coping skills and problem-solving skills, and other. The scale has showed good feasibility, internal reliability, and validity (Samouilhan & Seabi, 2010; Wadian, 2013).

5.2.4.4 Depression treatment seeking scale

Participants' likelihood to seek help for depression was assessed using the depression treatment seeking scale (Barney, Griffiths, Jorm, & Christensen, 2006). The scale consists of nine items rated on a 5-point Likert-scale ranging from 1 = not at all likely to 5 = very likely, that include: If I had depression I would seek help from a (counselor, psychologist, psychiatrist, general practitioner, clergy/Shaiikh, other); I would not seek treatment from a professional; I would be willing to take medication, and I would be willing to seek therapy. The scale showed moderate to good internal reliability and validity scores (Wadian, 2013).

5.2.5 Analysis Plan

Descriptive statistics were used to detail the sample characteristics and BDI-II depression measures. Non-directional statistical tests were conducted with the level of significance set at 0.05 for each two-tailed test. All data were analyzed using SAS 9.4 software (SAS Institute, Cary, North Carolina). To address the first aim (identify adolescent characteristics associated with severity of depression), analysis of variance and analysis of covariance methods were conducted using a General Linear Model (GLM) approach to examine the relationship between the adolescent characteristics and BDI-II depression total scores. For each characteristic with a statistical significant effect ($p \leq 0.05$), *a posteriori* pairwise comparisons using t-test were conducted to test for between-group differences in the least-squares means. First, bivariate models were used

to examine the association between each characteristic and the depression total scores. Next, a multivariable GLM model that included the 13 adolescent characteristics was conducted to examine the influence of each characteristic on depression total scores, after adjusting for the effects of other characteristics. Finally, the multivariable GLM was reduced to a pragmatic model using an iterative backward elimination process by which the least significant characteristic was omitted until the model included only statistically significant characteristics ($p \leq 0.05$). To determine effect size and clinical significance, the eta-squared for each model and partial eta-squared for each explanatory variable (covariate) within each multivariable model were calculated. To address the second aim, descriptive statistics were used to describe Jordanian adolescents' depression etiological beliefs and likelihood to seek help for depression. To address the third aim, a Spearman's correlation analysis was conducted to explore relationships between Jordanian adolescents' depression etiological beliefs and their likelihood to seek help for depression.

5.3 Results

5.3.1 Sample Characteristics

A total of 2,349 Jordanian adolescents completed and returned the survey packets. Table 16 presents the characteristics of the 2,349 Jordanian adolescents in the study. Participants represented all the three regions in the country. Of the 2,349 adolescents, 34% were from the northern (suburban) region, 43% were from the central

(urban) region, and 23% were from the southern (rural) region. Our weighted sample included more participants from regions that have higher population density.

The mean age was 15.0 years (SD=1.5) with age ranging from 12-17. The majority of the adolescents were 16 years of age (36%), female (59%), living in the central urban region (43%), unemployed (92%), and had a GPA ranked as very good to excellent (58%). Approximately 80% of participants' parents had *Tawjihi* or higher; while 7% reported their fathers and 5% reported their mothers were illiterate. Approximately 31% reported a family monthly income of less than JD300 (\$423).

Among the 2,349 adolescents, 14% reported having chronic health problem (e.g., asthma, bronchitis, anemia), 15% reported having a mental health problem (e.g., anxiety, depression, stress), 25% reported having academic difficulties, and 8% reported they had received a psychiatric diagnosis. Among the 180 adolescents with a prior psychiatric history, a diagnosis of depression (37%) and anxiety (31%) were most often reported. Three percent of the sample indicated that one of their parents had a mental illness. Among the 70 adolescents with a parent with a mental illness, respondents reported that 27% of the fathers and 30% of the mothers had a diagnosis of depression. Finally, 22% reported they have ever sought a psychological help. Sources of help included: family members (50%); friends (15%); religious leaders (11%); school counselors (8%); psychiatrists (5%); and general practitioners (4%).

Table 16: Sample characteristics

Socio-demographic Characteristic (N)	Subgroups	n	%
Gender (N=2349)	Female	1389	59%
	Male	960	41%
Age (N=2331)	12 years	168	7.0%
	13 years	259	11%
	14 years	357	15%
	15 years	396	17%
	16 years	839	36%
	17 years	312	14%
Region of origin (N=2349)	North	786	34%
	Center	1018	43%
	South	545	23%
Grade Point Average (GPA, N=2252)	90-100 (excellent)	606	27%
	80-89 (very good)	691	31%
	70-79 (good)	674	30%
	≤69 (fair)	281	12%
Fathers' education (N=2247)	Illiterate	156	7.0%
	Up to 11th grade	364	16%
	Tawjihi	805	36%
	Diploma	320	14%
	University	602	27%
Mothers' education (N=2261)	Illiterate	113	5.0%
	Up to 11th grade	296	13%
	Tawjihi	880	39%
	Diploma	462	20%
	University	510	23%
Family monthly income (N=2178)	Less than JD150 (\$211)	149	7.0%
	JD150-300 (\$211-423)	531	24%
	JD301-500 (\$424-705)	609	28%
	JD501-1000 (\$706-1410)	576	27%
	≥ 1000 (\$1411)	313	14%

Table 16: Sample characteristics (cont.)

Other Characteristics	N	n	%
Has health insurance	2308	1753	76%
Has a chronic health problem	2326	319	14%
Has a mental health problem	2308	353	15%
Has learning difficulties	2324	574	25%
Received a psychiatric diagnosis	2324	180	8.0%
Has a parent with a mental illness	2337	70	3.0%
Has a relative with a mental illness	2319	260	11%
Has a friend with a mental illness	2318	401	17%
Ever sought a psychological help	2333	521	22%

5.3.2 Prevalence of Depression

A total of 2,023 of the 2,349 adolescents completed the BDI-II depression assessment, while 326 participants partially completed the depression questionnaire. Missing item-level data were imputed for each adolescent with partially completed assessments when at least 17 of the 21 items (80%) were completed. In such cases, the adolescent's mean score for non-missing items was calculated and imputed for each missing item score (Shrive, Stuart, Quan, & Ghali, 2006). Among the 326 individuals with missing data, 305 had missing item-level data imputed and were included in the final analyses. Nineteen participants had more than 80% missing data and were omitted from the analyses, giving a total sample size of 2,330. The BDI-II total score for each adolescent was then calculated for 2,330 adolescents with complete data after the imputation was applied. The internal consistency (Cronbach's alpha) for the 21 items with imputed scores was 0.89.

Table 17 details the BDI-II total scores for the 2,330 adolescents. The mean total score was 16.3 (SD=11.2, 95% CI= 15.8 to 16.7), with scores ranging from 0-55. Based on the total score, there were 47% with minimal depression, 18% with mild depression, 19% with moderate depression, and 15% with severe depression. The prevalence of moderate to severe depressions scores was 34%.

Table 17: Prevalence of depression

BDI-II Characteristic	Statistic
Depression Total Scores	
N	2330
Mean ± SD	16.3 ± 11.2
Median	14
25 th , 75 th percentile	8, 23
Minimum, Maximum	0, 55
Depression Severity Category	
	n (%)
Minimal	1091 (47%)
Mild	427 (18%)
Moderate	451 (19%)
Severe	361 (15%)

Table 18 summarizes the severity of the each of the 21 symptoms of depression assessed by the BDI-II based on completed, non-imputed item scores. The most frequently reported moderate or severe symptoms were crying (43%), self-criticalness (34%), changes in sleep pattern (33%), and changes in appetite (25%).

Table 18: BDI-II: Severity of depressive symptoms

BDI-II: Symptoms	N	Minimal (0-13)	Mild (14-19)	Moderate (20-28)	Severe (29-63)
Sadness	2345	28%	60%	5%	7%
Pessimism	2294	57%	21%	14%	8%
Past failure	2322	73%	10%	14%	3%
Loss of pleasure	2309	54%	28%	11%	7%
Guilty feelings	2328	32%	45%	19%	4%
Punishment feelings	2330	58%	25%	9%	8%
Self-dislike	2315	77%	10%	7%	6%
Self-criticalness	2319	51%	15%	22%	12%
Suicidal thoughts or wishes	2329	75%	18%	3%	4%
Crying	2330	44%	13%	15%	28%
Agitation	2291	58%	22%	7%	13%
Loss of interest	2317	58%	20%	13%	9%
Indecisiveness	2338	41%	44%	11%	4%
Worthlessness	2329	79%	11%	8%	2%
Loss of energy	2328	57%	24%	13%	6%
Changes in sleeping pattern	2335	35%	32%	12%	21%
Irritability	2331	43%	36%	15%	7%
Changes in appetite	2337	42%	33%	10%	15%
Concentration difficulty	2332	43%	33%	16%	8%
Tiredness or fatigue	2316	46%	36%	8%	10%
Loss of interest in sex	2277	61%	14%	10%	15%

BDI-II: Beck Depression Inventory-II. N= Number of items completed, non-imputed responses. Percentage of adolescents indicating minimal, mild, moderate, or severe depression for each symptom based on completed, non-imputed scores.

5.3.3 Adolescent Characteristics and Depression Total Scores

Table 19 presents the results of the set of bivariate GLMs and *a posteriori* t-tests conducted to examine the relationships between each adolescent characteristic and the BDI-II depression total scores. The *a posteriori* pairwise comparison results indicated significant between-group differences in the mean depression total scores for each adolescent characteristic examined (F test: $p \leq 0.05$). The results indicated that severity of depression total scores were significantly higher in the following groups of adolescents: (1) females; (2) participants ages 14 and older; (3) those residing in the northern and southern regions of Jordan; (4) those with lower grade point averages; (5) participants reporting that their father or mother had an educational level less than *Tawjihi*; and (6) those residing in families with monthly incomes less than JD300 (\$423). In terms of health characteristics, the depression total scores were significantly higher in adolescents reporting: (1) a chronic health problem; (2) a mental health problem; (3) a learning difficulty; (4) a psychiatric diagnosis; (5) a parent with a mental illness; and (6) having sought psychological help in the past.

Table 19: Bivariate general linear models: adolescent characteristics and BDI-II depression total scores

Characteristic	N	Depression Total Scores (Mean ± SD)	F	df	p	Partial Eta Squared	Significant Pairwise Comparisons
Sex			77.6	1, 2328	<.0001	.03	
Female	1389	17.9 ± 11.6					F > M
Male	960	13.8 ± 10.2					
Age, in years			26.2	2, 2309	<.0001	.02	
1_Age 12-13	427	13.1 ± 10.8					2 > 1
2_Age 14-15	742	17.9 ± 11.2					2 > 3
3_Age 16-17	1143	16.3 ± 11.1					3 > 1
Region of residence			7.5	2, 2327	.0006	.01	
North	779	16.8 ± 11.5					N > C
Center	1009	15.3 ± 10.4					
South	542	17.3 ± 12.2					S > C
Grade Point Average (GPA)			21.5	1, 2233	<.0001	.01	
1_≥80 (very good-excellent)	1291	15.3 ± 10.7					
2_<80 (≤good)	944	17.5 ± 11.7					2 > 1
Fathers' education			13.9	2, 2225	<.0001	.01	
1_Less than Tawjihi	514	18.2 ± 11.8					1 > 2
2_Tawjihi	798	16.5 ± 11.5					2 > 3
3_Diploma or higher	916	15.0 ± 10.5					1 > 3
Mothers' education			9.3	2, 2241	<.0001	.01	
1_Less than Tawjihi	405	17.8 ± 11.6					1 > 3
2_Tawjihi	873	16.8 ± 11.3					2 > 3
3_Diploma or higher	966	15.2 ± 10.8					
Family monthly income			11.8	2, 2157	<.0001	.01	
1_Less than JD300 (\$423)	671	17.6 ± 11.6					1 > 3
2_JD301-500 (\$424-705)	605	16.8 ± 11.2					2 > 3
3_>JD500 (\$705)	884	14.9 ± 11.0					

Bivariate General Linear Models (GLMs) to test for between-group differences in the mean depression total scores; SD = Standard deviation; *A posteriori* pairwise comparison conducted using t-tests to test for differences in least squares means; Significant pairwise comparisons indicated ($p \leq 0.05$). Partial eta squared effect size reported for each characteristic: small = 0.01, medium = 0.06, and large = 0.14.

Table 19: Bivariate general linear models: adolescent characteristics and BDI-II depression total scores (cont.)

Characteristic	N	Depression Total Scores (Mean ± SD)	F	df	p	Partial Eta-Squared	Significant Pairwise Comparisons
Chronic health problem			123.1	1, 2305	<.0001	.05	
Yes	316	22.6 ± 12.1					Y > N
No	1991	15.2 ± 10.7					
Mental health problem			446.9	1, 2287	<.0001	.16	
Yes	349	26.8 ± 11.4					Y > N
No	1940	14.2 ± 10.0					
Learning difficulties			175.3	1, 2303	<.0001	.07	
Yes	569	21.4 ± 11.8					Y > N
No	1736	14.5 ± 10.5					
Psychiatric diagnosis			194.6	1, 2303	<.0001	.08	
Yes	177	27.0 ± 12.7					Y > N
No	2128	15.3 ± 10.6					
Parent with a mental illness			38.2	1, 2316	<.0001	.02	
Yes	68	24.5 ± 12.1					Y > N
No	2250	16.0 ± 11.1					
Ever sought psychological help			247.8	1, 2313	<.0001	.10	
Yes	519	22.7 ± 12.0					Y > N
No	1796	14.4 ± 10.3					

Bivariate General Linear Models (GLMs) to test for between-group differences in the mean depression total scores; SD = Standard deviation; *A posteriori* pairwise comparison conducted using t-tests to test for differences in least squares means; Significant pairwise comparisons indicated ($p \leq 0.05$). Partial eta squared effect size reported for each characteristic: small = 0.01, medium = 0.06, and large = 0.14.

Table 20 presents the results from the multivariable GLM that included all 13 adolescent characteristics (covariates) in a single model. The eta squared for this model was 0.30, indicating that 30% of the variability in the depression total scores was explained by the 13 adolescent characteristics in the model. After adjusting for other covariates, the following characteristics were significantly related to depression total

scores: (1) sex, (2) age, (3) family monthly income, (4) reporting a chronic health problem; (5) reporting a mental health problem; (6) reporting a learning difficulty; (7) reporting a psychiatric diagnosis; and (8) seeking psychological help in the past (all $p \leq 0.05$). These eight variables were retained for inclusion in a reduced pragmatic multivariable model.

Table 21 provides the results of the final pragmatic model that included eight characteristics (covariates) that were statistically significant after adjusting for other covariates and applying a backward elimination variable selection method ($p \leq 0.05$). Pairwise comparisons indicated that the mean severity of depression total scores was significantly higher in the following groups of adolescents: (1) females; (2) ages 14 and older; (3) residing in families with monthly incomes less than JD300 (\$423); (4) reporting a chronic health problem; (5) reporting a mental health problem; (6) reporting a learning difficulty; (7) reporting a psychiatric diagnosis; and (8) reporting seeking psychological help in the past. With the exception mental health problems, the partial eta-squared values indicated a small effect size for each characteristic after adjusting for the other seven characteristics (partial eta values less than 0.06). However, the eta squared for the pragmatic model was 0.31, indicating 31% of the variability in the depression total scores was explained by these eight adolescent characteristics.

Table 20: Multivariable model: adolescent characteristics and BDI-II depression total scores

Adolescent Characteristic	F	df	p	Partial Eta Squared
Sex	66.5	1, 1861	<.0001	.03
Age	15.7	2, 1861	<.0001	.01
Region of residence	2.2	2, 1861	0.1151	.00
Grade Point Average (GPA)	3.1	1, 1861	0.0780	.00
Fathers' education	0.4	2, 1861	0.6821	.00
Mothers' education	0.2	2, 1861	0.8141	.00
Family monthly income	3.5	2, 1861	0.0292	.00
Chronic health problem	38.6	1, 1861	<.0001	.02
Mental health problem	120.1	1, 1861	<.0001	.06
Learning difficulties	47.3	1, 1861	<.0001	.02
Psychiatric diagnosis	25.8	1, 1861	<.0001	.01
Parent with a mental illness	0.5	1, 1861	0.4987	.00
Ever sought psychological help	73.3	1, 1861	<.0001	.04

General Linear Model (GLM) with 13 adolescent characteristics included in the model. Results indicate the effects of each characteristic on depression total scores, after adjusting for other covariates in the model ($p \leq .05$). Partial eta squared effect size reported for each characteristic: small = 0.01, medium = 0.06, and large = 0.14.

Table 21: Final reduced model: adolescent characteristics and BDI-II depression total scores

Adolescent Characteristic	N	Depression Total Scores (Adjusted Mean ± SD)	F	df	p	Partial Eta Squared	Significant Pairwise Comparisons
Sex			75.8	1, 2033	<.0001	.04	
Female	1189	17.8 ± 6.3					F > M
Male	872	13.6 ± 5.2					
Age, in years			20.0	2, 2033	<.0001	.02	
1_Age 12-13	354	12.8 ± 5.2					2 > 1
2_Age 14-15	651	17.6 ± 6.4					
3_Age 16-17	1056	16.1 ± 6.1					3 > 1
Family monthly income			6.4	2, 2033	0.0017	.01	
1_Less than JD300 (\$423)	640	17.2 ± 6.2					1 > 3
2_JD301-500 (\$424-705)	574	16.5 ± 6.0					2 > 3
3_>JD500 (\$705)	847	14.8 ± 6.2					
Chronic health problem			40.5	1, 2033	<.0001	.02	
Yes	279	23.0 ± 6.7					Y > N
No	1782	14.9 ± 5.4					
Mental health problem			151.7	1, 2033	<.0001	.07	
Yes	299	27.1 ± 5.0					Y > N
No	1762	14.1 ± 4.2					
Learning difficulties			58.6	1, 2033	<.0001	.03	
Yes	493	21.3 ± 6.5					Y > N
No	1568	14.3 ± 5.2					
Psychiatric diagnosis			30.6	1, 2033	<.0001	.01	
Yes	161	27.0 ± 6.4					Y > N
No	1900	15.1 ± 5.3					
Ever sought psychological help			82.7	1, 2033	<.0001	.04	
Yes	463	22.6 ± 6.4					Y > N
No	1598	14.1 ± 4.7					

General Linear Model (GLM) reduced to include only those characteristics significantly associated with depression total scores, after adjusting for other covariates in the model ($p \leq .05$). Least squares mean adjusted for covariates in the model. SD = Standard deviation. *A posteriori* pairwise comparisons were conducted using t-tests to test for differences in the least squares group means; Significant pairwise comparisons indicated ($p \leq 0.05$). Partial eta squared effect size reported for each characteristic: small = 0.01, medium = 0.06, and large = 0.14.

5.3.4 Depression Etiological Beliefs

Table 22 shows the distribution of responses for individual items comprising the depression etiological beliefs scale, based on completed, non-imputed item scores.

Adolescents endorsed multiple etiological factors for depression. The factors in which likely or very likely was most often reported were stressful events in one’s life (72%), social factors (65%), and one’s weak will (56%). On the other hand, the least reported factors were genetic or inherited problems (24%), chemical imbalance (30%), and punishment for wrong doings (35%).

Table 22: Depression etiological beliefs

Depression Etiology	N	Not at all likely	Unlikely	Neutral	Likely	Very likely
One’s weak will	2252	14%	13%	17%	39%	17%
Lack of personal strength	2222	10%	21%	21%	32%	15%
Chemical imbalance	2183	15%	22%	33%	22%	8%
The way a person was raised	2171	13%	15%	20%	31%	21%
Stressful events in one’s life	2126	6%	8%	14%	30%	42%
Social factors	2200	7%	10%	18%	33%	32%
Genetic or inherited problems	2196	26%	23%	27%	17%	7%
Spiritual forces	2197	15%	17%	30%	25%	13%
Punishment for wrong doings	2175	20%	21%	24%	24%	11%
Inadequate coping skills	2106	9%	12%	26%	35%	18%
Inadequate problem-solving skills	2188	11%	15%	29%	30%	15%
Other etiologies	1884	13%	8%	23%	29%	27%

N= Number of items completed, non-imputed responses.

While, approximately half of the adolescents (56%) reported they believe ‘other factors’ may cause depression, analysis of the open-ended item responses that adolescents provided to specify these other factors did not reveal new information. Responses included factors already assessed in other items (e.g., death of a beloved person; family problems; parenting style; poverty).

5.3.5 Likelihood of Seeking Help for Depression

Table 23 shows distribution of responses for individual items comprising the likelihood to seek help for depression scale, based on completed, non-imputed item scores. Based on likely to very likely responses, adolescents were more likely to seek help for depression from a family member (57%), followed by a counselor (46%), psychiatrist (43%), religious leader (39%), and general practitioner (28%). In addition, 53% of the adolescents reported they will be willing to take medications for depression, while 50% expressed willingness to seek a therapy. Finally, 25% of the adolescents reported they will not be willing to seek professional help for depression.

5.3.6 Relationships between Depression Severity, Depression Etiological Beliefs, and Likelihood of Seeking Help for Depression

A Spearman’s rho correlation analysis was conducted between adolescents’ depression etiological beliefs and their likelihood of seeking help for depression. The results revealed the following significant associations: (1) seeking help from a counselor had a positive relationship with the beliefs that depression is caused by one’s weak will, lack of personal strengths, and social factors, but was negatively associated with

depression severity (all $p \leq .05$); (2) seeking help from a psychiatrist was negatively associated with depression severity ($p \leq .05$); (3) seeking help from a religious leader had a positive relationship with the beliefs that depression is caused by lack of personal strengths and genetic problems (all $p \leq .05$); (4) willingness to take a medication had a positive relationship with the beliefs that depression is caused by biological factors ($p \leq .05$); and (5) willingness to seek a psychotherapy was positively associated with the beliefs that depression is caused by one's weak will, lack of personal strengths, social factors, and the way person was raised, but was negatively associated with depression severity (all $p \leq .05$).

Table 23: Likelihood of seeking help for depression

Help-Seeking Intentions	N	Not at all likely	Unlikely	Neutral	Likely	Very likely
I would seek help from a counselor.	2191	26%	15%	13%	27%	19%
I would seek help from a psychiatrist.	2184	21%	19%	15%	25%	20%
I would seek help from a general practitioner/family doctor.	2180	28%	24%	20%	18%	10%
I would seek help from a sheikh/religious leader.	2166	25%	17%	19%	24%	15%
I would seek help from a family member.	2140	17%	11%	15%	29%	28%
I would seek help from other sources	1967	24%	13%	15%	26%	22%
I would be willing to take medication for my depression.	2167	19%	12%	16%	25%	28%
I would be willing to seek therapy.	2157	18%	15%	17%	26%	24%
I would NOT seek treatment from a professional.	2164	41%	17%	17%	13%	12%

N= Number of items completed, non-imputed responses.

5.4 Discussion

To our knowledge, this is the first study to document the prevalence of adolescent depression in Jordan, using a representative national survey. The study revealed that prevalence rate for moderate to severe depression scores was 34%, with 19% of the adolescents reporting moderate depression and 15% experiencing severe depression. However, it is important to keep in mind that this is a crude prevalence rate. Clinical presentations for various medical and psychiatric conditions, as well as reactions to psychosocial stressors, can mimic or confound the picture of depression in adolescents (Hankin, 2006), and some adolescents presenting with symptoms that initially resemble depression develop behavior problems, traumatic stress disorders, or substance abuse rather than depression. Thus, assessment for differential diagnoses using diagnostic interviews is essential. Collateral reports from parents, alternative caregivers, and teachers are also essential for confirming or ruling out depression in adolescence (Birmaher et al., 2007).

In their review of literature, Dardas, Bailey, and Simmons (2016) revealed a considerable disparity in figures on the prevalence of depression in the Arab region due to previously published studies' wide heterogeneity in terms of focus, methods, measures, and analyses. As such, it is difficult to compare our findings with published estimates from other Arab countries. However, reported percentages of high depressive symptoms ranged from 4% (Afifi, 2007) to 29% (Abdel-Fattah & Asal, 2006). Comparing

our findings with estimates from the Western literature may also be difficult as these reports often provide prevalence rates based on diagnostic procedures rather than self-reported questionnaires. However, it is important to have a general perspective on how our prevalence rate would fall relative to the worldwide prevalence. Numerous Western studies have estimated the prevalence of depression in community samples. In the United States, lifetime and 12-month prevalence of major depression disorder in adolescence are 11% and 7.5%, respectively (Avenevoli, Swendsen, He, Burstein, & Merikangas, 2015). In Canada, the lifetime adolescent depression prevalence rate is estimated to be 7.6% (Cheung & Dewa, 2006). In Australia, 14.2% of adolescents report symptoms of depression, and up to 25% are likely to have experienced a clinically significant depressive episode by the age of 18 (Corrieri et al., 2014). A large European study assessing approximately 12,000 adolescents from 11 countries estimated the prevalence of depression in adolescence as 10.5%, and subthreshold depression as 29.2% (Balazs et al., 2013). Overall, the prevalence of depression symptoms among Jordanian adolescents seem to be in line with published estimates. However, our estimates should serve as an alarm, particularly given that rates of depression in the Arab region are expected to increase rapidly in the context of the Arab Spring, which began in December 2010 and continues to this day (Amawi, Mollica, Lavelle, Osman, & Nasir, 2014).

5.4.1 Adolescent Characteristics and Depression Severity

Research has documented that sociodemographic factors such as age (Cook, Peterson, & Sheldon, 2009), gender (Hyde, Mezulis, & Abramson, 2008), socioeconomic status (Kessler et al., 2012), living area (Abela et al., 2011; Deen & Bridges, 2011; Weber, Puskar, & Ren, 2010), psychiatric history (Chronis-Tuscano et al., 2010), familiarity with persons who have mental illness (Anagnostopoulos & Hantzi, 2011), and familiarity with mental health services (Aromaa, Tolvanen, Tuulari, & Wahlbeck, 2011) can impact one's experience of adolescent depression. Our findings also indicate that the severity of depression is higher in adolescents with the following characteristics: (1) females; (2) age 14 to 17 years; (3) family monthly income less than JD300 (\$423); (4) chronic health problem; (5) mental health problem; (6) learning difficulty; (7) psychiatric diagnosis; and (8) seek psychological help in the past. Together, these eight adolescent characteristics explain 31% of the variability of the severity of depression scores. Clinically, it is important to recognize this set of sociodemographic and health-related factors associated with increased risk of depression in Jordanian adolescents.

Sex. Our study showed that female Arab adolescents had significantly higher levels of depression than their male counterparts. This result is consistent with reported percentages from other Arab countries, including Egypt (Celedonia, Wilson, El Gammal, & Hagra, 2013), Saudi Arabia (Abdel-Fattah & Asal, 2006), Oman (M. Afifi, 2006; M. Afifi, Al Riyami, Morsi, & Al Kharusil, 2006), and Kuwait (Al-Balhan, 2006). However,

this finding is not unique to the Arab region. In fact, sex differences in depression are one of the most robust findings in psychiatric epidemiology (WHO, 2002). Studies have revealed that the change in the sex ratio of depression prevalence often emerges around puberty and tends to greatly increase between ages 15 and 18 (Essau, Conradt, & Petermann, 2000; Essau, Lewinsohn, Seeley, & Sasagawa, 2010). While the exact processes underlying this trend are still unclear, evidence suggests it may reflect the interplay of gender socialization, social and hormonal mechanisms, and stressful events associated with adolescence (Cyranowski, Frank, Young, & Shear, 2000; Soares & Zitek, 2008). A better understanding of these processes within various cultures may play a crucial role in designing effective prevention and intervention programs for adolescent depression.

Age. Our study revealed higher levels of depression among older adolescents. The effect of age on onset and prognosis of depression is still unclear. Studies indicate low rates of depression before the age of 13 (Egger & Angold, 2006). However, these rates begin to rise during early adolescence, followed by a dramatic increase between 15 and 18 years of age. Up to 25% of adolescents experience at least one major depressive episode by age 18 (WHO, 2005b). It is suggested that several biological, psychological, and contextual factors play a mediation effect in this phenomenon (Cook, Peterson, & Sheldon, 2009).

Region. Our survey revealed higher depressive symptoms in the southern region of the country (a relatively rural area) compared to the northern (suburban) and central (urban) regions. However, the statistical significance of the relationship between region and depression severity was washed out when adjusting for other adolescent characteristics. Explaining this finding may not be straightforward due to the lack of studies on rural/urban differences in adolescent depression. We know, however, that economic, social, health care, and leisure opportunities vary among rural, urban, and suburban communities (JMOC, 2014; JMOH, 2014; Stamm, 2003). Research also suggests that urbanicity can have significant interactive effects on predictors of adolescent psychosocial and emotional adjustment (Burns et al., 2004). For example, while resources may be more available in urban communities, the “aggregated quality of social supports may be more negative than positive for adolescents” (Gallagher, Rostovsky, & Hughes, 2004, p.243). On the other hand, the few studies that have been conducted on rural adolescents’ mental health (Black, Roberts, & Li-Leng, 2012; Burns et al., 2004; Elgar, Arlett, & Groves, 2003; Gallagher et al., 2004) revealed significant problems with stress and coping, lower access to mental health care, lower likelihood to seek psychological help, higher resistance to getting services, and greater levels of mental illness stigma. Burns and colleagues stated that it is a “myth that rural regions experience less stress being removed from urban environments” (Burns et al., 2004, p. 1314). Further studies should examine the impact of rural/urban differences and its

embedded cultural component on the experience of adolescent depression in the Arab countries.

Socioeconomic and health status. The prevalence of depression varies considerably both within and between countries, which may be a reflection of the role of contextual factors, such as economic, demographic, and environmental factors on the development and prevalence of depression. Findings from meta-analyses, longitudinal, and observational studies have consistently identified poor socioeconomic status as a risk factor for depression (Contoyannis & Li, 2013; Lorant et al., 2007; Lorant et al., 2003). Almost 60% of the adolescents in this study reported a family monthly income of less than JD500 (\$705). According to the latest report released by the directorate of economic statistics at the Jordanian Department for Statistics (JDOS, 2010), the poverty line in Jordan has increased dramatically during the last years reaching 800JD. As such, the majority of adolescents in this study can be considered living under the poverty line.

The relationship between socioeconomic status and depression is not a simple bivariate relationship, as many intervening mechanisms may account for it. Low socioeconomic status is generally associated with less coping resources, poorer access to health care, poorer physical and mental health, and high stress exposure (Lorant et al., 2003), all of which can have additional impacts on depression risk. Our study supports this hypothesis as we revealed significant and strong associations between adolescents' depression severity and reporting a chronic health problem, mental health problem, or

learning disability. Other studies on Arab adolescents also underscored this relationship and found higher depression among those with a personal history of mental illness or chronic physical illness (Abdel-Fattah & Asal, 2006; M. Afifi et al., 2006).

5.4.2 Depression Etiological Beliefs and Likelihood to Seek Help for Depression

Our study revealed that Jordanian adolescents endorsed multiple etiological factors for depression, which suggest that they have some awareness of the complexities involved in depression and its underlying risk factors. However, biological etiological factors, such as chemical imbalance and genetics problems, were the least reported etiologies. The vast majority of adolescents believed stressful events in one's life (72%) and social factors (65%) cause depression. Further, inadequate coping and inadequate problem solving skills were not uncommon etiological beliefs. It is also important to highlight that many Jordanian adolescents believed depression is a result of weak will (56%), the way person was raised (52%), lack of personal strength (47%), spiritual forces (38%), and punishment for wrong doings (35%). These findings call for improving Jordanian adolescents' knowledge about depression and its risk factors, which may in turn improve their willingness to seek help and their views of best treatment.

As expected, family was the first source of help that adolescents expressed willingness to seek. This result supports Gilat et al.'s (2010) study, which revealed that when a member in the Arab family shows symptoms of mental illness, Arabs usually turn first to family members, and it often takes months and even years for some families before they finally accept that the person with mental illness needs professional

psychiatric care. This study also revealed an overall less tendency among adolescents to seek help from professional sources, which can be related to fears of the stigma associated with seeking professional psychological help among Arab adolescents (Dardas, Bailey, & Simmons, 2016). However, only 25% reported that they will not seek any treatment, while 50% expressed willingness to seek a therapy. This result is promising, as it indicates that while sources of help might be stigmatized, adolescents are still generally willing to seek help for depression.

Other interesting findings in this study is that 53% of adolescents were willing to take medications for depression. While this finding may indicate increased awareness among our sample regarding the effectiveness of pharmacotherapy in treating depression, it is also possible that taking medications is viewed as easier to conceal than reaching psychiatrist or psychologist clinics. Both Olfson et al. (2002) and Barney et al. (2006) also found that taking medications was more preferred than psychosocial treatments for outpatients with depression due to easier concealability.

It is important to highlight that 39% of adolescents showed willingness to seek help for depression from a Sheikh or religious leader. Arab youth tend to view religion as a powerful anchor of their identity and their ability to navigate the future (Khoury & Lopez, 2011). Western studies also found that individuals experiencing depression may prefer talking about their symptoms with religious leaders, especially when they feel ashamed or guilty, or they believe their problems might be caused by wrong doings (Givens et al., 2007; Wadian, 2013). This explanation can be supported by the fact that

35% of our sample actually believed depression is a cause of punishment for wrong doings and 38% believed spiritual forces cause depression.

Overall, our study showed that differing beliefs around the causes of depression were associated with differing views of what type of treatment adolescents were more likely to seek. The beliefs that depression is a result of one's weak will, lack of personal strengths, social factors, or the way person was were associated with willingness to seek psychotherapy, while the beliefs that depression is a result of lack of problem solving skills or inadequate coping strategies were not related to believing in the merits of pursuing psychosocial treatment. We believe that the lack of mental health services in Jordan that would provide psychosocial therapies played a role in this finding. Research reported a significant dearth of mental health staff, including psychiatric nurses, psychologists, and psychiatrists in Jordan (WHO, 2011). Even the few available services are often not well recognized or understood, and many Jordanians lack knowledge about psychiatric illnesses and treatments (Nasir & Al-Qutob, 2005). Adolescents who believed depression is caused by biological factors (e.g., chemical imbalance, genetics) were more likely to report willingness to take medications, but no relationships were revealed with psychotherapy. It is possible that adolescents did not have the needed knowledge that psychosocial treatment may be helpful even if biological factors play a role in the onset of depression. It is important to consider that adolescents' willingness to seek help from a particular treatment does not necessarily mean they believe it will be

helpful. Adolescents may seek help from certain sources or avoid others due to fear of the stigma. This is supported by our finding that likelihood to seek a psychotherapy or visit a psychiatrist was negatively associated with depression severity.

Our study revealed that Arab adolescents with higher depression scores were less likely to endorse willingness to seek a professional help, which is a particularly concerning finding. We believe several factors might explain this relationship. It is possible that depressive symptoms like pessimism, indecisiveness, negative thinking, and/or lack of energy interfere with adolescents' ability and motivation to seek help. It is also possible that the fear of stigma associated with depression is the underlying factor inhibiting adolescents' help seeking, rather than the symptoms of depression themselves. In other words, as symptoms become more severe, adolescents and possibly their families become more concerned that seeking help would expose the problem and activate the public stigma. This explanation can be supported by Dardas, Bailey, and Simmons' (2016) review of the literature, which drew a maladaptive chain of responses to depression among Arabs, with more symptoms severity often provoking more fear of seeking treatment, which in turn worsens the symptoms and bring further stigmatization. A combination of all these factors may also shape the relationship between depression severity and willingness to seek help. Negative thinking and cognitive distortions may exacerbate both perceived and personal stigma related to the symptoms and discourage treatment seeking (Kanter, Rusch, & Brondino, 2008). Given

the nature of this cross-sectional survey, it is difficult to draw any causal explanations. More experimental and longitudinal investigations are needed to determine the true scope of the findings.

5.4.3 Clinical and Research Implications

As should the case be within every culture, addressing depression among Arab adolescents requires considering all individual, social, and contextual risk factors that may lead to the rise in depression symptoms. It is important to understand how Arabs' spiritual and cultural values and family and societal structure may affect the presentation of depression symptoms among Arab adolescents in order to ensure accurate diagnoses and appropriate interventions.

Screening. Researchers agree that primary care providers should screen all adolescents for depression by asking about risk factors and key symptoms related to functioning in cognitive, social, academic, and family domains. This recommendation is of special importance in Arab countries where there is limited recognition of depression in primary care (Patel, 2000), and where Arabs tend to not interpret cognitive and physical symptoms of depression as mood symptoms (Dardas, Bailey, & Simmons, 2016). It is also important to consider some of the reported challenges to early detection and appropriate interventions for adolescent depression. Adolescents do not readily report on emotional or behavioral manifestations of mental health problems like depression. They might deny the existence of these symptoms or have difficulty

articulating them (Cook, Peterson, & Sheldon, 2009). Adolescents are also less likely than adults to exhibit melancholic symptoms, including depressed mood, marked psychomotor retardation, significant weight loss, or excessive guilt. Rather, depressed adolescents often show high levels of aggressive and violent behaviors, which are often mishandled as disciplinary issues in school or bad behaviors at home (Hankin, 2006). As such, adequate assessment also requires early-detection efforts that employ developmentally and culturally appropriate measurement instruments.

Prevention. Research on preventive strategies for adolescent depression has grown substantially in the past decade. So far, the most successful documented strategy involves (a) identifying at risk cohorts, such as offspring of depressed parents or adolescents with sub-syndromal depression; (b) examining the mechanisms by which risk is imposed; (c) augmenting protective factors; and (d) and utilizing expert clinicians to deliver treatments when needed (Brent, Birmaher, Kolko, Baugher, & Bridge, 2001; Cook et al., 2009; Nomura, Wickramaratne, Warner, Mufson, & Weissman, 2002). Successful programs included developing skills in adolescents and their families like cognitive restructuring, problem solving, stress management, positive parental involvement, and accessing social support. Most of these interventions have been school-based and delivered by school psychologists, teachers, or counselors. The benefit of school-based approaches is that they have the potential to reach large numbers of adolescents with undiagnosed and undertreated depression (Buttigieg et al., 2015;

Duong, Cruz, King, Violette, & McCarty, 2016; Gillham et al., 2006; Merry et al., 2012; Shochet et al., 2001; Spence, Sheffield, & Donovan, 2003).

Another important issue to consider when designing depression prevention programs is gender. There has been a noticeable upsurge of scholarly writing and policy interest in gender approaches to health since the WHO (2002) passed its first Gender Policy, acknowledging gender as an important variable on its own. The policy statement specified depression as a mounting problem that is expected to be the second leading cause of global burden of disease by 2020, and that gender differences in patterns of help seeking and gender stereotyping in diagnosis compound difficulties with identification and treatment of depression. There is a general consensus that to achieve gender equality and gender equity, all sex differences and socially constructed gender differences need to be taken seriously in the planning and delivery of mental health care. If the risk to depression is gender-specific, then prevention strategies cannot be gender-neutral. This recommendation is important in Arab culture, where research revealed that the prevalence, expression, and experience of adolescent depression varied between Arab male and female adolescents, with females having higher risk for experiencing depression, developing psychiatric comorbidities, and experiencing public stigma, and being less likely to seek professional psychological help (Dardas, Bailey, & Simmons, 2016).

Treatment. Birmaher et al. (2007) provided practice parameters for best outcomes in the treatment of childhood and adolescent depression. A key recommendation was that, when a thorough evaluation determines the presence of a depressive disorder, a supported psychotherapy should be initiated. Such a therapy should always include an acute phase to achieve symptomatic remission, a continuation phase to consolidate the response during the acute phase and avoid relapses, and a maintenance phase to avoid recurrences (Birmaher et al., 2007). Each of these three phases should include psychoeducation, supportive management, and family and school involvement. Pharmacological treatments are indicated for those children and adolescents who do not respond to supportive psychotherapy or those who have considerable psychosocial impairment, suicidality, agitation, and/or psychosis (Birmaher et al., 2007).

The inclusion of parents in the treatment of adolescent depression is increasingly considered a promising approach. The family environment and relationships, particularly parent-child relationships, are considered among the most robust predictors of adolescent depression (Restifo & Bogels, 2009; Sander & McCarty, 2005). Positive parenting and a supportive cohesive family environment are considered protective factors in preventing depression and suicide (Brent et al., 2009; Sheeber, Davis, Leve, Hops, & Tildesley, 2007). Conversely, impaired parent-child dynamics have been shown to be related to the vulnerability, development, maintenance, and recurrence of depressive disorders in adolescence. As such, there is a general consensus among

researchers and health care providers that considering parental factors is critical for understanding adolescent depression. This recommendation might have particular importance in the Arab culture, where the family, rather than the individual, is the core of the community (Ahmad & Dardas, 2016), and where youth tend to view family as a powerful anchor of their identity and their ability to navigate the future (Khoury & Lopez, 2011). Involving parents in adolescent depression treatment can help parents reinforce what adolescents are learning, and also help adolescents apply what they learn in their own lives. It also helps to support parents in promoting their children's positive mental health.

In the Arab region, the screening, treatment, and prevention practices for depression and other mental illnesses lag far behind recommended parameters. Psychiatric services are mostly confined to a few mental hospitals, psychiatric units in general hospitals, and outpatient psychiatric clinics. These entities often provide psychopharmacological treatments, whereas psychotherapy services are critically underdeveloped and almost entirely absent for families of relatives with mental illness (Okasha, Karam, & Okasha, 2012). There is also a significant dearth of mental health staff, including psychiatrists, psychologists, and psychiatric nurses (WHO, 2011). In addition, although the majority of Arab countries have agreed in principle to integrate mental health services into the primary health care system, implementation has been substantially limited (Okasha et al., 2012). This critical mental health situation calls for

urgent governmental efforts to create and promote mental health services that can meet the large and growing mental health needs of the Arab population. It will then be the task of future research to clarify whether existing practice parameters and models, which are primarily Western, can be translated directly to the Arab population, or whether the sociocultural context might influence the experience and response to treatment, requiring adapted approaches.

5.5 Conclusion

This study revealed alarming results in terms of the current high prevalence and likely social determinants of adolescent depression in Jordan. Healthcare providers, researchers, and educators should focus attention on developing effective and culturally appropriate screening, prevention, and intervention approaches using evidence-based guidelines to promote Jordanian adolescent mental health, particularly for depression. This approach will be important not only for Jordan, but for all of the Arab region, given that many of the Arab countries have been witnessing years of mass violence, armed conflicts, and war. The stress of conflict and war is exacerbated by the substantial lack of mental health services and the stigma associated with mental illness on the one hand, and poverty, unemployment, and lack of reasonable hopes for a decent future in the context of corruption of regimes and perceived social injustice on the other. Thus, poor mental health among adolescents in the Arab countries not only has immediate effects on the health and wellbeing of Arab adolescents and their families, but also long-term

negative implications on their health and wellbeing as adults, thus impacting future generations and society as a whole.

This study should be considered within the context of its limitations. The use of the BDI does not provide a true diagnosis of depression, although it is validated with good sensitivity in differentiating depressed from non-depressed individuals. The true prevalence may be higher or lower. Second, the cross-sectional nature of this study provides information about the associations among key variables, but longitudinal studies are needed to determine true predictors of adolescent depression. Finally, given that the survey was school-based, it does not provide information about Jordanian adolescents who are not enrolled in school, although the majority (90%) of youth ages 12-17 in Jordan attend school. Despite these limitations, this is the first study of its kind to establish a national prevalence profile of the presence and severity of depression symptoms in Jordanian adolescents and provides a solid foundation from which to conduct future research to establish the best clinical approaches for screening, treatment, and prevention in this vulnerable population.

6. Personal and Perceived Depression Stigma among Arab Adolescents: Findings from a Nationally Representative Survey

6.1 Introduction

The stigma of mental illness is still a primary issue that concerns mental health care providers throughout the world. It generates various disadvantages for individuals with mental illness that include violation of their human and civil rights (WHO, 2007). In addition, stigma has long been associated with poor engagement in, adherence to, and utilization of mental health services (Al-Krenawi, Graham, Dean, & Eltaiba, 2004; Barney, Griffiths, Jorm, & Christensen, 2006). As such, there is a general consensus that combating stigma is a critical step towards promoting the health and wellbeing of individuals with mental illness and their families.

Depression is projected to be the largest contributor to global disease burden by 2030 (WHO, 2008), which calls for researchers and health care providers to better recognize and meet the needs of individuals at risk for depression or in need of treatment. Adolescence is considered a critical time for early detection and adequate treatment of depression (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006). Unfortunately, research reveals that adolescents do not readily report on emotional or behavioral manifestations of mental health problems like depression (Cook, Peterson, & Sheldon, 2009), and they often hold negative attitudes towards mental health services

due to fears of stigmatization (Arbanas, 2008; Sheffield, Fiorenza, & Sofronoff, 2004; Williams & Pow, 2007).

Adolescents with depression may experience two types of stigma: personal stigma, which is the negative feelings and attitudes they have toward themselves (Goffman, 1963), and perceived stigma, which reflects how individuals perceive the general public's attitudes toward depression (Corrigan, 2000). Research has established a connection between personal and public stigma such that personal stigma exists when the stigmatized individual internalizes others' negative ideas and responses leading to negative thoughts and emotional reactions toward themselves (Corrigan & Watson, 2002; Gary, 2005). Interestingly, Armstrong and Secker (2000) suggested that adolescents experience an enhanced sensitivity to public stigma because of the strong influence of their friends and peer group, making them at increased risk for internalizing the public's negative views about them.

In Arab communities, the attitudes toward seeking help for mental illness are substantially affected by existing mental illness stigma. Arab families often try to conceal, delay, or deny the mental illness or needed treatment, resulting in poor prognosis and a complicated illness trajectory (Fakhr El-Islam, 2008). However, the stigma of depression per se has not yet been fully examined among Arab adolescents. In an earlier pilot investigation (Dardas, Silva, Noonan, & Simmons, 2016a), we collected data from 88 Jordanian adolescents and the preliminary findings suggested these

adolescents may experience depression-related stigma that affects their attitudes and willingness to seek professional help. We called for research with representative samples to further address these issues and to highlight the distinctions between personal and perceived depression stigma within the Arab context. The lack of research on how depression stigma manifests among Arab adolescents makes it difficult to design, implement, and disseminate effective interventions to improve the detection and treatment of adolescent depression in the Arab region (Dardas, Bailey, & Simmons, 2016). The lack of research on how depression stigma manifests among Arab adolescents makes it difficult to design, implement, and disseminate effective interventions to improve the detection and treatment of adolescent depression in the Arab region (Dardas, Bailey, & Simmons, 2016).

Research from Western samples has documented that individual characteristics such as age (Peluso Ede & Blay, 2009), gender (Arbanas, 2008; Griffiths, Christensen, & Jorm, 2008; Jorm & Wright, 2008; Sheffield et al., 2004; Williams & Pow, 2007), socioeconomic status and geographic area (Simmons, Yang, Wu, Bush, & Crofford, 2015), depression history (Griffiths et al., 2008; Jorm & Wright, 2008; Sheffield et al., 2004), familiarity with persons who have depression (Arbanas, 2008; Griffiths et al., 2008; Jorm & Wright, 2008; Kelly & Jorm, 2007; Wang & Lai, 2008; Wolkenstein & Meyer, 2009), and familiarity with mental health services (Simmons, Wu, Yang, Bush, & Crofford, 2015) can impact one's experience of depression stigma and attitudes towards

seeking professional psychological help. Research has also revealed that adolescents' characteristics have differential impacts on their reported levels of personal and perceived depression stigma (Calear, Griffiths, & Christensen, 2011). These relationships are unknown for Arab adolescents. Therefore, the overall purpose of this study was to determine levels of depression stigma among Arab adolescents. The specific aims were to: (1) describe the severity of personal and perceived depression stigma among Arab adolescents and its relationship to severity of depression and (2) determine adolescent characteristics associated with severity of depression stigma among Arab adolescents.

6.2 Methods

6.2.1 Design

This study was conducted in Jordan, a Middle Eastern Arab country. A nationally representative, school-based survey was utilized. The methods for this study were described in details in chapter 5. Briefly, data were collected from adolescents aged 12-17, using a packet of self-administered questionnaires that included measures on individual characteristics, depression severity, and depression stigma. We utilized a stratified random sampling procedure to select schools that represent the three main regions in the country (north, central, and south). A passive consenting procedure was used to obtain parental consents, while returning the survey questionnaires was considered a tacit assent for the adolescents. The study obtained the needed Institutional Review Board approvals from both Duke University and the University of Jordan.

6.2.2 Measures

6.2.2.1 Adolescent characteristics

The sociodemographic and health characteristics questionnaire was used to obtain information regarding the adolescent's sex, age, region of residence, parents' education, family monthly income, whether the adolescent has any chronic health problem, mental health problem, or a learning difficulty, whether the adolescent had a parent, relative, or friend with mental illness, and whether the adolescent has ever sought a psychological treatment.

6.2.2.2 Depression severity

The validated Arabic version of the Beck Depression Inventory-II (BDI-II) (Beck, Steer, & Brown, 1996) was used to assess depression symptoms among Jordanian adolescents. The BDI-II is a self-reported questionnaire that includes 21 items scored from 0 (minimal depression) to 3 (severe depression). The Arabic version of the BDI-II (Al-Musawi, 2001) showed high test-retest stability (0.93), high internal consistency (0.92-0.94), and high construct validity (0.93). A depression total score was calculated by summing the 21-items, with possible total scores ranging from 0 to 63 and higher total scores indicating greater severity of depression. According to Beck et al. (1996), scores ranging from 0 to 13 indicate minimal depression, 14–19 indicate mild depression, 20–28 indicate moderate depression, and 29–63 indicate severe depression.

6.2.2.3 Depression stigma

We used the 18-item depression stigma scale (DSS) (Griffiths et al., 2008) to assess the stigma associated with depression. The DSS has two subscales (9 items each) that assess personal stigma (personal attitudes towards depression), and perceived stigma (what participants think most other people believe about depression). The DSS assesses the following major themes: depression as an illness, personal control of depression, depression as a character flaw, dangerousness and unpredictability of someone with depression, shame of depression, and avoidance and discrimination of those with depression. Item responses are scored on a Likert-scale (0 = strongly disagree, 4 = strongly agree), with a higher score being indicative of greater stigma. Using a community adult sample, the measure demonstrated adequate test-retest reliability (0.71) and internal consistency (0.78) (Griffiths et al., 2008). Within an adolescent sample, the internal consistency for the personal and perceived subscales were 0.70 and 0.77, respectively (Calear et al., 2011). No Arabic version was available for the scale. Therefore, we translated it into Arabic language using a systematic procedure that included translation and back-translation, described in detail in chapter four.

6.2.3 Analysis Plan

All data were analyzed using SAS 9.4 software (SAS Institute, Cary, North Carolina). Descriptive statistics were used to detail the sample characteristics, BDI-II depression total score, and DSS stigma measures. Non-directional statistical tests were

conducted with the level of significance set at 0.05 for each two-tailed test. An analysis of covariance approach using a multivariable General Linear Model (GLM) was used to determine the relationship BDI-II depression total scores and each stigma outcome, after adjusting for the sociodemographic and health characteristics of the adolescent (covariates). Each multivariable GLM was then reduced to a pragmatic model using an iterative backward elimination process by which the least significant covariate was omitted until the model included BDI-II depression severity and only statistically significant ($p \leq 0.05$). For each characteristic in the model with a statistically significant effect ($p \leq 0.05$), *a posteriori* pairwise comparisons using t-test were conducted to test for between-group differences in the adjusted least-squares means. To address effect size and clinical significance, the eta-squared for each model and partial eta-squared for each explanatory variable within each multivariable model was determined.

6.3 Results

6.3.1 Sample Characteristics

This study included a representative sample of 2,349 Jordanian adolescents. Of the 2,349 participants, 43% came from the central urban region of the country, 34% were from the northern suburban region, and 23% were from the southern rural region. The mean age was 15.0 years ($SD=1.5$, range 12-17) and 59% were female. About half of the sample (55%) reported a family monthly income ranging between JD300 and 1000 (\$423-1410), while 31% had family monthly income less than JD300 (\$423). Approximately,

14% reported having chronic health problem, 15% reported having a mental health problem, and 8% reported receiving a psychiatric diagnosis. In addition, 3% of the adolescents reported that one of their parents had a mental illness, 11% reported a relative with a mental illness, and 17% reported having a friend with a mental illness. Of the 2,349 adolescents, 22% reported they have ever sought psychological help. A family member (50%) was the most commonly reported source of psychological help, followed by a friend (15%), a religious leader (11%) and a school counselor (8%). On the other hand, psychiatrists (5%) and general practitioners (4%) were the least reported sources of psychological help.

6.3.2 Depression Stigma

Of the total 2,349 Jordanian adolescents who returned the survey packets, 1,503 adolescents completed the DSS depression stigma scale, while 846 adolescents partially completed the scale. Missing item-level data was imputed for each adolescent with a partially complete DSS questionnaire when at least 14 of the 18 items (78%) were completed. In such cases, the adolescent's mean score for non-missing items were calculated and imputed for each missing item score (Shrive, Stuart, Quan, & Ghali, 2006). Among the 846 individuals with missing data, 732 had missing item-level data imputed, while 114 had more than 80% missing data and were omitted from the analyses, giving a total sample size of 2,235. The DSS total score was then calculated for 2,235 adolescents with complete data after the imputation was applied. The internal

consistency (Cronbach's α) was 0.80 for the 18-item total score and 0.61 and 0.76 for the DSS personal and perceived subscales, respectively.

Table 24 details the DSS total scores as well as the personal stigma and perceived stigma subscale scores. The mean total score was 35.9 (SD=10.8, 95% CI=30 to 43), with scores ranging from 0-72. On the personal stigma subscale, the mean score was 17.5 (SD=5.7, 95% CI=14 to 21), with scores ranging from 0-36. On the perceived stigma subscale, the mean score was 18.5 (SD=6.6, 95% CI=15 to 23), with scores ranging from 0-36. A Pearson correlational analysis indicated a significant moderate, positive correlation between the personal and perceived subscale scores ($r=0.55$, $p<.0001$, $n=2,294$).

Table 24: Depression severity and depression stigma

Measures	N	Mean \pm SD	Median (25 th , 75 th)	Range
DSS Total Scores	2235	35.9 \pm 10.8	36 (30, 43)	0-72
DSS Personal Stigma Subscale	2305	17.5 \pm 5.7	18 (14, 21)	0-36
DSS Perceived Stigma Subscale	2294	18.5 \pm 6.6	18 (15, 23)	0-36
BDI-II Depression Total Score	2330	16.3 \pm 11.2	14 (8, 23)	0-55

BDI-II = Beck Depression Inventory-II; DSS = Depression Stigma Scale; 25th, 75th percentile

The DSS total score measure does not have published clinical cutoff scores for determining mild to severe stigma. Using an approach applied by Simmons, Yang, et al.

(2015), we divided the possible range of DSS depression total scores (0 to 72) into tertiles to determine the percent of the scores with low, moderate, and high stigma.

Accordingly, 12% reported low stigma, 77% moderate stigma, and 11% high stigma.

Items that adolescents were more likely to agree with included: 'people with depression could snap out of it if they wanted' (67%) and 'most people believe that people with depression could snap out of it if they wanted' (58%). On the other hand, adolescents agreed least on the following items: 'I would not employ someone if I knew they had been depressed' (26%) and 'people with depression are dangerous' (27%). Half of the adolescents tended to either agree or strongly agree on the DSS items.

6.3.3 Depression Severity

The mean BDI-II depression total score of 16.3 (SD=11.2, 95% CI= 15.8 to 16.7, see Table 24). Among the 2,330 adolescents with total scores, 34% reported depression in the moderate to severe range. Severity of depression observed was minimal (47%), mild (18%), moderate, (19%), and severe (15%). The internal consistency (Cronbach's alpha) for the BDI-II 21 items was 0.89.

A Pearson correlation analyses indicated that BDI-II depression total scores were not significantly associated with the DSS depression stigma total scores ($r=0.018$, $p=0.3844$, $n=2223$). Similarly, the BDI-II depression total scores were not significantly related to personal stigma ($r=0.002$, $p=0.9341$, $n=2290$) and perceived stigma ($r=0.027$, $p=0.1907$, $n=2279$).

6.3.4 Adolescent Characteristics and Depression Stigma

Table 25 presents the results from the multivariable GLMs conducted to determine the relationship between BDI-II depression total scores and each stigma outcome, after adjusting for 12 adolescent sociodemographic and health characteristics. The table provides the Type III sum of squares results for each characteristic, after adjusting for effects of the other explanatory variables in the model.

The GLM results indicated that age, region, and the adolescent's history of a mental health problem were significantly associated with depression stigma total scores (all $p \leq 0.05$). The adolescent's history of a mental health problem was the only characteristic significantly associated with personal stigma scores ($p=0.0102$). Perceived stigma scores were related to sex, age, region, and history of mental health problem (all $p \leq 0.05$).

Table 25: DSS stigma measures: multivariable general linear models

Characteristic	DSS Stigma Total Score		DSS Personal Stigma Score		DSS Perceived Stigma Score	
	F _{df, df}	<i>p</i>	F _{df, df}	<i>p</i>	F _{df, df}	<i>P</i>
Depression total score	3.55 _{1,1838}	0.0595	2.19 _{1,1838}	0.1391	3.39 _{1,1838}	0.0658
Sex	0.61 _{1,1838}	0.4332	1.39 _{1,1838}	0.2390	5.10 _{1,1838}	0.0241
Age	5.54 _{2,1838}	0.0040	2.56 _{2,1838}	0.0776	6.84 _{2,1838}	0.0011
Region of residence	9.09 _{2,1838}	0.0001	1.97 _{2,1838}	0.1400	12.16 _{2,1838}	<.0001
Fathers' education	1.17 _{2,1838}	0.3117	1.27 _{2,1838}	0.2806	1.31 _{2,1838}	0.2699
Mothers' education	1.34 _{2,1838}	0.2615	0.23 _{2,1838}	0.7946	2.59 _{2,1838}	0.0756
Family monthly income	0.09 _{2,1838}	0.9161	0.56 _{2,1838}	0.5735	0.07 _{2,1838}	0.9354
Mental health problem	6.39 _{1,1838}	0.0116	6.61 _{1,1838}	0.0102	4.08 _{1,1838}	0.0286
Psychiatric diagnosis	0.12 _{1,1838}	0.7241	0.07 _{1,1838}	0.7920	0.24 _{1,1838}	0.6216
Parent with a mental illness	1.78 _{1,1838}	0.1827	0.36 _{1,1838}	0.5492	1.80 _{1,1838}	0.1794
Relative with a mental illness	2.73 _{1,1838}	0.0985	3.55 _{1,1838}	0.2143	2.80 _{1,1838}	0.0943
Friend with a mental illness	0.00 _{1,1838}	0.9607	0.27 _{1,1838}	0.6014	0.38 _{1,1838}	0.5363
Ever sought a psychological help	0.09 _{1,1838}	0.7614	0.00 _{1,1838}	0.9468	0.90 _{1,1838}	0.3432

For each stigma outcome, a General Linear Model (GLM) was performed. The results are for the Type III sum of squares to test for the effect of each characteristic on the stigma measure, after adjusting for the other explanatory variables in the model.

Table 26 provides the results of the final pragmatic models that included only the characteristics that were statistically significant associated with the stigma measure under consideration, after adjusting for other explanatory variables included in the model and derived by applying the backward elimination variable selection method.

The Type III Sum of Squares results are provided for each characteristic. The adolescent's age, region of residence, and history of a mental health problem were significantly associated with severity of depression stigma (all $p \leq 0.05$). Only age and mental health history were associated with personal stigma; whereas, sex, age, region, and mother's education were related to perceived stigma scores.

Table 27 details the nature of the relationship between each significant characteristic and the stigma outcome in each final model, after controlling for effects of the other characteristic retained in the final model. The table presents the adjusted least-squares means for each level of the significant categorical covariates, and displays the results of the multiple comparisons of the least squares means using *a posteriori* t-tests. Statistically significant pairwise comparisons are provided.

The results indicated that the mean depression stigma total scores were significantly higher in the following groups of adolescents: (1) age 14 or older; (2) residing in the northern and central regions; (3) whose father had an educational level more than Tawjihi; and (4) who reported no current or prior mental health problems. The mean depression personal stigma scores was significantly higher among adolescents aged 14 or older and those who reported no current or prior mental health problems. Finally, mean depression perceived stigma scores was significantly higher in the following groups of adolescents: (1) females; (2) age 14 or older; (3) residing in the central regions; and (3) whose mother had an educational level more than diploma.

Table 26: DSS stigma measure: final pragmatic models

Characteristic	DSS Stigma Total Score		DSS Personal Stigma Score		DSS Perceived Stigma Score	
	F _{df, df}	<i>p</i>	F _{df, df}	<i>p</i>	F _{df, df}	<i>p</i>
Depression total score	3.80 _{1,2067}	0.0594	1.09 _{1,2226}	0.2959	2.06 _{1,2168}	0.1517
Sex	----	----	----	----	4.76 _{2,2168}	0.0293
Age	7.34 _{2,2067}	0.0007	5.47 _{2,2226}	0.0043	7.97 _{2,2168}	0.0004
Region of residence	6.23 _{2,2067}	0.0020	----	----	11.97 _{2,2168}	<.0001
Fathers' education	4.73 _{2,2067}	0.0089	----	----	----	----
Mothers' education	----	----	----	----	8.82 _{2,2168}	0.0002
Mental health problem	4.60 _{1,2067}	0.0321	7.21 _{1,2226}	0.0073	----	----

Each General Linear Model (GLM) reduced to include only those characteristics significantly associated with the stigma outcome, after adjusting for other explanatory variables in the model ($p \leq .05$). Type III sum of squares results are reported for each characteristic.

Table 27: Final pragmatic model: significant pairwise comparisons

Characteristic	N	DSS Total Stigma (Adjusted Mean ± SD)	Significant Pairwise Comparisons
Age, in years			
1_Age 12-13	381	34.6 ± 1.2	
2_Age 14-15	699	35.8 ± 1.3	2>1
3_Age 16-17	1091	36.7 ± 1.3	3>1
Region of origin			
North	722	36.2 ± 1.2	N>S
Center	938	36.6 ± 1.4	C>S
South	511	34.6 ± 1.3	
Fathers' education			
1_Less than Tawjihi	496	34.7 ± 1.3	
2_Tawjihi	778	36.1 ± 1.3	2>1
3_Diploma or higher	897	36.7 ± 1.3	3>1
Mental health problem			
Yes	362	35.0 ± 1.5	
No	1854	36.2 ± 1.5	N>Y

A posteriori pairwise comparisons conducted using t-tests to test for differences in the least squares means; Significant pairwise comparisons indicated ($p \leq 0.05$).

Table 27: Final pragmatic model: significant pairwise comparisons (cont.)

Characteristic	N	DSS Personal Stigma (Adjusted Mean \pm SD)	Significant Pairwise Comparisons
Age, in years			
1_Age 12-13	381	34.6 \pm 1.2	
2_Age 14-15	699	35.8 \pm 1.3	2>1
3_Age 16-17	1091	36.7 \pm 1.3	3>1
Mental health problem			
Yes	326	35.0 \pm 1.5	
No	1845	36.2 \pm 1.5	N>Y
Characteristics	N	DSS Perceived Stigma (Adjusted Mean \pm SD)	Significant Pairwise Comparisons
Sex			
Female	1274	35.7 \pm 1.6	F>M
Male	897	36.4 \pm 1.3	
Age, in years			
1_Age 12-13	381	34.6 \pm 1.2	
2_Age 14-15	699	35.8 \pm 1.3	2>1
3_Age 16-17	1091	36.7 \pm 1.3	3>1, 3>2
Region of Residence			
North	722	36.2 \pm 1.2	
Center	938	36.6 \pm 1.4	C>N; C>S
South	511	34.6 \pm 1.3	N>S
Mothers' education			
1_Less than Tawjihi	383	35.4 \pm 1.6	3>1
2_Tawjihi	842	36.0 \pm 1.5	3>2
3_Diploma or higher	905	36.3 \pm 1.4	

A posteriori pairwise comparisons conducted using t-tests to test for differences in the least squares means; Significant pairwise comparisons indicated ($p \leq 0.05$).

6.4 Discussion

This is the first study to assess Arab adolescents' own attitudes towards depression (personal stigma) and their perception about the attitudes of others towards depression (perceived stigma) using a nationally representative sample. Overall, findings revealed that almost half of the adolescents tended to agree on the DSS items that reflect stigmatizing attitudes towards depression. Interestingly, adolescents reported higher rates of perceived depression stigma than personal depression stigma. To date, the level of personal and perceived depression stigma have been reported in few adult population studies (Griffiths et al., 2008; Griffiths et al., 2006; Simmons et al., 2015), and one adolescent population study (Calear, Griffiths, & Christensen, 2011). In these Western studies, participants similarly rated other people's stigma as being higher than their own personal stigma. This difference might be a reflection of a social desirability bias, which makes participants more willing to rate the community's attitudes and beliefs towards people with depression than reflecting on their own attitudes (Griffiths et al., 2006; Peluso Ede & Blay, 2009). If this explanation holds true, Calear et al. (2011) have argued that the reported perceived stigma levels might provide a more accurate representation of depression stigma in the studied community. On the other hand, Griffiths et al. (2008) suggested that the high levels of perceived stigma might be due to an overestimation of the extent of the stigma in the community and

thus, recommended publicizing the actual personal stigma levels in order to reduce the perceived stigma.

6.4.1 Depression and Stigma

The severity of depression stigma differs according to the depression status of the respondent and the type of stigma under study (Griffiths et al., 2008). Based on findings from previous Arab literature, which indicate high levels of stigma among those experiencing mental illness (Dardas, Bailey, & Simmons, 2016), we assumed that experiencing depression would be associated with high levels of both personal and perceived stigma. Unexpectedly, our study did not reveal such a significant relationship. In other words, the levels of personal and perceived depression stigma that Arab adolescents reported were not influenced by whether they themselves have depression or not. As such, Arab adolescents who personally experience depression may still have stigmatizing beliefs and attitudes towards others who suffer the same mental health problem. This finding supports a study by Teachman, Wilson, and Komarovskaya (2006), which found that both those with and those without mental illness equally hold negative views of people with mental illness. In other words, being a member of the stigmatized group may not result in softening biases against this group. According to Goffman's (1963) theory of spoiled identity, personal stigma exists when the stigmatized individual internalizes people's negative attitudes and agrees with them. Thus, it may be that the impact of the perceived stigmatizing beliefs and attitudes become so strongly

embedded that personal experiences cannot easily change them. From an implication perspective, our findings indicate that designing stigma reduction interventions may not need to be targeted around depression severity. Both adolescents with and without depression may have the same benefits from potential universal anti-stigma programs.

6.4.2 Depression Stigma and Adolescent Characteristics

Our analyses revealed that adolescent's sex, age, region of residence, parents' education, and their personal history of mental health problem are factors significantly associated with their depression stigma levels. These findings suggest there may be value in targeting and tailoring programs to reduce depression stigma based on this set of sociodemographic and health-related factors.

While no sex differences were revealed on total stigma scale or personal stigma subscale, females had significantly higher mean scores on the perceived stigma subscale. Both male and female adolescents shared almost same personal attitudes towards depression, yet females believed the public holds more negative attitudes towards depression than males did. Studies on sex differences regarding the experience of depression stigma have produced mixed results. Some studies reported greater stigma among females (Chowdhury et al., 2000; Lauber, Nordt, Falcato, & Rössler, 2004), others have reported the reverse (Barry, Doherty, Hope, Sixsmith, & Kelleher, 2000; Corrigan & Watson, 2007; Crisp, Gelder, Goddard, & Meltzer, 2005), while still others reported no difference (Chowdhury et al., 2001; Dietrich, Mergl, & Rummel-Kluge, 2014; Pyne et al.,

2004; Yen et al., 2005). According to Griffiths et al. (2008), disparities in these findings might be due to heterogeneity between the studies in terms of samples, methods, and analysis, and differences in the type of stigma under study (e.g., personal, public, or combined stigma). Sex comparisons on personal and perceived depression stigma levels have been reported in two adult studies (Griffiths et al., 2008; Griffiths, Christensen, Jorm, Evans, & Groves, 2004), and one adolescent study (Calear et al., 2011). In these studies, higher levels of personal depression stigma were reported among males compared to females. Our mixed findings might be contextually-determined. Research has shown that Arab females are often at higher risk for experiencing public stigma than their male counterparts (Dardas, Bailey, & Simmons, 2016).

Age was the only adolescent characteristic that was significantly associated with depression stigma total scores as well as personal and perceived stigma scores. In particular, stigma scores were higher among adolescents aged 14 or older. It is possible that as adolescents get older, they experience an enhanced sensitivity to public stigma (Armstrong & Secker, 2000) and become more aware of existing negative attitudes (Griffiths et al., 2008).

Adolescents residing in the southern rural region had significantly lower perceived stigma than those residing in the urban central region and suburban northern region, but no differences in personal stigma were found. This was true both controlling for and not controlling for demographic and other health characteristics. Findings from

the Western literature revealed that rural individuals with a history of depression often experience public stigma (Jackson et al., 2007; Kitchen Andren et al., 2013) that makes it difficult for them to seek psychological treatment (Simmons et al., 2015). While actual public stigma levels might be higher in the rural Jordanian areas, we find it promising that adolescents residing in these areas perceived low level of depression stigma, which may enhance the acceptance of interventions on adolescent depression screening and management. It is also possible that living in rural regions correlated with less exposure to the social phenomena that induce stigma, and thus served as a protective factor against social stigma. Given the lack of studies on rural/urban Arab adolescents' mental health, it is difficult to draw firm conclusions on the crude effects of rurality versus urbanicity on the adolescents' experiences of depression stigma.

It is interesting that having parents with higher educational levels was associated with greater depressions stigma among adolescents. This finding is not consistent with Western research, where higher education is often found correlated with lower stigma levels (Griffiths, Christensen, & Jorm, 2008; Nakash, Nagar, & Levav, 2015; Simmons, Yang, Wu, Bush, & Crofford, 2015; Wadian, 2013). It is possible that our finding has an embedded cultural component. Those with higher education might have more social concerns regarding their status in the community and thus, are more sensitive to stigmatizing issues such as mental illness. The other possible argument is that our sample included only adolescents' perspectives, while available evidence from the

Western literature included only adults samples. It is possible that as adolescents age and get more education, they themselves would report lower stigma levels. This is certainly an area for future investigation in Arab countries.

Adolescents who reported no current or prior mental health problems had higher personal depression stigma than those with a history of mental health problems, but no difference was found with regard to perceived stigma. Both adolescents with and without mental health problems shared almost same perceptions regarding the public attitudes towards people with depression, yet those with a personal history of mental health problems had less negative attitudes towards depression. While this finding might seem to contradict our earlier discussion on the lack of relationship between stigma and the personal experience of depression, it is possibly due to the fact that those who reported mental health problems specified stress and anxiety as the main mental health problems they experience. Finally, while several studies have reported that familiarity with persons with mental illness is inversely associated with stigmatizing attitudes of that mental illness (Griffiths et al., 2008; Sheffield et al., 2004; Wang & Lai, 2008), our study did not support this hypothesis. Having a parent, relative or friend with depression or mental illness did not have significant impact of adolescents' reported depression stigma scores. This issue might be related to lack of knowledge about depression despite having greater interaction with depressed others.

6.4.3 Implications

6.4.3.1 A school-based approach

Since knowledge, skills, and attitudes attained during adolescence are critical in establishing lifelong self-management and health-related behaviors (Holmbeck, 2002), and since negative attitudes tend to calcify with time and become more resistant to change, anti-stigma efforts need to start as early as possible. This goes in line with the World Psychiatric Association's philosophy on the importance of educating children about mental illness in order to prevent the formation of negative attitudes and to foster more accurate understanding and greater acceptance of people with mental illness (Sartorius & Schulze, 2005). Schools are promising settings to achieve this goal. Unfortunately, Arab researchers and educators agree that there is little discussion in Arab schools about the meaning of mental illness and how individuals need to respond to it (Dardas & Simmons, 2015; Okasha, Karam, & Okasha, 2012). The inclusion of these topics to the educational curricula can help a great deal in eliminating stereotypes and false assumptions about people with mental illness like depression, and can ultimately encourage depressive adolescents to seek help. We hope that by describing the prevalence of depressive symptoms and feelings of stigmatization among Jordanian school adolescents, we can bring attention to these critical issues for more systematic and policy-level efforts in schools.

Despite the significant influence schools can have on students' perception and management of mental illness (Welsh, Parke, Widaman, & O'Neil, 2001; Zins, Weissberg,

Wang, & Walberg, 2004), there is a substantial lack of school-based mental health policies and resources in most Arab countries, including Jordan. With almost two million child (33% of total population) being enrolled in Jordanian schools (JMOE, 2014), targeting these settings can be promising for early detection and management of depression symptoms (Adelman & Taylor, 2006). Students are substantially more likely to seek help when school-based mental health services are available (Slade, 2002). Research also has revealed that promoting mental health services in schools can lead to significant reductions in special education and disciplinary referrals (Bruns, Walrath, Glass-Siegel, & Weist, 2004); enhance students' social and academic performance (Greenberg et al., 2003); and reduce emotional and behavioral problems, such as conduct disordered behavior, attention deficit/hyperactivity, and depression (Hussey & Guo, 2003). Indeed, schools-based programs were found to be more influential on the mental health of young people than any other community services (Frauenknecht, 2003). In addition, performing systematic mental health assessment in schools can account for the stigma and fears factor as students are not required to seek help on their own. However, it is important to acknowledge that available school-based programs were mostly developed by and for Western populations. We still need to test the effectiveness of these interventions in Arab schools before translating them into practice.

Incorporating anti-stigma interventions into school curricula is critically important. Knowledge, skills, and attitudes attained during adolescence is critical in

establishing lifelong self-management and health-related behaviors (Holmbeck, 2002). As such, school adolescents, especially early adolescents, can benefit from mental health education in schools as prevention. They can learn how to recognize signs of mental health problems in themselves and their peers. By having resources available within schools and by reducing stigmatization of mental illness, school adolescents may be more likely to seek help early for themselves and serve as sources of acceptance, support, and referral for peers who experience mental health problems. Adolescents can carry forward the knowledge and skills they learn in schools as a protective factor when transitioning into early adulthood (Holmbeck, 2002).

6.4.3.2 A national-wide approach

Findings from two systematic reviews on adolescent depression (Dardas, Bailey, & Simmons, 2016) and mental illness stigma (Dardas & Simmons, 2015) in the Arab region revealed that accessing professional services is the turning point at which the stigma of depression is expected to be activated. Therefore, we strongly suggest integrating mental health services into non-stigmatizing frameworks, such as general medical clinics. National programs that aim to change community norms, attitudes, and practices that negatively impact Arab's mental health may be promising. For example, a national-wide mental health literacy campaigns may account for the stigma and fears factor as individuals are not required to seek help on their own. In addition, such efforts may increase the visibility of psychosocial treatments to the general public and provide

greater education about depression and treatment, which may ultimately increase treatment seeking. However, Wei, Hayden, Kutcher, Zygmunt, and McGrath, (2013) argued that there is a supportive evidence on the effectiveness of in-school mental health literacy programs on improving knowledge, attitudes, and help-seeking behavior, but more research is needed before decisions to scale-up mental health literacy campaigns to the national level. In a systematic review on the effectiveness of mass media interventions for reducing stigma towards people with mental health problems, Papadopoulos (2009) found that such interventions may reduce prejudice, but there is insufficient evidence to determine their effects on discrimination. Further, Papadopoulos could not find evidence on the real costs, adverse effects or other outcomes of these interventions. Another important finding in this review is that no studies were found in the Arab region. More research is apparently needed to explore best anti-stigma interventions for the Arab region. We hope that by describing the prevalence of depression symptoms and its associated stigma among the young population in Jordan, we can bring attention to these critical issues for more systematic and policy-level efforts.

6.5 Conclusion

The current study was designed to advance understanding of depression stigma among Arab adolescents. Our study provides important information for researchers, health care providers, and educators who wish to tackle depression stigma in early

developmental stages. However, our findings should be considered within the context of its limitations. First, the self-report nature of the used measures, especially the depression stigma measure has its own limitation. Social desirability and the tendency of one to portray own's views as positive might affect the perceived stigma scores compared to personal stigma scores. This study also does not allow for causal explanations because of self-selection, temporal ambiguity, and unknown confounding variables that might threaten internal validity. Finally, while Arab societies have many parallels in family structure and social processes, there are still heterogeneous cultural differences among Arab countries, and we are thus careful in extending our findings beyond the Jordanian context. Despite these limitations, this is the first study to shed light on how depression stigma manifests among Arab adolescents. This is also the first Arab study to isolate the influence of adolescent depression and personal characteristics on personal and perceived depression stigma, and highlight the presence of these distinctions early in adolescence. Such distinction can help designing and tailoring interventions for each type.

7. Conclusion

Adolescent depression is often reported as a leading mental health disorder experienced by adolescents worldwide (Costello, Erkanli, & Angold, 2006; Merikangas et al., 2010; Thapar, Collishaw, Pine, & Thapar, 2012). The stigma of mental illness is also considered a global barrier to seeking help for depression and proper treatment adherence (Barney, Griffiths, Jorm, & Christensen, 2006; Brown et al., 2010; Wrigley, Jackson, Judd, & Komiti, 2005). However, very little is known about the prevalence of adolescent depression and its associated stigma in the Arab region. As we discussed in chapters one, two, and three of this document, this is an important gap in the literature as the Arab region has the largest proportion of young people in the world and many of the factors that contribute to the onset of depression. To our knowledge, this is the first study in the Arab region to establish a national prevalence profile of clinically significant symptoms of adolescent depression, and to determine relationships between depression, depression stigma, depression etiologic beliefs, and willingness to seek help for depression among this population.

7.1 Summary of Findings

The study revealed that prevalence rate for moderate to severe depression scores was 34%, with 19% of the adolescents reporting moderate depression and 15% reporting severe depression. The most frequently reported moderate to severe symptoms were crying (43%), self-criticalness (34%), changes in sleep pattern (33%), and changes in

appetite (25%). Severity of depression total scores was significantly higher in the following groups of adolescents: (1) females; (2) ages 14 and older; (3) residing in families with monthly incomes less than JD300 (\$423); (4) reporting a chronic health problem; (5) reporting a mental health problem; (6) reporting a learning difficulty; (7) reporting a psychiatric diagnosis; and (8) reporting seeking psychological help in the past. The eta squared for this model was 0.31, indicating 31% of the variability in the depression total scores was explained by these eight adolescent characteristics. Overall, the prevalence of depression symptoms among Jordanian adolescents seem to be in line with published estimates in Western literature. However, our estimates should serve as an alarm, particularly given that rates of depression in the Arab region are expected to increase rapidly in the context of the Arab Spring, which began in December 2010 and continues to this day.

Adolescents endorsed multiple etiological factors for depression. The factors in which likely or very likely was most often reported were stressful events in one's life (72%), social factors (65%), and one's weak will (56%). On the other hand, the least reported factors were genetic or inherited problems (24%), chemical imbalance (30%), and punishment for wrong doings (35%). Adolescents were more likely to seek help for depression from a family member (57%), followed by a counselor (46%), psychiatrist (43%), religious leader (39%), and general practitioner (28%). In addition, 53% of the adolescents reported they will be willing to take medications for depression, while 50%

expressed willingness to seek a therapy, and 25% of the adolescents reported they will not be willing to seek any professional help for depression.

The majority of the adolescents (88%) reported scores indicating moderate to high depression stigma, while only 12% reported scores indicating low depression stigma. The mean total depression stigma score was 35.9 (SD=10.8, 95% CI=30 to 43), with scores ranging from 0-72. Adolescents agreed the most (67%) with the statement that 'people with depression could snap out of it if they wanted', whereas they agreed the least (26%) on the statement that 'people with depression are dangerous'. Adolescents reported higher rates of perceived depression stigma than personal depression stigma. Depression stigma was not significantly associated with the adolescent's severity of depression, but with adolescent's sex, age, region of residence, parents' education, and history of mental health problem.

7.2 Limitations

We realize that findings from this study must be considered within the context of its limitations. First, the use of the BDI does not provide a true diagnosis of depression, although it is validated with good sensitivity in differentiating depressed from non-depressed individuals. The true prevalence may be higher or lower. Clinical presentations for various medical and psychiatric conditions, as well as reactions to psychosocial stressors, can mimic or confound the picture of depression in adolescents (Hankin, 2006). Some adolescents presenting with symptoms and behaviors that initially

resemble depression develop behavior problems, traumatic stress disorders, or substance abuse rather than depression. Therefore, careful assessment for differential diagnosis using diagnostic interviews is essential. Collateral reports from parents, alternative caregivers, and teachers are also essential for confirming or ruling out depression in adolescence (Birmaher, Brent, & AACAP, 2007). The self-report nature of the depression stigma measure has also its own limitation. Social desirability and the tendency of one to portray own's views as positive might affect the perceived stigma scores compared to personal stigma scores. A second limitation is the cross-sectional nature of this study, which provides information about the associations among key variables, but longitudinal studies are needed to determine true predictors of adolescent depression. Finally, given that the survey was school-based, it does not provide information about Jordanian adolescents who are not enrolled in school, although the majority (90%) of youth ages 12-17 in Jordan attend school.

Despite these limitations, this is the first study of its kind to establish a national prevalence profile of the presence and severity of depression symptoms in Jordanian adolescents, and to provide information on depression stigma, depression etiological beliefs, and likelihood to seek help for depression among this population. The study provides a solid foundation from which to conduct future research to establish the best clinical approaches for tackling depression and its associated stigma in this vulnerable population.

7.3 Where to Go from Here?

Healthcare providers, researchers, and educators should focus attention on developing effective and culturally appropriate screening, prevention, and intervention approaches using evidence-based guidelines to promote Jordanian adolescent mental health, particularly for depression. In the following sections, we formulate our conclusions and provide specific recommendations in light of the study's theoretical framework.

7.3.1 Implications in Light of the Study's Theoretical Framework

This study was guided by perspectives from both Beck's Cognitive Theory of Depression and Roy's adaptation model. The adapted cognitive-adaptation model (CAM) that was used in this study provided an integrated theoretical model of factors associated with depression among Jordanian adolescents. Basic to CAM is that the experience of depression significantly varies by personal, contextual, and cultural characteristics. The model considers variety of focal, contextual, and residual stimuli that can potentially lead to depression. In line with this model, our study revealed that adolescents' sociodemographic, family, and cultural characteristic, and personal beliefs and attitudes towards depression were determinant for the risk and severity of depression. CAM views depression as an outcome of maladaptive responses to the various environmental stimuli and thus, efforts to tackle depression should include helping adolescents learn how to explore the accuracy of their own beliefs and how to

avoid the biasing effects of schema-driven processing, while at the same time considering the role of the surrounding environment in triggering, maintaining, and/or exaggerating the negative patterns of thinking.

An important highlight taken from CAM is also that depression is a complex phenomenon, within which multiple and complex relationships occur. Therefore, the model stresses the importance of considering what factors confound, predict, mediate, or moderate depression outcomes. This issue of special importance to future studies building on our findings. Our cross-sectional survey cannot confirm the exact direction of the identified relationships. An association between a predictor and an outcome is often more complex than a simple bivariate relationship. Rather, this association may be modified by a third variable such as a suppressor, confounder, covariate, mediator, or moderator (MacKinnon et al. 2000). Uncovering outcome mediators help us identify possible mechanisms through which an intervention might achieve its effects. Understanding the mechanisms through which interventions operate is likely to facilitate the development of innovative interventions that will yield larger effect sizes or the same effect sizes at lower cost or risk (Kraemer, 2002). In particular, we could design synergistic and combined intervention programs that would overcome potentially incompatible or mutually antagonistic mechanisms (Stice et al., 2010). On the other hand, consideration of a moderator allows a more precise description of the relationship between variables. Identifying intervention moderators can also help investigators (1)

decide on the best choice of inclusion and exclusion criteria of their samples, (2) identify who might be most responsive to the intervention, and (3) seek better interventions for potential non-responders. Failure to consider the possibility of a moderator effect in the data may lead to inaccurate explanations for an outcome. Overall, to address the complexity of adolescent depression, we need to look beyond lists of variables correlations and attend to the full range of factors implicated in the development, expression, experience, maintenance, and prognosis of the symptoms.

7.3.2 Recommendations for Researchers, Health Care Providers, Educators, and Policy Makers

As should the case be within every culture, addressing depression among Arab adolescents requires considering all individual, social, and contextual risk factors that may lead to the rise in depression symptoms. It is important to understand how Arabs' spiritual and cultural values and family and societal structure may affect the presentation of depression symptoms among Arab adolescents in order to ensure accurate diagnoses and appropriate interventions.

7.3.2.1 Screening

Researchers agree that primary care providers should screen all adolescents for depression by asking about risk factors and key symptoms related to functioning in cognitive, social, academic, and family domains. This recommendation is of special importance in Arab countries where there is limited recognition of depression in primary care (Patel, 2000), and where Arabs tend to not interpret cognitive and physical

symptoms of depression as mood symptoms (Dardas, Bailey, & Simmons, 2016). It is also important to consider some of the reported challenges to early detection and appropriate interventions for adolescent depression. Adolescents do not readily report on emotional or behavioral manifestations of mental health problems like depression. They might deny the existence of these symptoms or have difficulty articulating them (Cook et al., 2009). Adolescents are also less likely than adults to exhibit melancholic symptoms, including depressed mood, marked psychomotor retardation, significant weight loss, or excessive guilt. Rather, depressed adolescents often show high levels of aggressive and violent behaviors, which are often mishandled as disciplinary issues in school or bad behaviors at home (Hankin, 2006). As such, adequate assessment also requires early-detection efforts that employ developmentally and culturally appropriate measurement instruments.

7.3.2.2 Prevention

Research on preventive strategies for adolescent depression has grown substantially in the past decade. So far, the most successful documented strategy involves (a) identifying at risk cohorts, such as offspring of depressed parents or adolescents with sub-syndromal depression; (b) examining the mechanisms by which risk is imposed; (c) augmenting protective factors; and (d) and utilizing expert clinicians to deliver treatments when needed (Brent, Birmaher, Kolko, Baugher, & Bridge, 2001; Cook et al., 2009; Nomura, Wickramaratne, Warner, Mufson, & Weissman, 2002).

Successful programs included developing skills in adolescents and their families like cognitive restructuring, problem solving, stress management, positive parental involvement, and accessing social support. Most of these interventions have been school-based and delivered by school psychologists, teachers, or counselors. The benefit of school-based approaches is that they have the potential to reach large numbers of adolescents with undiagnosed and undertreated depression (Buttigieg et al., 2015; Duong, Cruz, King, Violette, & McCarty, 2016; Gillham et al., 2006; Merry et al., 2012; Shochet et al., 2001; Spence, Sheffield, & Donovan, 2003).

Another important issue to consider when designing depression prevention programs is gender. There has been a noticeable upsurge of scholarly writing and policy interest in gender approaches to health since the WHO (2002) passed its first Gender Policy, acknowledging gender as an important variable on its own. The policy statement specified depression as a mounting problem that is expected to be the second leading cause of global burden of disease by 2020, and that gender differences in patterns of help seeking and gender stereotyping in diagnosis compound difficulties with identification and treatment of depression. There is a general consensus that to achieve gender equality and gender equity, all sex differences and socially constructed gender differences need to be taken seriously in the planning and delivery of mental health care. If the risk to depression is gender-specific, then prevention strategies cannot be gender-neutral. This recommendation is important in Arab culture, where research revealed

that the prevalence, expression, and experience of adolescent depression varied between Arab male and female adolescents, with females having higher risk for experiencing depression, developing psychiatric comorbidities, and experiencing public stigma, and being less likely to seek professional psychological help (Dardas, Bailey, & Simmons, 2016).

7.3.2.3 Treatment

Birmaher et al. (2007) provided practice parameters for best outcomes in the treatment of childhood and adolescent depression. A key recommendation was that, when a thorough evaluation determines the presence of a depressive disorder, a supported psychotherapy should be initiated. Such a therapy should always include an acute phase to achieve symptomatic remission, a continuation phase to consolidate the response during the acute phase and avoid relapses, and a maintenance phase to avoid recurrences (Birmaher et al., 2007). Each of these three phases should include psychoeducation, supportive management, and family and school involvement. Pharmacological treatments are indicated for those children and adolescents who do not respond to supportive psychotherapy or those who have considerable psychosocial impairment, suicidality, agitation, and/or psychosis (Birmaher et al., 2007).

7.3.2.4 Inclusion of parents

The inclusion of parents in the treatment of adolescent depression is increasingly considered a promising approach. The family environment and relationships,

particularly parent-child relationships, are considered among the most robust predictors of adolescent depression (Restifo & Bogels, 2009; Sander & McCarty, 2005). Positive parenting and a supportive cohesive family environment are considered protective factors in preventing depression and suicide (Brent et al., 2009; Sheeber, Davis, Leve, Hops, & Tildesley, 2007). Conversely, impaired parent-child dynamics have been shown to be related to the vulnerability, development, maintenance, and recurrence of depressive disorders in adolescence. As such, there is a general consensus among researchers and health care providers that considering parental factors is critical for understanding adolescent depression. This recommendation might have particular importance in the Arab culture, where the family, rather than the individual, is the core of the community (Ahmad & Dardas, 2016), and where youth tend to view family as a powerful anchor of their identity and their ability to navigate the future (Khoury & Lopez, 2011). Involving parents in adolescent depression treatment can help parents reinforce what adolescents are learning, and also help adolescents apply what they learn in their own lives. It also helps to support parents in promoting their children's positive mental health.

In an unpublished manuscript, Dardas, Curry, and Simmons (2016) reviewed all randomized clinical trials that included parents in the prevention and/or treatment of adolescent depression in order to examine the effectiveness of parental involvement in reducing depressive symptoms. Authors concluded that involving parents in adolescent

depression interventions can significantly promote outcomes of the intervention.

Authors also recommended that parents should not be viewed as separate factors that need separate interventions. Such an approach was not effective in some studies (Lewinsohn's, Clarke, Hops, and Andrews, 1990; Clarke's, Rohde, Lewinsohn, Hops, & Seeley, 1999) due to the lack of joint sessions in the study protocol, which did not allow for parents and adolescents to interact and practice their newly learned skills.

Conversely, studies that facilitated adolescent-parents interactions during the treatment and included parents as an integral part of the intervention (Asarnow, Scott, & Mintz, 2002; Spirito et al., 2015) found the joint sessions more effective in improving adolescents' depressive symptoms and enhancing positive parenting.

In the Arab region, the screening, treatment, and prevention practices for depression and other mental illnesses lag far behind recommended parameters. Psychiatric services are mostly confined to a few mental hospitals, psychiatric units in general hospitals, and outpatient psychiatric clinics. These entities often provide psychopharmacological treatments, whereas psychotherapy services are critically underdeveloped and almost entirely absent for families of relatives with mental illness (Okasha, Karam, & Okasha, 2012). There is also a significant dearth of mental health staff, including psychiatrists, psychologists, and psychiatric nurses (WHO, 2011). In addition, although the majority of Arab countries have agreed in principle to integrate mental health services into the primary health care system, implementation has been

substantially limited (Okasha et al., 2012). This critical mental health situation calls for urgent governmental efforts to create and promote mental health services that can meet the large and growing mental health needs of the Arab population. It will then be the task of future research to clarify whether existing practice parameters and models, which are primarily Western, can be translated directly to the Arab population, or whether the sociocultural context might influence the experience and response to treatment, requiring adapted approaches.

7.3.2.5 Anti-stigma interventions

Since knowledge, skills, and attitudes attained during adolescence are critical in establishing lifelong self-management and health-related behaviors (Holmbeck, 2002), and since negative attitudes tend to calcify with time and become more resistant to change, anti-stigma efforts need to start as early as possible. This goes in line with the World Psychiatric Association's philosophy on the importance of educating children about mental illness in order to prevent the formation of negative attitudes and to foster more accurate understanding and greater acceptance of people with mental illness (Sartorius & Schulze, 2005). Schools are promising settings to achieve this goal.

Unfortunately, Arab researchers and educators agree that there is little discussion in Arab schools about the meaning of mental illness and how individuals need to respond to it (Dardas & Simmons, 2015; Okasha, Karam, & Okasha, 2012). The inclusion of these topics to the educational curricula can help a great deal in eliminating stereotypes and

false beliefs about depression, and can ultimately encourage depressive adolescents to seek help. We hope that by describing the prevalence of depression symptoms, depression stigma, and false depression beliefs among Jordanian school adolescents, we can bring attention to these critical issues for more systematic and policy-level efforts in schools.

Despite the significant influence schools can have on students' perception and management of mental illness (Welsh, Parke, Widaman, & O'Neil, 2001; Zins, Weissberg, Wang, & Walberg, 2004), there is a substantial lack of school-based mental health policies and resources in most Arab countries, including Jordan. With almost two million child (33% of total population) being enrolled in Jordanian schools (JMOE, 2014), targeting these settings can be promising for early detection and management of depression symptoms (Adelman & Taylor, 2006). Students are substantially more likely to seek help when school-based mental health services are available (Slade, 2002). Research also has revealed that promoting mental health services in schools can lead to significant reductions in special education and disciplinary referrals (Bruns, Walrath, Glass-Siegel, & Weist, 2004); enhance students' social and academic performance (Greenberg et al., 2003); and reduce emotional and behavioral problems, such as conduct disordered behavior, attention deficit/hyperactivity, and depression (Hussey & Guo, 2003). Indeed, schools-based programs were found to be more influential on the mental health of young people than any other community services (Frauenknecht, 2003). In

addition, performing systematic mental health assessment in schools can account for the stigma and fears factor as students are not required to seek help on their own. However, it is important to acknowledge that available school-based programs were mostly developed by and for Western populations. We still need to test the effectiveness of these interventions in Arab schools before translating them into practice.

Incorporating anti-stigma interventions into school curricula is critically important. Knowledge, skills, and attitudes attained during adolescence is critical in establishing lifelong self-management and health-related behaviors (Holmbeck, 2002). As such, school adolescents, especially early adolescents, can benefit from mental health education in schools as prevention. They can learn how to recognize signs of mental health problems in themselves and their peers. By having resources available within schools and by reducing stigmatization of mental illness, school adolescents may be more likely to seek help early for themselves and serve as sources of acceptance, support, and referral for peers who experience mental health problems. Adolescents can carry forward the knowledge and skills they learn in schools as a protective factor when transitioning into early adulthood (Holmbeck, 2002).

7.3.3 Nursing Implications

Nurses, who form the largest proportion of health personnel in all Arab countries (Shukri, 2005), are uniquely situated to help Arab depressed adolescents and their families restore, maintain, and/or promote their mental health and wellbeing. The mental health assessment of children and their families is considered a specialized nursing process that therapeutically recognizes adolescent's unique problems and responses within the context of their development (Townsend, 2011). It is the psychiatric nurse who is assumed to be called when issues related to child and family dynamics erupt (Boyd, 2011). Indeed, the scope of psychiatric mental health nursing practice that was defined by the American Psychiatric Mental Health Nurses Association (APNA, 2007) specified that psychiatric nurses have their special concerns with the promotion of optimal mental health and wellbeing and prevention of mental illness. Psychiatric nurses have their responsibility in "managing the interpersonal, psychological, and social circumstances that have an effect on the mental and emotional wellbeing of the individuals and their families" (APNA, 2007, P.22).

Arab nurses should play an active role in stigma reduction efforts, since their training emphasizes integrating the sociocultural context into the care, education, and outreach they provide. For example, Arab nurses working in general hospitals, psychiatric hospitals, outpatient clinics, and schools can organize mental health campaigns that dispel inaccurate presentations of people with mental illness. Arab

nurses also can invite religious leaders to highlight the Islamic teachings that encourage people to seek treatment and discourage the negative labeling and hurtful representations of others. Verses from the Holy Quran can be distributed to the public along with their meanings and implications in the mental health field. For example, one verse, from the English translated Quran, states the following:

“...Let not some men among you laugh at others, It may be that the (latter) are better than the (former), Nor let some women laugh at others, It may be that the (latter are better than the (former), Nor defame nor be sarcastic to each other, nor call each other by (offensive) nicknames,... And those who do not desist are (indeed) doing wrong.” Al-Hujuraat (11).

In this verse, people have been advised to refrain from all those activities which create hatred among them and which ignite the flames of disruption in the society. It tells that it might be considered harmless to have fun, to mock others or to call them names but, Allah calls it a sin for which one can only be forgiven if s/he did ‘*Taubah*’, sincere repentance. This sort of attitude applies to all interpersonal interactions including those with people experiencing mental illnesses. Stigmatizing beliefs, attitudes, and behaviors are all considered unacceptable in Islam and Arabs can be informed that doing so is considered a breach of their Islamic teachings. Another verse in the Holy Quran says:

“...If ye realise this not, ask of those who possess the Message” Al-Nahl (43).

This verse asks people who do not have answers in a certain topic to go and ask those who are specialist in that topic. As such, Arabs can be advised to ask specialists in mental health instead of relying on traditional nonscientific means of treatment.

7.3.3.1 School nurses

We strongly recommend Arab policy makers activate the role of school nurses, which is very limited in some Arab countries and totally absent in many others. Research evidence has shown that school nurses can play a significant role in promoting mental health and subsequent academic achievement among youth experiencing mental health problems (DeSocio, Stember, & Schrinisky, 2006; Puskar & Bernardo, 2007). With their academic preparation and experience, school nurses can help recognize mental health concerns, provide early interventions, and recommend appropriate referral and follow-up. As we mentioned previously, cognitive and physical symptoms of depression are often not articulated by Arabs as potential depressive symptoms, which can discourage seeking mental health support services. The presence of a school nurse can help students with somatic symptoms that have mental health implications to understand whether such symptoms are motivated by psychological problems or may be markers for underlying psychosocial stressors. This also leads us to highlight the importance of raising teachers' awareness about adolescent depression, encouraging them to have open discussions with students about this important issue, and referring those who show mental health concerns to available support services. This is of special

importance as depressed adolescents often show high levels of aggressive and violent behaviors, which can be mishandled by school personnel as disciplinary issues. School nurses can influence organizations, policies, laws, and power structures when their knowledge and experience are acknowledged and involved in policy development and enforcement. School nurses can also be active members in community-focused programs that aim to change community norms, attitudes, and practices that negatively impact adolescents' mental health (Melnyk et al., 2001).

7.3.3.2 Nursing education

Nurses, particularly psychiatric nurses, are generally aware of the significant effects that mental illness stigma exert on patients. However, Delaney (2012) reported that many of those nurses are not aware of how such a stigma extends into their own behaviors, fundamentally impacting the care they provide. Given that nurses represent the largest proportion of Arab health care providers, and that they are responsible for the majority of direct care for patients experiencing mental illness, they are a particularly important group to target with regards to their attitudes towards people with mental illness. However, since negative attitudes tend to calcify with time and become more resistant to change, the American Nurses Association (2011) has recommended that combating mental illness stigma among nurses should start earlier at schools through offering educational curricula that dispel negative stereotypes and foster positive attitudes towards people with mental illness. Promoting nursing students' preparation

and enhancing their competence is an essential step for therapeutic and effective care provision for patients with mental illness and their families (Ross & Goldner, 2009). Exposing nursing students to mental illness stigma-related issues through a variety of educational and clinical experiences can foster empathy and combat existing stereotypes and negative attitudes that those students may have. This education can also encourage nursing students to consider careers in mental health nursing. Research from the Arab literature reveals that mental health nursing is one of the least preferred career options for undergraduate Arab nursing students and that fostering positive attitudes toward mental illness during students' undergraduate years is one of the main efficient ways to recruit and retain mental health nurses.

7.3.4 International Perspective: Towards a Culturally Competent Practice

Religious, spiritual, and cultural beliefs are increasingly considered important factors for promoting patients' health and well-being (Ahmad & Dardas, 2015). The American Nurses Association (1991), the American Association of Colleges of Nursing (1997), and the American Academy of Nursing (2001) have all published statements promoting cultural competency and transcultural nursing. Nevertheless, providing mental health care to a culturally and racially diverse population is still considered a challenge for many health professionals (Bhui et al., 2007). To effectively combat the negative effects of stigma on mental health identification and treatment, there is the need for a patient-centered and culturally competent practice that incorporates

systematic and collaborative efforts from all sectors, including political and religious leaders and healthcare providers. Arabs have one of the world's highest rates of population growth and constitute a significant and increasing population in countries as the United States, Australia, Canada, France, and Britain. In order to provide culturally competent care for those patients, knowledge of Arab cultural beliefs, values and practices is necessary so that health care providers can avoid diagnostic errors, inappropriate management, and poor compliance. Many Arab patients who live in Western cultures are generally open to Western forms of treatment, yet they still prefer to be treated by someone who can understand their culture, especially when it comes to mental illnesses (Shah et al., 2008).

Consistent with Brach & Fraserirector's (2000) review on the role of cultural competency in reducing racial and ethnic health disparities, reduction of mental illness stigma requires cultural competency not only at the patient–clinician level but, indeed, health system wide. Interestingly, the WHO (2005) has published international standards to guide countries in producing and revising mental health policies and laws that can contribute towards better care and less stigmatization for people with mental illness. These standards covered advice on several mental health issues like access to care, confidentiality, consent, and involuntary treatment. Mental health nurses are obligated to foster awareness about these international standards and provide culturally competent care that can tackle stigma, discrimination, and inequality.

To this end, this study provides a solid foundation from which to conduct future research to establish the best clinical approaches for screening, treatment, and prevention of depression among Arab adolescents. We hope that by describing the prevalence of depression symptoms and its associated stigma among the young population in Jordan, we can bring attention to these critical issues for more systematic and policy-level efforts.

Appendix A. Measures

Part I

Sociodemographic questionnaire

INSTRUCTIONS: Please select the answer that best represents you:

1. Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
2. Age in years	<input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17
3. What is your employment status?	<input type="checkbox"/> Employed <input type="checkbox"/> Unemployed If you are working, how many hours you work on average per day?
4. What is your current GPA?	<input type="checkbox"/> (90-100) <input type="checkbox"/> (80-89) <input type="checkbox"/> (70-79) <input type="checkbox"/> ≤ 69
5. What is the highest level of education for your father?	<input type="checkbox"/> Illiterate <input type="checkbox"/> ≤ 11th grade <input type="checkbox"/> Tawjihi <input type="checkbox"/> Diploma <input type="checkbox"/> BSN or higher
6. What is the highest level of education for your mother?	<input type="checkbox"/> Illiterate <input type="checkbox"/> ≤ 11th grade <input type="checkbox"/> Tawjihi <input type="checkbox"/> Diploma <input type="checkbox"/> BSN or higher
7. What is your family average monthly income (JD)?	<input type="checkbox"/> ≤ 500 <input type="checkbox"/> 501-1000 <input type="checkbox"/> 1001-1500 <input type="checkbox"/> > 1500
8. Do you have health insurance	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. Do you have any physical illness or health problem?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please specify
10. Do you have any mental health problem?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please specify
11. Do you have any learning disability?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please specify
12. Have you ever received any psychiatric diagnosis?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please select from the following: <input type="checkbox"/> Depression <input type="checkbox"/> Conduct disorder <input type="checkbox"/> Bipolar <input type="checkbox"/> Anxiety disorder <input type="checkbox"/> Schizophrenia <input type="checkbox"/> Other (please specify):

<p>13. Have any of your parents had any mental health problem?</p>	<p><input type="checkbox"/> Yes (Father, Mother, both) <input type="checkbox"/> No</p> <p>If yes, please select from the following: <input type="checkbox"/> Depression <input type="checkbox"/> Conduct disorder <input type="checkbox"/> Bipolar <input type="checkbox"/> Anxiety disorder <input type="checkbox"/> Schizophrenia <input type="checkbox"/> Other (please specify):</p>
<p>14. Have any of your relatives had any mental health problem?</p>	<p><input type="checkbox"/> Yes (relationship) <input type="checkbox"/> No</p> <p>If yes, please select from the following: <input type="checkbox"/> Depression <input type="checkbox"/> Conduct disorder <input type="checkbox"/> Bipolar <input type="checkbox"/> Anxiety disorder <input type="checkbox"/> Schizophrenia <input type="checkbox"/> Other (please specify):</p>
<p>15. Have any of your close friends had any mental health problem?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, please select from the following: <input type="checkbox"/> Depression <input type="checkbox"/> Conduct disorder <input type="checkbox"/> Bipolar <input type="checkbox"/> Anxiety disorder <input type="checkbox"/> Schizophrenia <input type="checkbox"/> Other (please specify):</p>
<p>16. Have you ever sought professional psychological help?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, identify the type of help from the following: <input type="checkbox"/> Psychiatrist <input type="checkbox"/> Psychologist <input type="checkbox"/> Social worker <input type="checkbox"/> General practitioner <input type="checkbox"/> Sheikh <input type="checkbox"/> Family or friend <input type="checkbox"/> Other (please specify):</p>

Part II

Beck Depression Inventory: Second Edition® (BDI)

INSTRUCTIONS: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the **past week**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number that applies within that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

<p>1. Sadness</p> <p>0 I do not feel sad. 1 I feel sad much of the time. 2 I am sad all of the time. 3 I am so sad or unhappy that I can't stand it.</p> <p>2. Pessimism</p> <p>0 I am not discouraged about my future. 1 I feel more discouraged about my future than I used to be. 2 I do not expect things to work out for me. 3 I feel my future is hopeless and will only get worse.</p> <p>3. Past Failure</p> <p>0 I do not feel like a failure. 1 I have failed more than I should have. 2 As I look back, I see a lot of failures. 3 I feel I am a total failure as a person.</p> <p>4. Loss of Pleasure</p> <p>0 I get as much pleasure as I ever did from the things I enjoy. 1 I don't enjoy things as much as I used to. 2 I get very little pleasure from the things I used to enjoy. 3 I can't get any pleasure from the things I used to enjoy.</p> <p>9. Suicidal Thoughts or Wishes</p> <p>0 I don't have any thoughts of killing myself. 1 I have thoughts of killing myself, but I would not carry them out. 2 I would like to kill myself. 3 I would kill myself if I had the chance.</p> <p>10. Crying</p> <p>0 I don't cry anymore than I used to. 1 I cry more than I used to. 2 I cry over every little thing. 3 I feel like crying, but I can't.</p> <p>11. Agitation</p> <p>0 I am no more restless or wound up than usual. 1 I feel more restless or wound up than usual. 2 I am so restless or agitated that it's hard to stay still. 3 I am so restless or agitated that I have to keep moving or doing something.</p>	<p>5. Guilty Feelings</p> <p>0 I don't feel particularly guilty. 1 I feel guilty over many things I have done or should have done. 2 I feel quite guilty most of the time. 3 I feel guilty all of the time.</p> <p>6. Punishment Feelings</p> <p>0 I don't feel I am being punished. 1 I feel I may be punished. 2 I expect to be punished. 3 I feel I am being punished.</p> <p>7. Self-Dislike</p> <p>0 I feel the same about myself ever. 1 I have lost confidence in myself. 2 I am disappointed in myself. 3 I dislike myself.</p> <p>8. Self-Criticalness</p> <p>0 I don't criticize or blame myself more than usual. 1 I am more critical of myself than I used to be. 2 I criticize myself for all of my faults. 3 I blame myself for everything bad that happens.</p> <p>16. Changes in Sleeping Pattern</p> <p>0 I have not experienced any change in my sleeping pattern.</p> <p>1a I sleep somewhat more than usual. 1b I sleep somewhat less than usual.</p> <p>2a I sleep a lot more than usual. 2b I sleep a lot less than usual.</p> <p>3a I sleep most of the day. 3b I wake up 1-2 hours early and can't get back to sleep.</p> <p>17. Irritability</p> <p>0 I am no more irritable than usual. 1 I am more irritable than usual. 2 I am much more irritable than usual. 3 I am irritable all the time.</p>
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<p>12. Loss of Interest</p> <p>0 I have not lost interest in other people or activities.</p> <p>1 I am less interested in other people or things than before.</p> <p>2 I have lost most of my interest in other people or things.</p> <p>3 It's hard to get interested in anything.</p> <p>13. Indecisiveness</p> <p>0 I make decisions about as well ever.</p> <p>1 I find it more difficult to make decisions than usual.</p> <p>2 I have much greater difficulty in making decisions than I used to.</p> <p>3 I have trouble making any decisions.</p> <p>14. Worthlessness</p> <p>0 I do not feel I am worthless.</p> <p>1 I don't consider myself as worthwhile and useful as I used to.</p> <p>2 I feel more worthless as compared to other people.</p> <p>3 I feel utterly worthless.</p> <p>15. Loss of Energy</p> <p>0 I have as much energy as ever.</p> <p>1 I have less energy than I used to.</p> <p>2 I don't have enough energy to do very much.</p> <p>3 I don't have enough energy to do anything.</p>	<p>18. Changes in Appetite</p> <p>0 I have not experienced any change in my appetite.</p> <p>1a My appetite is somewhat less than usual.</p> <p>1b My appetite is somewhat greater than usual.</p> <p>2a My appetite is much less than usual.</p> <p>2b My appetite is much greater than usual.</p> <p>3a I have no appetite at all.</p> <p>3b I crave food all the time.</p> <p>19. Concentration Difficulty</p> <p>0 I can concentrate as well as ever.</p> <p>1 I can't concentrate as well as usual.</p> <p>2 It's hard to keep my mind on anything for very long.</p> <p>3 I find I can't concentrate on anything.</p> <p>20. Tiredness or Fatigue</p> <p>0 I am no more tired or fatigued than usual.</p> <p>1 I get more tired or fatigued more easily than usual.</p> <p>2 I am too tired or fatigued to do a lot of the things I used to do.</p> <p>3 I am too tired or fatigued to do most of the things I used to do.</p> <p>21. Loss of Interest in Sex</p> <p>0 I have not noticed any recent change in my interest in sex.</p> <p>1 I am less interested in sex than I used to be.</p> <p>2 I am much less interested in sex now.</p> <p>3 I have lost interest in sex completely.</p>
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Adapted from: Beck, A.T., Steer, R.A., & Brown, G.K. (1996). Manual for Beck Depression Inventory-II. San Antonio, TX: Psychological Corporation.



Thank you for completing the Beck Depression Inventory.

Was your answer on question 9 more than zero?

Was your total score on the 21 questions more than 19?

If yes, please contact the researchers, the social worker at your school, a teacher at your school, or a trusted adult (parent, sibling, relative, or friend), and discuss your thoughts and feelings with them.

We also invite you to attend the voluntary information session that will be conducted at your school on (DAY, TIME). Latefa Dardas (the student PI), your school's social worker, a principal and/or teacher will be available and will provide information on depression, including its symptoms and available options for help.

Please do not hesitate to talk to us. We will be there to help you!

Part III

Depression Stigma Scale (DSS)

INSTRUCTIONS: Please indicate how strongly you agree/disagree with the following statements.

	Strongly Disagree	Disagree	Partly Agree	Agree	Strongly Agree
1. People with depression could snap out of it if they wanted.					
2. Depression is a sign of personal weakness.					
3. Depression is not a real medical illness.					
4. People with depression are dangerous.					
5. It is best to avoid people with depression so that you don't become depressed yourself.					
6. People with depression are unpredictable.					
7. If I had a problem such as depression I would not tell anyone.					
8. I would not employ someone if I knew they had been depressed.					
9. I would not vote for a politician if knew they had been depressed.					
10. Most people believe that people with depression could snap out of it if they wanted.					
11. Most people believe that depression is a sign of personal weakness.					
12. Most people believe depression is not a real medical illness.					
13. Most people believe that people with depression are dangerous.					
14. Most people believe it is best to avoid people with depression so that you don't become depressed yourself.					
15. Most people believe that people with depression are unpredictable.					
16. If they had depression, most people would not tell anyone.					
17. Most people would not employ someone they knew had been depressed.					
18. Most people would not vote for a politician they knew had been depressed.					

Adapted from: Griffiths, K.M., Nakane, Y., Christensen, H., Yoshioka, K., Jorm A.F., & Nakane, H. (2006). Stigma in response to mental disorders: a comparison of Australia and Japan. BMC Psychiatry, 6, 21.

Part IV

Depression Etiological Beliefs Scale

INSTRUCTIONS: Please fill in the box for the answer which best reflects your opinion.

	Not at all likely	Unlikely	Neutral	Likely	Very likely
1. Depression is a result of one's weak will.					
2. Depression is a result of lack of personal strength.					
3. Depression is a result of a chemical imbalance.					
4. Depression is a result of the way a person was raised.					
5. Depression is a result of stressful events in one's life.					
6. Depression is a result of social factors, such as negative peer influence.					
7. Depression is a result of genetic or inherited problems.					
8. Depression is a result of spiritual forces.					
9. Depression is a result of punishment for wrong doings.					
10. Depression is a result of inadequate coping skills.					
11. Depression is a result of inadequate problem-solving skills.					
12. Depression is a result of other (please write in): _____.					

Adapted from Samouilhan, T. & Seabi, J. (2010). University students' beliefs about the causes and treatments of mental illness. South African Journal of Psychology, 40, 74 – 89.

Part V

Depression Treatment seeking Scale

INSTRUCTIONS: Please fill in the box for the answer which best reflects your opinion.

If I had depression:	Not at all likely	Unlikely	Neutral	Likely	Very likely
1. I would seek help from a counselor.					
2. I would seek help from a psychiatrist.					
3. I would seek help from a general practitioner/family doctor.					
4. I would seek help from a sheikh/religious leader.					
5. I would seek help from a family member.					
6. I would seek help from other (please write in):_____.					
7. I would be willing to take medication for my depression.					
8. I would be willing to seek therapy.					
9. I would NOT seek treatment from a professional.					

Adapted from Barney, L. J., Griffiths, K. M., Jorm, A. F., & Christensen, H. (2006). Stigma about depression and its impact on help seeking intentions. Australian and New Zealand Journal of Psychiatry, 40, 51 – 54.

Appendix B. Translated Measures

الجزء الأول استبانة البيانات الشخصية والاجتماعية

التعليمات: يُرجى اختيار الإجابة المناسبة مما يلي:

1.	الجنس	<input type="checkbox"/> ذكر <input type="checkbox"/> أنثى
2.	كم يبلغ عمرك بالسنوات؟	<input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17
3.	كم بلغ معدلك تقريباً في السنة الدراسية الماضية؟	<input type="checkbox"/> (100-90) <input type="checkbox"/> (89-80) <input type="checkbox"/> (79-70) <input type="checkbox"/> (أقل من 69)
4.	هل تعمل حالياً؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كنت تعمل، كم عدد الساعات التي تعملها في المتوسط في اليوم الواحد؟.....
5.	ما هو أعلى مستوى تعليمي حصل عليه والدك؟	<input type="checkbox"/> غير متعلم <input type="checkbox"/> أول ثانوي فما دون <input type="checkbox"/> توجيهي <input type="checkbox"/> دبلوم <input type="checkbox"/> بكالوريوس أو أعلى
6.	ما هو أعلى مستوى تعليمي حصلت عليه والدتك؟	<input type="checkbox"/> غير متعلم <input type="checkbox"/> أول ثانوي فما دون <input type="checkbox"/> توجيهي <input type="checkbox"/> دبلوم <input type="checkbox"/> بكالوريوس أو أعلى
7.	ما هو متوسط الدخل الشهري لأسرتك؟	<input type="checkbox"/> أقل من 150 دينار <input type="checkbox"/> 300-150 دينار <input type="checkbox"/> 500-301 دينار <input type="checkbox"/> 1000-501 دينار <input type="checkbox"/> 1500-1001 دينار
8.	هل أنت مؤمن صحياً؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا
9.	هل تعاني من أي مرض أو مشكلة صحية؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى تحديد المشكلة أو المرض الصحي.....
10.	هل تعاني من أي مشاكل نفسية؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى تحديد المشكلة النفسية.....
11.	هل تعاني من أي صعوبات في التعلم؟	<input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى تحديد نوع صعوبة التعلم.....

<p> <input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى اختيار نوع التشخيص مما يلي: <input type="checkbox"/> الاكتئاب <input type="checkbox"/> الاكتئاب ثنائي القطب <input type="checkbox"/> الفصام <input type="checkbox"/> اضطراب القلق <input type="checkbox"/> غير ذلك (يرجى التحديد): </p>	<p>12. هل سبق وأن تم تشخيصك بمرض نفسي؟</p>	
<p> <input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى اختيار نوع التشخيص مما يلي: الأب: <input type="checkbox"/> الاكتئاب <input type="checkbox"/> الاكتئاب ثنائي القطب <input type="checkbox"/> الفصام <input type="checkbox"/> اضطراب القلق <input type="checkbox"/> غير ذلك (يرجى التحديد): الأم: <input type="checkbox"/> الاكتئاب <input type="checkbox"/> الاكتئاب ثنائي القطب <input type="checkbox"/> الفصام <input type="checkbox"/> اضطراب القلق <input type="checkbox"/> غير ذلك (يرجى التحديد): </p>	<p>13. هل لدى أي من والديك مرض نفسي؟</p>	
<p> <input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى تحديد صلة القرابة، واختيار نوع التشخيص مما يلي: <input type="checkbox"/> الاكتئاب <input type="checkbox"/> الاكتئاب ثنائي القطب <input type="checkbox"/> الفصام <input type="checkbox"/> اضطراب القلق <input type="checkbox"/> غير ذلك (يرجى التحديد): </p>	<p>14. هل لدى أي من أقاربك مرض نفسي؟</p>	
<p> <input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى اختيار نوع التشخيص مما يلي: <input type="checkbox"/> الاكتئاب <input type="checkbox"/> الاكتئاب ثنائي القطب <input type="checkbox"/> الفصام <input type="checkbox"/> اضطراب القلق <input type="checkbox"/> غير ذلك (يرجى التحديد): </p>	<p>15. هل لدى أي من أصدقائك مرض نفسي؟</p>	
<p> <input type="checkbox"/> نعم <input type="checkbox"/> لا إذا كانت الإجابة نعم، يرجى تحديد المصدر الذي طلبت منه المساعدة النفسية: <input type="checkbox"/> مرشد نفسي <input type="checkbox"/> طبيب نفسي <input type="checkbox"/> طبيب عام <input type="checkbox"/> شيخ أو رجل دين <input type="checkbox"/> أحد أفراد الأسرة <input type="checkbox"/> غير ذلك (يرجى التحديد): </p>	<p>16. هل سبق لك وأن طلبت مساعدة نفسية؟</p>	

الجزء الثاني

مقياس بيك للاكتئاب

التعليمات: يرجى وضع دائرة حول رقم العبارة التي تُصِفُ بطريقة أفضل مشاعرك في الأسبوعين الأخيرين. إذا تبين لك أن أكثر من عبارة في مجموعة واحدة تنطبق عليك بصورة متساوية، ضع دائرة حول أعلى رقم في تلك المجموعة وهو الرقم 4.

1	الحزن	1- لا أشعر بالحزن 2- أشعر بالحزن معظم الوقت 3- أشعر بالحزن طوال الوقت 4- أشعر بالحزن لدرجة لا أستطيع تحملها
2	التشاؤم	1- لم تضعف همتي فيما يتعلق بمستقبلي 2- أشعر بضعف همتي فيما يتعلق بمستقبلي بطريقه أكثر مما اعتدت 3- أتوقع ألا تسير الأمور بشكل جيد بالنسبة لي 4- أشعر بأنه لا أمل لي في المستقبل وأنه سوف تزداد الأمور سوءاً
3	الفشل السابق	1- لا أشعر بأني شخص فاشل 2- لقد فشلت أكثر مما ينبغي 3- كلما نظرت إلى حياتي السابقة أرى الكثير من الفشل 4- أشعر بأني شخص فاشل تماماً
4	فقدان الاستمتاع بالحياة	1- أستمتع بالحياة بنفس قدر استمتاعي بها من قبل 2- لا أستمتع بالحياة بنفس القدر الذي اعتدت عليه 3- أحصل على قدر قليل جداً من الاستمتاع مقارنةً بما اعتدت عليه من قبل 4- لا أستطيع الحصول على أي استمتاع بالحياة كما اعتدت من قبل
5	الشعور بالذنب (تأنيب الضمير)	1- لا أشعر بالذنب 2- أشعر بالذنب عن العديد من الأشياء التي قمت بها، أو أشياء كان يجب أن أقوم بها ولم أقم بها 3- أشعر بالذنب في معظم الأوقات 4- أشعر بالذنب في كل الأوقات
6	الشعور بالتعرض للعقاب	1- لا أشعر بأني أتعرض للعقاب 2- أشعر بأني يمكن أن أتعرض للعقاب 3- أتوقع أنني سوف أتعرض للعقاب 4- أشعر بأني أتعرض للعقاب

7	عدم حب الذات	1- شعوري نحو نفسي هو نفسه كما كان سابقاً 2- فقدت الثقة في نفسي 3- أصبت بخيبة أمل في نفسي 4- لا أحب نفسي
8	نقد الذات ولومها	1- لا أنتقد نفسي ولا ألومها أكثر من المعتاد 2- أنتقد وألوم نفسي أكثر مما اعتدت 3- أنتقد وألوم نفسي على كل أخطائي 4- أنتقد وألوم نفسي على كل ما يحدث من أشياء سيئة
9	الرغبة في إيذاء النفس	1- ليس لدي أي أفكار في إيذاء نفسي 2- لدي أفكار في إيذاء نفسي ، ولكن لا أريد تنفيذها 3- أريد أن أؤذي نفسي 4- قد أؤذي نفسي لو سنحت لي الفرصة
10	البكاء	1- لا أبكي أكثر مما اعتدت من قبل 2- أبكي أكثر مما اعتدت 3- أبكي على كل شيء صغير 4- أشعر أنني أريد البكاء، ولكنني لا أستطيع
11	الهيجان (عدم الاستقرار)	1- لا أشعر بالهيجان أو عدم الاستقرار أكثر مما كنت سابقاً 2- أشعر بالهيجان أو عدم الاستقرار أكثر مما كنت سابقاً 3- يحدتّ طبعي وتسهل إثارتي جزءاً كبيراً من الوقت 4- لم أعد أغضب أو أحتد الآن ولم تعد تستفزني كل الأشياء التي كانت تثيرني من قبل
12	فقدان الاهتمام	1- لم أفقد الاهتمام بالآخرين أو بالأنشطة العادية 2- أنا أقل اهتماماً بالآخرين أو بالأشياء عما كنت من قبل 3- فقدت معظم اهتمامي بالآخرين أو بالأشياء 4- من الصعب علي أن أهتم بأي شيء
13	التردد في اتخاذ القرارات	1- أتخذ القرارات في مختلف الأمور بنفس الكفاءة التي اعتدت عليها طول عمري 2- أجد صعوبة في اتخاذ القرارات 3- أجد صعوبة كبيرة جداً في اتخاذ القرارات 4- لا يمكنني اتخاذ أي قرار على الإطلاق
14	انعدام القيمة	1- لا أشعر أنني عديم القيمة 2- لا أعتبر نفسي ذا قيمة وفائدة كما كنت من قبل 3- أشعر أنني عديم القيمة بالمقارنة مع الآخرين 4- أشعر أنني عديم القيمة تماماً

15	فقدان الطاقة على العمل	<p>1- لدي نفس القدر من الطاقة على العمل كما اعتدت 2- لدي قدر من الطاقة أقل مما اعتدت 3- ليس لدي طاقة كافية لعمل الكثير من الأشياء 4- ليس لدي طاقة كافية لعمل أي شيء</p>
16	تغيرات في نظام النوم	<p>1- لم يحدث لي أن تغير نظام نومي 2- أنام أكثر مما تعودت إلى حد ما 2- أنام أقل مما تعودت إلى حد ما 3- أنام أكثر مما تعودت بشكل كبير 3- أنام أقل مما تعودت بشكل كبير 4- أنام معظم الوقت 4- أستيقظ مبكراً ساعة أو ساعتين أو أكثر، ولا أستطيع أن أعود إلى النوم مره أخرى</p>
17	القابلية للغضب أو الانزعاج	<p>1- لا أشعر بالغضب أكثر من المعتاد 2- أغضب أكثر مما اعتدت 3- أغضب أكثر بكثير مما اعتدت 4- أكون في حالة غضب طوال الوقت</p>
18	تغيرات في الشهية للطعام	<p>1- لم يحدث أي تغير في شهيتي 2- شهيتي للأكل أقل مما اعتدت إلى حد ما 2- شهيتي للأكل أكبر مما اعتدت إلى حد ما 3- شهيتي للأكل أقل كثيراً مما اعتدت إلى حد ما 3- شهيتي للأكل أكبر كثيراً مما اعتدت إلى حد ما 4- ليس لدي شهية للطعام على الإطلاق 4- لدي رغبة قوية في الطعام طوال الوقت</p>
19	صعوبة التركيز	<p>1- أستطيع التركيز بكفاءة كما اعتدت 2- لا أستطيع التركيز بنفس الكفاءة كما اعتدت 3- من الصعب علي أن أركز عقلي على أي شيء لمدة طويلة 4- أجد نفسي غير قادر على التركيز في أي شيء</p>
20	الإرهاق والإجهاد	<p>1- لست أكثر إرهاقاً أو إجهاداً مما اعتدت 2- أصاب بالإرهاق أو الإجهاد عند عمل الكثير من الأشياء التي اعتدت عليها 3- يُعيقني الإرهاق أو الإجهاد عند عمل الكثير من الأشياء التي اعتدت عليها 4- أنا مرهق ومجهد جداً بحيث أجد صعوبة في عمل معظم الأشياء التي اعتدت عليها</p>
21	الاهتمام بالجنس الآخر	<p>1- لم يتأثر مدى اهتمامي بالجنس الآخر في الفترة الماضية 2- أنا أقل اهتماماً بالجنس الآخر مقارنة بما كنت عليه في الفترة الماضية 3- قلَّ اهتمامي بشكل كبير جداً بالجنس الآخر 4- لم أعد أهتم نهائياً بالجنس الآخر</p>



شكرا لاستكمالك مقياس بيك للاكتئاب!

هل كانت إجابتك عن السؤال 9 بالخيار رقم 2، 3، أو 4؟
هل كان إجمالي مجموع إجابتك عن الأسئلة أكثر من 19؟

إذا كانت الإجابة بنعم عن إحدى السؤالين أو كلاهما، نرجو منك الاتصال بالباحثين، أو بالأخصائي الاجتماعي أو أحد المعلمين في مدرستك، أو بأحد الكبار الموثوق بهم (كالوالدين، الأخوة، الأقرباء، أو الأصدقاء)، ومناقشة أفكارك ومشاعرك معهم.

ندعوك أيضاً لحضور الجلسة التثقيفية التي سيتم عقدها في مدرستك (سيتم الاعلان عن الوقت لاحقاً عن طريق إدارة المدرسة). ستتواجد الباحثة لطيفة دريس وممثلين عن مدرستك من أجل تقديم معلومات حول الاكتئاب، وتعريفه، وأعراضه، وكيفية طلب المساعدة في حال وجود أي من الأعراض الاكتئابية لديك.

من فضلك لا تتردد في التحدث إلينا. سنكون متواجدين لمساعدتك!

الجزء الثالث

التوجهات الفردية نحو الاكتئاب

التعليمات: يُرجى وضع دائرة حول الرقم الذي يمثل مدى موافقتك أو عدم موافقتك على العبارات التالية:

ملاحظة: العبارات من 1-9 تتعلق بوجهة نظرك الشخصية حول الاكتئاب، والعبارات من 10-18 تتعلق برأيك حول وجهة نظر الآخرين في الاكتئاب.

أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة	
5	4	3	2	1	1. الأشخاص الذين يعانون من الاكتئاب يمكنهم الخروج منه إذا أرادوا ذلك
5	4	3	2	1	2. الاكتئاب هو مؤشر على ضعف الشخصية
5	4	3	2	1	3. الاكتئاب ليس مرضاً طبياً حقيقياً
5	4	3	2	1	4. الأشخاص الذين يعانون من الاكتئاب خطيرون
5	4	3	2	1	5. من الأفضل أن أتجنب الأشخاص المصابين بالاكتئاب حتى لا يصيبني الاكتئاب
5	4	3	2	1	6. الأشخاص الذين يعانون من الاكتئاب لا يمكن التنبؤ بتصرفاتهم
5	4	3	2	1	7. إذا كان لدي مشكلة مثل الاكتئاب، لن أخبر أحداً بذلك
5	4	3	2	1	8. لن أقوم بتوظيف شخص ما إذا عرفت أنه يعاني من الاكتئاب
5	4	3	2	1	9. لن أصوت في الانتخابات لشخص ما إذا عرفت أنه يعاني من الاكتئاب
5	4	3	2	1	10. معظم الناس يعتقدون أن الأشخاص الذين يعانون من الاكتئاب يمكنهم الخروج منه إذا أرادوا ذلك
5	4	3	2	1	11. معظم الناس يعتقدون أن الاكتئاب هو مؤشر على ضعف الشخصية
5	4	3	2	1	12. معظم الناس يعتقدون أن الاكتئاب ليس مرضاً طبياً حقيقياً
5	4	3	2	1	13. معظم الناس يعتقدون أن الأشخاص الذين يعانون من الاكتئاب خطيرون
5	4	3	2	1	14. معظم الناس يعتقدون أنه من الأفضل تجنب الأشخاص المصابين بالاكتئاب حتى لا يصيبهم الاكتئاب
5	4	3	2	1	15. معظم الناس يعتقدون أن الأشخاص الذين يعانون من الاكتئاب لا يمكن التنبؤ بتصرفاتهم
5	4	3	2	1	16. معظم الناس لن يخبروا أحداً إذا كان لديهم مشكلة مثل الاكتئاب
5	4	3	2	1	17. معظم الناس لن يقوموا بتوظيف شخص ما إذا عرفوا أنه يعاني من الاكتئاب
5	4	3	2	1	18. معظم الناس لن يقوموا بالتصويت في الانتخابات لشخص ما إذا عرفوا أنه يعاني من الاكتئاب

الجزء الرابع

المعتقدات المتعلقة بأسباب الاكتئاب

التعليمات: يُرجى وضع دائرة حول الرقم الذي يمثل مدى موافقتك أو عدم موافقتك على العبارات التالية:

محتمل جداً	محتمل	محايد	غير محتمل	غير محتمل على الاطلاق	
5	4	3	2	1	1. الاكتئاب هو نتيجة لضعف الإرادة
5	4	3	2	1	2. الاكتئاب هو نتيجة لعدم وجود قوة في الشخصية
5	4	3	2	1	3. الاكتئاب هو نتيجة لخلل التوازن الكيميائي في الجسم
5	4	3	2	1	4. الاكتئاب هو نتيجة للأسلوب الذي يتم به تربية الشخص
5	4	3	2	1	5. الاكتئاب هو نتيجة للتوترات النفسية التي تحدث في الحياة
5	4	3	2	1	6. الاكتئاب هو نتيجة لعوامل اجتماعية، مثل التأثير السلبي للعلاقات الاجتماعية
5	4	3	2	1	7. الاكتئاب هو نتيجة لمشاكل وراثية أو خلل في الجينات
5	4	3	2	1	8. الاكتئاب هو نتيجة لعوامل روحانية
5	4	3	2	1	9. الاكتئاب هو عقوبة للأفعال الخاطئة
5	4	3	2	1	10. الاكتئاب هو نتيجة لعدم القدرة على التأقلم مع الأحداث المحيطة
5	4	3	2	1	11. الاكتئاب هو نتيجة لاستخدام طرق غير فعالة في حل المشكلات
5	4	3	2	1	12. الاكتئاب هو نتيجة لعوامل أخرى (يرجى التحديد) (.....)

الجزء الخامس

التوجهات نحو طلب العلاج للاكتئاب

التعليمات: يُرجى وضع دائرة حول الرقم الذي يمثل مدى موافقتك أو عدم موافقتك على العبارات التالية:

محتمل جداً	محتمل	محايد	غير محتمل	غير محتمل على الإطلاق	إذا أُصِبت بالاكتئاب فإنني:
5	4	3	2	1	1. سأطلب المساعدة من مرشد نفسي
5	4	3	2	1	2. سأطلب المساعدة من طبيب نفسي
5	4	3	2	1	3. سأطلب المساعدة من طبيب عام
5	4	3	2	1	4. سأطلب المساعدة من شيخ أو رجل دين
5	4	3	2	1	5. سأطلب المساعدة من أحد أفراد الأسرة
5	4	3	2	1	6. سأطلب المساعدة من مصادر أخرى (يرجى التحديد
5	4	3	2	1	7. سأكون على استعداد لتناول الدواء لعلاج الاكتئاب
5	4	3	2	1	8. سأكون على استعداد لطلب العلاج النفسي
5	4	3	2	1	9. لن أطلب علاجاً نفسياً



شكراً جزيلاً لك...

Appendix C. The Random Sampling SAS Procedure

```
Title1 'This is an example of the random sampling procedure. Additional
programs were conducted for the other 6 provinces [Total=12provinces]';
Title1 'Province 1__North_Irbid_females only';
*total number of schools = 129;
data province;
input id;
datalines;
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117
118 119 120 121 122 123 124 125 126 127 128 129
;
run;
data provincel;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=12345
out=provincel;
proc print data=provincel noobs;
run;

Title1 'Province 11__North_Irbid_Males only';
*total number of schools = 268;
data province;
input id;
datalines;
130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147
148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165
166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183
184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201
202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219
220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237
238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255
256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273
274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291
292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309
310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327
328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345
346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363
364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381
382 383 384 385 386 387 388 389 390 391 392 393 394 395 396
;
run;
data provincel1;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=12245
out=provincel1;
proc print data=provincel1 noobs;
run;
```

```

Title1 'Province 2_North_Mafraq_females only';
*total number of schools = 31;
data province;
input id;
datalines;
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31
;
run;
data province2;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=23456
out=province2;
proc print data=province2 noobs;
run;

Title1 'Province 22_North_Mafraq_males only';
*total number of schools = 171;
data province;
input id;
datalines;
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55
56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79
80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102
103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138
139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174
175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192
193 194 195 196 197 198 199 200 201
;
run;
data province22;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=23356
out=province22;
proc print data=province22 noobs;
run;

Title1 'Province 3_Central_Amman_females only';
*total number of schools = 92;
data province;
input id;
datalines;
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92
;
run;
data province3;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=46668
out=province3;
proc print data=province3 noobs;
run;

```

```

Title1 'Province 33_Central_Amman_males only';
*total number of schools = 164;
data province;
input id;
datalines;
93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129
130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147
148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165
166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183
184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201
202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219
220 221 222 223 224 225 226
;
run;
data province33;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=46666
out=province33;
proc print data=province33 noobs;
run;

Title1 'Province 4_Central_Zarqa_females only';
*total number of schools = 95;
data province;
input id;
datalines;
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
;
run;
data province4;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=41333
out=province4;
proc print data=province4 noobs;
run;

Title1 'Province 44_Central_Zarqa_males only';
*total number of schools = 155;
data province;
input id;
datalines;
96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114
115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132
133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150
151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168
169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186
187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204
205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222
223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
241 242 243 244 245 246 247 248 249
;

```

```

run;
data province44;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=41113
out=province44;
proc print data=province44 noobs;
run;

Title1 'Province 5_South_Karak_females only';
*total number of schools = 32;
data province;
input id;
datalines;
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31 32
;
run;
data province5;
proc surveyselect data=province method=srs rep=1 sampsize=5 seed=51234
out=province5;
proc print data=province5 noobs;
run;

Title1 'Province 55_South_Karak_males only';
*total number of schools = 95;
data province;
input id;
datalines;
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56
57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102
103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
121 122 123 124 125 126
;
run;
data province55;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=51224
out=province55;
proc print data=province55 noobs;
run;

Title1 'Province 6_South_Maan_females only';
*total number of schools = 16;
data province;
input id;
datalines;
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
;
run;
data province6;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=61234
out=province6;
proc print data=province6 noobs;
run;

```

```

Title1 'Province 66_South_Maan_males only';
*total number of schools = 66;
data province;
input id;
datalines;
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81
;
run;
data province66;
proc surveyselect data=province method=srs rep=1 sampsize=10 seed=61634
out=province66;
proc print data=province66 noobs;
run;
ods html close;
ods html;

```

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Appendix E. Duke University School of Nursing Distinguished Dissertation Award



April 5, 2017

Latefa Dardas
PhD Student, Duke University School of Nursing

Dear Latefa,

It gives me great pleasure to inform you that you have been selected to receive the Distinguished Dissertation Award. You were nominated by Dr. Leigh Ann Simmons.

This award is given annually to the PhD student within the Duke University School of Nursing who is nominated by their dissertation chair and selected by the PhD program dissertation award committee for having a dissertation representing excellence in the areas of innovation, significance and insight. Your dissertation excelled in all these areas, including both methodological and substantive quality.

We would like to recognize your accomplishment during the school's 2017 Awards Ceremony which will be held on May 12, 2017 at 2:30 pm in the Pearson Building, Room 1014, with a reception to follow in the Atrium. Please call Jennifer Meyer Dare at 919-684-8004 or send an email, jennifer.meyer-dare@duke.edu, to let us know if you and any guests will be able to attend this event.

Congratulations on this wonderful achievement!

Sincerely,

Debra Brandon, PhD, RN, CNS, FAAN
PhD Program Director

Robin Dail, PhD, RN, FAAN
PhD Program Faculty Chair

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Biography

Latefa Ali Dardas was born in Jordan on November 27, 1987. She earned her BSN and MSN with distinction from the University Of Jordan School Of Nursing in 2009 and 2013. Latefa is a psychiatric nurse specialized in child and adolescent mental health. She has several national and international awards for scientific excellence and distinguished research publications. To date, Latefa has published 23 articles in top tier peer-reviewed journals and has several other manuscripts under review.

List of Publications

- **Dardas, L.,** Bailey, D., and Simmons L. (2016). Adolescent Depression in the Arab Region: A Systematic Literature Review. *Issues in Mental Health Nursing*, 37 (8), 569-589.
- **Dardas, L.,** Silva, S., Noonan, D., & Simmons, L. (2016). A Pilot Study of Depression, Stigma, and Attitudes towards Seeking Professional Psychological Help among Arab Adolescents. *International Journal of Adolescent Medicine and Health*. 1-8.
- Noonan, D., **Dardas, L.,** Bice-Wigington, T., Sloane, R., Benjamin, R., Choi, S. H., & Simmons, L. A. (2016). Understanding Multiple Behavioral Risk Factors for Cancer in Rural Women. *Public Health Nursing*, 33(6), 519-528.
- **Dardas, L.,** Silva, S., Noonan, D., & Simmons, L. (2016). Studying Depression among Arab Adolescents: Methodological Considerations, Challenges, and Lessons Learned from Jordan. *Stigma and Health*. <http://dx.doi.org/10.1037/sah0000101>
- **Dardas, L.,** & Simmons, L. (2015). The stigma of mental illness in Arab families: a concept analysis. *Journal of psychiatric and mental health nursing*, 22(9), 668-679.
- **Dardas L.** (2015). Myths and Misconceptions about Cancer: Findings from Jordan. *Medicine Journal*, 2(6), 88-93.
- **Dardas, L.,** & Ahmad,M. (2015). Coping strategies as mediators and moderatos between stress and quality of life among parents of children with Autistic Disorder. *Stress and Health*, 31(1), 5-12.
- Ahmad, M., & **Dardas, L.** (2015). Nursing in the Arab world: An aspiration for a culturally-sensitive model. In J. J. Fitzpatrick & A. L. Whall (Eds.). *Conceptual models of nursing: Global perspectives*. Upper Saddle, NJ: Pearson.
- **Dardas L.** & Ahmad, M. (2015). For Fathers Raising Children with Autism, Do Coping Strategies Mediate or Moderate the Relationship between Parenting Stress and Quality of Life?. *Research in Developmental Disabilities*, 36, 620-629.
- Ahmad, M., **Dardas L.,** Dardas, L., & Ahmad, H. (2015). Colorectal cancer in Jordan. *Global Health Promotion*. DOI 10.1007/s13187-014-0698-7.
- **Dardas L.** & Ahmad, M. (2015). The Hidden patients: Fathers of children with autism. *Journal of Intellectual and Developmental Disability*, 40 (4), 368-375.

- **Dardas, L.** (2014). *Arab Parents of Children with Autism*. LAP Lambert Academic Publishing: Deutschland / Ger. ISBN: 978-3-659-55215-1.
- **Dardas, L., & Ahmad, M.** (2014). Quality of life among parents of children with autistic disorder: A sample from the Arab world. *Research in Developmental Disabilities, 35*, 278–287.
- **Ahmad, M., Dardas L., & Ahmad, H.** (2014). Cancer Prevention and Care: a National Sample from Jordan. *Journal of Cancer Education, 30*(2), 301-311.
- **Dardas L., Ahmad M.** (2014). Psychometric Properties of the Parenting Stress Index with Parents of Children with Autistic Disorder. *Journal of Intellectual Disability Research, 58*(6), 560-571.
- **Dardas, L.,** (2014). Psychosocial correlates of parenting a child with Autistic Disorder. *The Journal of Nursing Research, 22*(3), 183-191.
- **Dardas, L., & Ahmad, M.** (2014). Predictors of Quality of Life for Fathers and Mothers of Children with Autistic Disorder. *Research in Developmental Disabilities, 35*(6), 1326-1333.
- **Dardas, L., & Ahmad, M.** (2014). Validation of the World Health Organization's Quality of Life Questionnaire with Parents of Children with Autistic Disorder. *Journal of Autism and Developmental Disorder, 44*(9), 2257-2263.
- **Dardas, L.** (2013). Stress, Coping Strategies and Quality of Life among Jordanian Parents of Children with Autistic Disorder, *Autism, 4*, 127.
- **Dardas, L.** (2014). Psychological health for parents of children with autistic disorder in Jordan. *Global Journal on Advances Pure and Applied Sciences, 4*, 163-164.
- **Hamdan A., Dardas L., & Nawafleh H.** (2011). Psychosocial predictors of anger among university students. *Children and Youth Services Review 34*, 474–479.

List of Papers Under Review

- **Dardas, L., Silva, S., Smoski, M., Noonan, D., & Simmons, L.** (2017). The prevalence of depression symptoms among Arab adolescents: findings from Jordan. *Journal of Affective Disorders.*
- **Dardas, L., Silva, S., Smoski, M., Noonan, D., & Simmons, L.** (2017). Personal and Perceived Depression Stigma among Jordanian Adolescents: Associations with Depression Severity and Personal Characteristics. *Archives of Psychiatric Nursing.*
- **Dardas L., Curry, J., & Simmons, L. A.** (2017). Family Involvement in Adolescent Depression Psychotherapy: A Systematic Review of Randomized Clinical Trials. *Psychotherapy Research.*
- **Dardas, L., & Silva, S.** (2017). Family Functioning Moderates the Impact of Depression Treatment on Adolescents' Suicidal Ideations. *Adolescent health.*

List of Scholarships, Memberships, and Academic Honors

- 2017: Duke University School of Nursing Distinguished Dissertation Award
- 2016: The Rising Stars Award for Excellence in Nursing Scholarship/ The Sigma Theta Tau International
- 2016: The Sigma Theta Tau International/ The Council for Advancement of Nursing Science Research Grant Award
- 2016: VIFRA Young Women Achiever International award (Nursing Category), Granted by the Venus International Foundation Research Awards - India
- 2015: The Scientific Society of Arab Nursing Faculties Award for Best Thesis in the Arab World
- 2015: Duke University Graduate School Fellowship Research Award
- 2015: Duke University School of Nursing PhD Program Pilot Research Grant
- 2015: VIFRA Young Scientist International Award, (Nursing Category), Granted by the Venus International Foundation Research Awards - India
- 2015-current: Member at Sigma Theta Tau International (Beta Epsilon)
- 2015-current: Member at American Council for Advancement of Nursing Science
- 2015-current: Member at Southern Nursing Research Society
- 2015-2017: Elected by the membership of the Beta Epsilon Chapter of Sigma Theta Tau International to represent the Leadership Succession Committee
- 2015: Selected by the Robert Wood Johnson Foundation's NCIN Doctoral Advancement in Nursing Project to serve as a research mentor for prospective doctoral nursing students
- 2014-2017: Scholarship from the University of Jordan and Duke University (PhD)
- 2014: Ali Mango Award for the Distinguished Researcher in Jordan/Graduates
- 2014: The University of Jordan President Honor List Award/Graduates
- 2010-2012: Scholarship from the University of Jordan (MSN)
- 2010: The Jordanian Nurses and Midwives Council Shield for Excellence in Voluntary Work
- 2009: The University of Jordan Certificate for Scientific Excellence
- 2009: Dr. Jehad Al-Halaby Award for Scientific Excellence
- 2009: The Jordanian Nursing Council Award for Scientific Excellence
- 2009: Her Royal Highness Princess Muna Al-Hussein Shield for Scientific Excellence
- 2009: The University of Jordan School of Nursing Honor List Award
- 2006-2009: The University of Jordan Honor List Award for Scientific Excellence