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PREDICTORS OF WELL-BEING AMONG MOTHERS OF CHILDREN WITH AUTISM IN LEBANON

by
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AN ABSTRACT OF THE THESIS OF

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There has been a great interest in the recent literature in the well-being of mothers whose children have autism. Studies have examined child behavioral problems, coping styles, and social support as factors impacting maternal well-being. Along with the aforementioned predictors, the current study delineated formal and informal social support and assessed for social desirability bias, knowledge about ASD, maternal locus of control, and empowerment. This study also examined the efficacy of a training lecture that was designed to increase knowledge about autism. For participation in this study, mothers were recruited from various schools and organizations that educate or treat children with autism. Mothers were provided with a survey battery consisting of pre-training assessments of all targeted variables, then they were presented with the training followed by post-training assessments of knowledge about autism, empowerment, and well-being. Results demonstrated that distraction coping and locus of control were significant predictors of maternal well-being. Social desirability was correlated with maternal well-being. The training did not enhance knowledge about ASD, empowerment, and maternal well-being at posttest. Interpretation of empirical and anecdotal findings, and limitations were further discussed.

Keywords: children with ASD, maternal well-being, child behavioral problems, coping styles, social support, knowledge about ASD, locus of control, empowerment, social desirability.

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Predictors of Well-Being among Mothers of Children with Autism in Lebanon

CHAPTER I

INTRODUCTION TO AUTISM SPECTRUM DISORDER

Autism Spectrum Disorder (ASD) is a heterogeneous neurodevelopmental disorder, characterized by impairments in social interaction, communication, repetitive and restricted behaviors, and rigid adherence to certain routines (American Psychiatric Association, 2013). ASD is a highly prevalent disorder that affects not only the diagnosed individuals, but also their families and the societies to which they belong (Joshi et al., 2010). Parenting a child with ASD is a demanding task (Pozo, Sarriá, & Brioso, 2014) that has the most adverse effects on the well-being of parents, when compared to parenting children with other disabilities, including Down syndrome, cerebral palsy, fragile X syndrome, and undifferentiated developmental disability (Hayes & Watson, 2013). Several challenges accompany parenting a child with ASD, which include: (1) accepting the diagnosis, (2) ambiguity concerning the child’s prognosis, (3) hardships in managing the child’s social deficits and behavioral problems, (4) adapting to the diagnosis through modification of parenting techniques, (5) responsibility in searching for and providing optimal specialized interventions and services for the child, and (6) providing the financial compensation for those services (Rivard, Terroux, Parent-Boursier, & Mercier, 2014). Research has shown that those challenges are correlated with elevated levels of stress and diminished maternal well-being, along with deficits in coping and adaptation (Lecavalier, Leone, & Wiltz, 2006). While such burdens are common to parents in general, they are more taxing and emotionally distressing for parents of children on the spectrum (Baker-Ericzen, Brookman-Frazee, & Stahmer, 2005).

A recent report published by the Centers for Disease Control and Prevention (2014) showed that the prevalence of ASD is 1 in 68 children (14.7 per 1,000), an estimate that has been on the rise since the 1990s. It was also reported that estimated ASD prevalence rates vary based on gender, indicating that ASD is 5 times more common among males (1 in 42) than females (1 in 189). Females with ASD, however, are more likely to also have severe intellectual disability (Volkmar et al., 2014).

ASD does not only affect the diagnosed child, but also all members of the family. Research has provided a wealth of knowledge on the effect of having a child with ASD on both parents and siblings, demonstrating that a diagnosis of ASD has ripple effects within families of children with ASD. Siblings of children with ASD report elevated levels of behavioral and emotional difficulties compared to siblings of typically developing children or those with other developmental disabilities (Bishop et al., 2007 as cited in Lickenbrock et al., 2011). Davis and Cater (2008) demonstrated that both mothers and fathers report elevated levels of stress, with a significant correlation between both maternal and paternal stress (Rivard et al., 2014). Other studies, however, have demonstrated that mothers of children with ASD experience more stress compared to fathers, mainly due to the fact that mothers take more responsibility in childcare (Tehee, Honan, & Hevey, 2009). They also require a higher number of important support needs when compared to fathers, reflecting their higher involvement in childcare (Hartley & Schultz, 2014). Gau et al. (2012) showed that mothers of children with ASD reported significantly higher rates of psychopathology including depression, anxiety, obsession, and psychoticism, when compared to fathers.

Accordingly, the vast body of literature has focused on *mothers* as a result of their deeper investment in the child's well-being, and so did the current study.

Numerous studies (e.g., Benson, 2014; Boyd, 2002; Lecavalier et al., 2006) identified risk and protective factors associated with the psychological well-being of mothers of children with ASD. Some of these factors include child behavioral problems, coping styles, social support, knowledge about ASD, and empowerment. Most of them have been found to be significant predictors while others have yielded inconsistent outcomes pertaining to their significance. The current study systematically replicated Obeid's (2012; published as Obeid & Daou, 2015) study, building on its limitations and expanding upon its main findings by adding an intervention in the form of a training lecture. Particularly, the current study was concerned with the following variables, maternal well-being, child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, social desirability, and locus of control, all of which will be described in the following sections.

CHAPTER II

PARENTING A CHILD WITH ASD

In spite of the continuous increase in prevalence rate of ASD, parenting a child with ASD remains an under-researched facet of the disorder that is of importance to the well-being of both parents and children with ASD (Reed & Osborne, 2014). According to Reed and Osborne (2014), there is a sequential aspect to the experience of parenting a child with ASD, whereby each phase is accompanied by a set of specific concerns. In the first phase, parents notice the presence of a problem. Their concerns are related to identifying its nature, managing their own feelings of efficacy and others' perceptions of the child's condition. Following this stage is a period of high stress and anxiety related to receiving a diagnosis of ASD, handling formal services, managing the impact of the child behavioral problems on the family and others, and "grieving" over the loss of a "normal" child. These concerns have a negative impact on parents, both physically and psychologically (Reed & Osborne, 2014). Consequently, parents have to adapt to the challenges that accompany their child's condition, striking a balance between these challenges and meeting the child's and the family's needs (Hoogsteen & Woodgate, 2013).

The experience of parenting a child with ASD affects family life in general, and well-being of mothers in particular. Aside from setting a structure and plan for the family life, ASD has several burdens on the family functioning, including social isolation, marital conflict, economic strains and impact on siblings. These stressors necessitate adaptation to the condition (Meirsschaut, Roeyers, & Warreyn, 2010; Reed & Osborne, 2014). Given that mothers in particular are largely invested in caring for the child with ASD, they face several challenges, including career adjustments, role restrictions (e.g. lacking personal activities), and lack of sufficient knowledge about ASD. Smith, Seltzer, Tager-Flusberg, Greenberg, & Carter (2008) demonstrated that mothers of children with ASD reported high levels of distress, regardless of their age. They experience feelings of guilt associated with raising a child with ASD and attending to other typically developing child(ren), in addition to being the reason behind their child's condition (Reed & Osborne, 2014). Accordingly, it is recommended that interventions focus on promoting the mothers' level of empowerment and self-efficacy in order to reduce maternal stress and depression (Kuhn & Carter, 2006).

Given the unique challenges of parenting a child with ASD, it is important to understand the factors that influence parental well-being. Lazarus and Folkman (1984) defined psychological stress as a concept that highlights the ongoing dynamics between the individual and his or her environment. It could be observed in various areas pertaining to parenting, and thus results from conflict between individual resources and the needs that accompany parenting. It is considered as a relatively stable construct over time (Östberg, Hagekull, & Wettergren, 1997). Parenting stress has been conceptualized in two ways. On the one hand, it is regarded as a product of environmental factors, including both major life incidents and everyday obstacles. Accordingly, it has been demonstrated that the interaction between individual characteristics and environmental factors might lead to increased vulnerability to stress (Crnic & Low, 2002). On the other hand, parenting stress is viewed as directly related to the stressors and experiences of being a parent, particularly concomitant family and child-related problems (Östberg et al.). In understanding family patterns and dynamics that maintain negative behaviors in children, poor parental well-being maintains negative interactions between family members, which in turn produce high levels of parenting stress and interfamilial conflict (Duncan & Brooks-Gunn, 2000).

Another factor of parenting a child with ASD is the association between parental expectations of the child and child behavior problems. Huang, Yen, Tseng, Tung, Chen, & Chen (2014) demonstrated a non-linear relationship between child behavior problems and parenting stress, whereby higher parenting stress was associated with mild to moderate child behavior problems, rather than severe. Caregivers of children with severe child behavior problems had low expectations of their children and thus experienced lower stress. However, parents of children with mild to moderate behavior problems perceived their children as capable of improving, and thus are more demanding of them, which further increases parental stress (Huang et al.)

CHAPTER III

FACTORS ASSOCIATED WITH WELL-BEING OF MOTHERS OF CHILDREN WITH ASD

A. Child Behavioral Problems

One of the major contributions to parental stress addressed in the literature is behavioral problems of children with ASD. Lecavalier et al. (2006) showed that child behavioral problems, including self-injurious behaviors and aggression, are the leading predictors of parental stress among parents of children with ASD. Child behavioral problems include emotional and behavioral issues that exert burdening effects on the family through restricting activities (Hastings & Brown, 2002), and serve as predictors of stress, family dysfunction, and parental psychological distress (Herring, Gray, Taffe, Tonge, Sweeney, & Einfeld, 2006). Higher levels of child behavioral problems among children with ASD were associated with higher levels of maternal stress (Abbeduto et al., 2004) and poorer levels of maternal well-being (Jones, Hastings, Totsika, Keane, & Rhule, 2014; Obeid & Daou, 2015). Studies have consistently shown that the extensiveness and frequency of child behavioral problems predicted psychological distress, parental stress and poor maternal well-being (Estes et al., 2009; 2013;Minnes, Perry, & Weiss, 2014).

The literature highlights the significant role of perceived social support and perceived degree of child behavioral problems in family functioning. Some research studies have demonstrated that in comparison to ASD symptom severity and delayed adaptive skills, child behavioral problems exert a more negative influence on family functioning (Estes et al., 2009). Additionally, Baker, Blacher, Crnic, & Edelbrock, (2002) indicated that child behavioral problems emerged as a stronger predictor of parental stress than child cognitive delay.

Interestingly, the literature contains mixed findings on the relationship between child behavioral problems and maternal well-being. In examining this relationship, Totsika, Hastings, Emerson, Lancaster, Berridge, & Vagenas (2013) concluded that the relationship between maternal well-being and child behavioral problems is not bidirectional. Early child behavioral problems did not emerge as a significant predictor of prospective maternal well-being, while decreased maternal well-being predicted higher levels of child behavioral problems during later years of child development. Increased maternal well-being had a direct and stable effect on the child’s behavioral problems, and high levels of maternal well-being at the age of 9 months were associated with decreased child behavioral problems at 3 years of age (Totsika et al., 2013).

Receiving a diagnosis of ASD might be a source of grief and sadness for some parents, yet others might feel relieved. Some parents report feeling empowered by the knowledge and understanding of the diagnosis, and able to follow a specific course of action (Wachtel & Carter, 2008). Despite the evidence for several risk factors having adverse effects on parental well-being, psychological resources such as social support, coping styles, and empowerment play a protective role. These psychological resources influence parents’ responses to their hardships and their well-being.

B. Coping Styles

In adapting to the challenges that accompany parenting a child with ASD, coping strategies have been identified as one mechanism parents use in responding to stress. Smith et al. (2008) defined coping as a mechanism through which individuals respond to stressors both behaviorally and cognitively. Originally, researchers dichotomized coping into problem- and emotion-focused strategies, whereby problem-focused coping was defined as an approach that focused on resolving the problem or modifying the source of the stress (e.g. planning), while emotion-focused was that which targeted emotions and feelings associated with the stress (e.g. denial). Studies involving mothers of children with intellectual disabilities and mothers of children with ASD have shown that greater use of emotion-focused coping increased maternal stress and psychological distress. Problem-focused coping, however, enhanced maternal well-being and decreased emotional distress (Pozo et al., 2014). Nevertheless, stress research has demonstrated that this dichotomy oversimplified the way individuals respond to adverse situations. For instance, Benson (2010) indicated that some coping methods served both emotional and behavioral functions. In other words, a coping strategy may reduce negative emotions while directly dealing with the stressor. Hastings et al. (2005) and Benson (2010) examined coping dimensions based on responses of mothers of children with ASD. Hastings et al. identified four coping dimensions designated as problem-focused coping, positive coping, active avoidance coping, and religious/denial coping. Benson (2010), on the other hand, identified four different coping dimensions. *Engagement* is conceptualized as problem-solving coping strategies that target the source of the stress directly, *disengagement* involves strategies used to avoid the stressor or distant oneself from it, *distraction* includes strategies used to divert one's attention away from the stressor and busy the mind with other issues, and *cognitive reframing,* which indicates viewing the stressor in a more positive light (Benson, 2014). In studies of coping styles in mothers of children with ASD, cognitive reframing emerged as a predictor of maternal well-being (Benson, 2014) and positive gain (Minnes et al., 2014). Benson (2014) demonstrated that using engagement as a coping mechanism predicted decreased maternal stress, while distraction was found to be associated with increased maternal distress. His study also highlighted the importance of using cognitive reframing in reducing the negative effects of child maladaptive behavior on maternal distress. This is consistent with earlier findings on the value of positive cognitions in dealing with stressful situations (Pakenham, 2011). Smith et al. (2008) revealed that behavioral disengagement, an emotion-focused coping strategy, was among the strongest predictors of poor maternal well-being. Mothers who used emotion-focused coping (venting, denial, and behavioral disengagement) reported higher degrees of depression and anger, and lower levels of personal growth. Conversely better maternal well-being was evident when mothers used high level of problem-focused coping and low levels of emotion-focused coping (Smith et al.).

Interestingly, studies of coping styles among mothers of children with ASD yielded inconsistent findings among culturally diverse samples. In a study with Taiwanese mothers, Lin, Orsmond, Coster, & Cohn (2011) demonstrated that mothers in Taiwan reported using more problem-focused and emotion-focused coping strategies when compared to mothers in the US. The use of problem-focused coping among Taiwanese mothers decreased depressive and anxiety levels, while increased emotion-focused coping increased their maternal symptoms of depression. Obeid & Daou (2015) studied the association between coping styles and maternal well-being in a sample of Lebanese mothers, implementing Benson's model of coping styles. Results demonstrated that only two coping dimensions of the Benson model, distraction and disengagement, were significantly associated with poor maternal well-being, while cognitive reframing emerged as a predictor of enhanced maternal well-being. Contrary to findings in the literature, engagement was not associated with maternal well-being. Interestingly, the study also showed that mothers in Lebanon used more problem-focused, rather than emotion-focused coping strategies, which predicted poorer maternal well-being. Obeid and Daou (2015) hypothesized that the mothers might have engaged in social desirability behaviors, a limitation that is typically associated with studies based on self-reports (Kazdin, 2003).

C. Knowledge About ASD

Parenting a child with ASD is confronted with unpredictable, low-control situations that leave parents incapable of predicting their children's atypical behaviors. This urges parents to make several changes to adjust to new situations (Tunali & Power, 2002). Providing parents with factual knowledge about the core symptoms of ASD (deficits in social interaction, communication, and repetitive behaviors, interests, and activities), stereotypes, its etiology, and effective interventions is associated with enhanced active roles of mothers in improving and promoting child development (Kuhn & Carter, 2006). This allows parents to attribute their children's atypical behaviors to the disorder itself rather than their parenting styles (Kuhn & Carter, 2006). In comparison to mothers of typically developing children, mothers of children with ASD report lower levels of understanding of their child's behavior (Tunali & Power, 2002). Being active participants in acquiring knowledge about the diagnosis, seeking help from available services, and making use of available interventions, serves as a protective factor for parents of children with ASD.

Seeking knowledge about the disorder after diagnosis might serve as a coping mechanism for parents in dealing with its challenges. This is particularly important for understanding the child's experiences with ASD. Clarke and Van Amerom (2008) concluded that mothers of children with high functioning ASD had different views and beliefs about their children's diagnosis when compared to the children's views of their disorder. For instance, parents endorsed the predominant psychiatric definitions of ASD, conceptualizing it as a disorder that needs to be treated both psychologically and pharmacologically. However, the diagnosed children accepted their differences and did not view themselves as "suffering" (Clarke & Van Amerom, 2008). Parents objectify the condition as a form of coping with the atypical behaviors and attributing them to the disorder itself. On the other hand, children were accepting of it and blamed society for viewing it as a disorder. This underscores the discrepancies between parental and children's views of the condition, primarily due to the lack of adequate parental knowledge about ASD.

Typically, women and individuals with family members with ASD are more knowledgeable about the condition (Dillenburger, Jordan, McKerr, Devine, & Keenan, 2013; Gillespie-Lynch et al., 2015) and more open towards those diagnosed with ASD (Gillespie-Lynch et al.; Nevill & White, 2011). Nevertheless, common misconceptions about the etiology (e.g. ASD is caused by a vaccine or poor parenting), core diagnostic features (e.g. attributing child behavior to other disorders rather than ASD) have been reported. Additionally, lack of knowledge about evidence-based treatments to support individuals on the spectrum has also been documented (Dillenburger et al.; Gillespie-Lynch et al.). Providing knowledge about ASD to parents of children diagnosed with this condition (particularly typical symptoms and early signs, child atypical behaviors, and available pharmacological, psychological, and psychosocial interventions) in the community, is a pressing need for parental well-being (Bradford, 2010).

To assess knowledge about ASD, Gillespie-Lynch et al. (2015) examined the literature on knowledge and stigma associated with ASD. In their review, they found that insufficient knowledge about ASD was evidenced in school-aged children and college students in different countries (e.g., Campbell & Barger, 2014; Igwe, Bakare, Agomoh, Onyeama, & Okonkwo, 2010; Koyama et al., 2009; reviewed in Gillespie-Lynch et al.). Educating others about ASD contributes to positive outcomes for people with ASD, including less social isolation, social rejection, teasing, and bullying, and attributing their communication, social difficulties, and atypical behaviors to ASD (Campbell & Barger, 2014). Misconceptions about ASD emerged in the Gillespie-Lynch et al. study, particularly when participants responded to open-ended questions. Gillespie-Lynch et al. successfully used a cost-effective, online training about autism to reduce stigma and enhance knowledge about ASD. It is conceivable that such an effective training method would be useful when adapted to other members of the community. Parents of children with ASD would benefit greatly from an intervention that would enhance their knowledge about ASD.

1. ABA Intervention. Advocates for applied behavior analysis (ABA), one of the top empirically validated interventions for children with ASD (Department of Health and Human Services, 1999; Jacobson, 2000; Rosenwasser & Axelrod, 2001; reviewed in Daou, 2014) have emphasized the necessity of behavioral intervention for people with ASD. Daou

(2014) revealed that providing behavioral intervention to participants who were in Lebanon, a context that was not greatly familiar with this intervention, was beneficial, even when provided in competition with other “more traditional” forms of intervention. Changes in behavioral outcomes from baseline to post-intervention conditions were socially noticeable, as evidenced by social-validity tests and anecdotally upon discussions with the participants’ parents and teachers.

D. Social Support

Social support is a multidimensional construct, which represents the influence of the social environment on the individual’s well-being (Cohen, Gottlieb, & Underwood, 2000). Several psychological resources contribute to the resiliency and adaptation of the family. Social support is one of the major protective factors that promotes parental well-being and reduces parental stress (Pozo et al., 2014). Benson (2012) described that the quality of the social support provided, along with the mothers’ perceptions of its availability are associated with reduced maternal stress among mothers of children with ASD. Boyd (2002) demonstrated that mothers of children with ASD seek social support in response to stress and depression, pursuing family members first (particularly their spouses), followed by extended family, and then other informal services (i.e. friends, neighbors, religious groups, and volunteers). Pozo et al. (2014) indicated that both mothers and fathers of children with ASD report a positive association between social support and family quality of life. Perception of social support emerged as a protective factor that facilitates parental coping with the demands of the child diagnosed with ASD. This yields a good family quality of life and psychological well-being. For instance, Bromley, Hare, Davison, & Emerson (2004) demonstrated that decreased levels of social support is associated with higher levels of psychological distress among parents of children with ASD. Additionally, substantial research has demonstrated that having a strong support system buffered the negative effects of psychological distress resulting from financial strain. Consequently, this promotes positive parental behaviors and decreased parental stress (Östberg & Hagekull, 2000).

Social support is multifaceted and may refer to informal services. Informal services are one facet that include support provided by family, friends, and other social organizations (e.g. churches and social clubs). Another facet is formal services, which refer to support received from professionals (e.g. doctors, speech therapist, special education teachers…) who provide parents with information about their child's condition and conduct training programs for parents to develop their problem-solving skills (Dunst, Trivette, & Cross, 1986; Renty & Roeyers, 2006). Boyd (2002) indicated that informal support is more efficient at reducing maternal stress, compared to formal support. In families of children with disabilities, parents reported their dissatisfaction with their physician's capacity in understanding the influence of the disability on the family or in helping them communicate with other families, highlighting their need for informal social support (Liptak, Stuart, & Auinger, 2006). According to the mothers, parent support groups are most effective in reducing stress as they create an environment void of scrutiny, and provide them with the opportunity to address the difficulties associated with rearing a child with ASD (Boyd, 2002). Bromley et al. (2004) showed that informal social support was significantly associated with maternal well-being among mothers of children with ASD. Interestingly in this study, formal social support did not emerge as a predictor of maternal well-being.

Research provides inconsistent findings on the association between social support and parental psychological well-being, which may be explained by the various conceptualizations of social support (Kleiboer, Kuijer, Hox, Schreurs, & Bensing, 2006), or a possible mediating role (Ekas, Lickenbrock, & Whitman, 2010; Rook, 2001). Interestingly, some studies revealed that there is no correlation between social support and parenting stress, explaining that mothers might perceive social support as either positive or negative, depending on the quality of the interactions (Raikes & Thompson, 2005; Thompson, 1995). Obeid and Daou (2015) showed that social support did not predict maternal well-being, suggesting that the scarcity of formal social support services in Lebanon outweighs the availability of informal forms of social support, an issue that was further explored in this study. Additionally, White and Hastings (2004) established that informal social support was significantly associated with parental well-being, while formal sources of support did not emerge as predictors of parental well-being among parents of adolescents with intellectual disabilities.

E. Empowerment

In recent years, parents' roles expanded to incorporate different responsibilities, including resolving problems, seeking information, attending committees, educating others, and expressing their children's needs (Minnes, Nachshen, & Woodford, 2003). These roles fall under parental empowerment, a psychological process that reflects the extent to which parents assume active agency and control over themselves, their children, their family and environment (Nachshen, 2005). At an individual level, psychological empowerment encompasses beliefs about one's competency, perception of his/her self-efficacy, attainment of skills and knowledge, and being active participants in decision-making (Mulligan, MacCulloch, Good, & Nicholas, 2012). In comparison to families with lower empowerment, families with a higher level of empowerment reported lower levels of stress, depression, and helplessness (Simon, Murphy, & Smith, 2005). A higher level of empowerment among parents of children with ASD was associated with lower mental health problems (Weiss, Cappadocia, MacMullin, Viecili, & Lunsky, 2012). Parents participating in a psychoeducational support group demonstrated a higher level of empowerment upon follow-up, indicating a higher degree of confidence, ability to control family life, ability to advocate on behalf of their children, and ability to make a difference in services provided for their children (Banach, Iudice, Conway, & Couse, 2010). This finding is particularly important for the purpose of this study since the training lecture provided is not only for a psychoeducational purpose, rather providing a venue for a support group composed of mothers sharing similar experiences. Gabovitch and Curtin (2009) demonstrated that parents receiving services from the community report a greater level of empowerment in dealing with challenges facing their children. In bridging between knowledge and empowerment, Murray, Curran, & Zellers (2008) established that competence and empowerment are rooted in knowledge, and that programs based on collaboration and knowledge about ASD anchor those qualities in parents of children with ASD. Importantly, parents reiterated that knowledge is power and that their understanding of ASD empowers them to improve the quality of their children's lives (Murray, Ackerman-Spain, Williams, & Ryley, 2011).

F. Locus of Control[1]

In addition to social support and coping styles, locus of control is also recognized as a protective factor in families of children with ASD (Bekhet et al., 2012). Rotter (1966)

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[1] Thanks are due to Prof. Arne Dietrich for suggesting the addition of locus of control as a predictor in this study.

defined locus of control as one’s appraisal of his or her control over events occurring in his or her life. He indicated that life events could be assumed under one’s own control and interpreted through internal resources (i.e. one’s own actions and behavior) or external and more powerful factors (i.e. fate, other people’s behavior, or chance). Lloyd and Hastings (2009) indicated that “the most robust predictor” of maternal well-being is locus of control (p. 112). Similarly, parental locus of control was found to be among the main contributors to stress and distress across time in parents of children with developmental disorders (Jones & Passey, 2005). In delineating internal and external locus of control, Siman-Tov & Kaniel (2011) demonstrated that parents of children with ASD having internal locus of control are more capable of dealing with stressful situations and experience less stress, when compared to parents with external locus of control. Hagekull et al. (2001) indicated that external locus of control among parents of toddlers is correlated with child behavioral problems later in childhood. Parents with external locus of control are less likely to take initiative and responsibility, lack a sense of control over their lives (Siman-Tov & Kaniel, 2011), and are more likely to have anxiety (Cheng et al., 2013). Interestingly, studies also indicate that parental locus of control is correlated with levels of social support (Dunn et al., 2001; Hassall et al., 2005 as cited in Lloyd & Hastings, 2009), whereby increased social support increases the feeling of control among parents of children with ASD (Siman-Tov & Kaniel, 2011). This is of particular importance for the purpose of this study since both social support and locus of control are variables of interest.

Cheng et al. (2013) have shed light on the influence of culture on locus of control, showing that individuals from collectivistic societies report higher levels of external locus of control. Interestingly, higher levels of external locus of control in such societies were not necessarily predictive of worse parental outcomes when compared to more individualistic cultures (Weisz et al., 1996), indicating that the nuance of locus of control varies across cultures (Cheng et al., 2013). This was further explored in this study given the lack of research studies about locus of control in parents of children with ASD within the Lebanese context.

G. Social Desirability

For decades, researchers have observed that participants respond in ways that are consistent with social desirability bias, one of the most explored response biases in health and social sciences (Johnson & Van De Vijver, 2003). Crowne and Marlowe (1964) defined social desirability as the need for social approval and acceptance, achieved through demonstrating culturally appropriate and acceptable behaviors. In research, it is the tendency of participants to present a positive image of themselves, a manner that does not reflect their true thoughts and feelings regarding personal or social issues (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In a review by van de Mortel (2008), approximately half of the studies that used a social desirability measure found that social desirability affected the results. Social desirability bias is more likely to occur when using self-report measures assessing personal attitudes, behavioral norms (van de Mortel, 2008), or socially sensitive issues including psychological distress (Todaro, Sears, Rodriguez, & Musto, 2005; as cited in van de Mortel, 2008). Although some common misrepresentations could be attributed to error resulting from memory recall, consistency in reality distortion has several negative repercussions, including a potential to obscure means of responses, distort true relationships between variables (Grimm, 2010), and affect the validity of a measure (van de Mortel, 2008).

In reducing the problematic influence of social desirability bias, Grimm (2010) suggests the inclusion of a social desirability measure. Consistent with recommendations made by Gillespie-Lynch et al. (2015) and Obeid et al. (2015) and given the scarcity of research on the influence of social desirability bias in psychological research in the Arab region in general, and Lebanon in particular, the current study included a social desirability measure to examine its possible influence on responding.

H. Relevant Demographic Variables

Consistent with the majority of the international (e.g., Benson, 2012) and Lebanese (Obeid & Daou, 2015) literature concerned with parental well-being, the current study involved mothers of children with ASD, given their primary role in their children's condition and development.

Research on the association between parent and child characteristics, and parent well-being has yielded inconsistent findings in the context of ASD. In examining parent characteristics, several studies have indicated that parental age is associated with the risk of ASD (Hastings et al., 2005; Parner et al., 2011;). Schieve et al. (2011) established that parents of older children experience a lower degree of stress, when compared to parents of younger children with ASD. This indicates that parents of toddlers with ASD undergo higher level of parental stress and lower levels of well-being, becoming more adjusted with time (Schieve et al.). One explanation for this finding is that mothers of older children have developed better coping strategies, in comparison to those of young children who are still struggling with the acceptance of the diagnosis (Fitzgerald, Birkbeck, & Matthews, 2002). Other studies, however, have demonstrated that parents of older children (5 years old) have higher levels of stress compared to parents of younger children (Rivard et al., 2014). Other factors shown to be associated with higher levels of parental stress include low maternal educational level (Azar & Badr, 2006; Rivard et al., 2014), having another child with disability (Kuhn & Carter, 2006), and parent gender (Durkin et al., 2008). In comparison to couples that have been married for the same period of time, parents of children with ASD have more distressed relationships (Kersh, Hedvat, Hauser-Cram, & Warfield, 2006). On the other hand, such findings were not replicated in other studies. Additionally, no association was examined between parent gender (Kersh et al., 2006), parent educational level (Lecavalier et al., 2006), and parental stress. Obeid and Daou (2015) indicated that out of the factors examined, which included child age, gender, maternal employment, educational level, and marital status, only maternal educational level was found to have a positive impact on perceived well-being among Lebanese mothers.

Research has also identified child characteristics that influence parental stress and well-being. Child gender was found to be significantly associated with parental depression (Jones et al., 2014). Specifically, females were found to be more significantly correlated with elevated levels of parental stress in some studies (e.g., Rivard et al., 2014), but not others (e.g., Kersh et al., 2006; Lecavalier et al., 2006).

Socioeconomic status (SES) has received considerable attention in the literature. In several studies, economic hardship emerged as a significant predictor of stress and poor well-being in families with childhood disability in general, and intellectual and/or developmental disabilities in particular (e.g., Olsson & Hwang, 2008). Generally, families raising children with intellectual and/or developmental disabilities are more likely to have lower socioeconomic status, thus having lower levels of well-being (Emerson & Hatton, 2009). Kersh et al. (2006) also demonstrated that depressive symptoms and poor mental health in mothers of children with developmental disabilities were explained by low economic resources. This finding was also replicated in a study conducted in the Lebanese context among families of children with intellectual disability (Azar & Badr, 2006). When compared to families with lower income, families with high income have lower levels of family strain. Nevertheless, other studies did not replicate those findings, indicating a lack of association between family income and parental stress (Rivard et al., 2014).

CHAPTER IV

RESEARCH ON AUTISM IN LEBANON

Lebanon is a country in the Middle East characterized by a multicultural heritage, primarily the Arab culture, interwoven with Western values of the French and American societies. The cultural context needs to be taken into consideration when looking at research findings obtained in the West, since Lebanon has a unique culture constituting of predominantly collectivistic norms, with a blend of individualistic values (Matsumoto, Yoo, & Nakagawa, 2008). Aside from their main Arabic language, students attain a second and usually a third language, mainly English and French, as part of their education, with the majority of educated individuals being bilingual (Ayyash-Abdo, 2001).

There is a scarcity of research in psychology pertaining to developmental disabilities in general, and ASD in particular, within the Lebanese context. Azar and Badr (2006) identified family strain as the greatest predictor of maternal depression in families raising a child with an intellectual disability in Lebanon. Strain was attributed to financial hardships and family conflicts. The study also identified difficulties associated with raising children with intellectual impairments, including lack of adequate resources, and isolation due to fear of stigma (Azar & Badr, 2006).

In recent years, ASD has been receiving some attention in the research community within the Lebanese context despite the limited available resources. Hamadé et al. (2013) identified several prenatal and perinatal risk factors associated with ASD in Lebanon, including male predominance, age of parents, maternal sadness during pregnancy, childhood infections, residing in industrial areas, and consanguinity. Dirani and Salamoun (2014) described variables associated with early assessment in children with ASD or Intellectual Developmental Disorders (IDD). These variables include difference between rural and urban areas, primary symptoms that alerted the sources of referral (difficulty in social interactions among children with ASD and a significant delay in the acquisition of basic skills among children with IDD), in addition to the severity of the symptoms (Dirani & Salamoun). In comparison to Western countries, the age of first assessment of ASD in Lebanon is higher, with an average age of four years and seven months, although early signs of ASD appear between 12 and 30 months (Dirani & Salamoun). Accordingly, lack of knowledge and negative attitudes towards individuals with ASD may be attributed to the scarcity of ASD-specific services in Lebanon. Obeid and Daou (2015) showed that coping styles, particularly distraction and disengagement, predicted poorer well-being levels, while cognitive reframing was correlated with higher levels of well-being of mothers in Lebanon. Interestingly, social support did not predict better levels of well-being, while child behavioral problems significantly predicted higher levels of maternal well-being. In addition, mothers of children with ASD portrayed poorer levels of well-being when compared to mothers of typically developing children (Obeid & Daou, 2015). Obeid et al.

(2015) indicated that in comparison to the United States, college students in Lebanon were less knowledgeable about ASD, reporting more common misconceptions (e.g. children with ASD intentionally avoid social interactions and cooperation), yet endorsing less specific misconceptions (e.g. awareness of the existence of only one ASD in the DSM-5).

CHAPTER V

AIMS AND HYPOTHESES

The primary purpose of this study was to systematically replicate Obeid and Daou's (2015) study by examining the effect of the pretest variables child behavioral problems, coping styles, and social support on maternal well-being. The current study also looked into formal and informal social support, assessing for social desirability bias, maternal locus of control, knowledge about ASD, and empowerment.

Among the core symptoms of ASD (which include deficits in social interaction, communication, and repetitive behaviors), child behavioral problems have been identified in the literature as mostly associated with decreased levels of maternal well-being (Estes et al., 2013; Jones et al., 2014; Lecavalier et al., 2006). Accordingly, mothers seem to report lower levels of well-being when their children have higher levels of behavioral problems. Therefore, the following hypothesis was tested:

Hypothesis 1: Lower levels of child behavioral problems will predict better levels of maternal well-being.

Furthermore, the literature on coping styles highlighted various categorizations for assessing the mechanisms used by parents of children with ASD in responding to stressful life events. Although research has identified coping styles as a protective factor for mothers managing stress, studies on coping in mothers of children with ASD remain inconsistent. Therefore, this study, in line with Obeid and Daou (2015), examined the extent to which Western findings emerged in the Lebanese context. The study looked into the types of coping styles used by Lebanese mothers and their effect on maternal well-being. Accordingly, the following hypotheses were tested:

Hypothesis 2a: Higher use of problem-focused coping (engagement and cognitive reframing) will predict better levels of maternal well-being.

Hypothesis 2b: Higher use of emotion-focused coping (distraction and disengagement) will predict poorer levels of maternal well-being.

Consistent with the reviewed literature, social support plays a major protective role in promoting maternal well-being, and buffering the negative effects of maternal stress (Pozo et al., 2014). Accordingly, having good perceived social support, compared to low levels of perceived social support, predicted higher levels of well-being. However, findings on perceived social support reported by Obeid and Daou (2015) were divergent, whereby perceived social support did not significantly predict better maternal well-being. Since social support is a multidimensional construct, this study examined two forms of social support, formal and informal services. In Lebanon, informal services provided by family and friends appear to be abundant, but they might not be adequate for mothers of children with ASD (Daou, 2014; Obeid & Daou, 2015; Obeid et al., 2015). Additionally, formal services raise awareness, allow mothers of children with ASD to gain more knowledge about the diagnosis, and teach skills that empower them and allow them to manage their children's condition. Accordingly, the following hypotheses were tested:

Hypothesis 3a: Higher levels of perceived formal social support will predict better levels of maternal well-being.

Hypothesis 3b: Higher levels of perceived informal social support will predict poorer levels of maternal well-being.

In addition to coping styles and social support, locus of control also emerged as a significant predictor of maternal well-being (Lloyd & Hastings, 2009). Research studies have demonstrated that parents of children with ASD having internal locus of control report lower levels of stress, when compared to mothers with external locus of control (Jones & Passey, 2005; Siman-Tov & Kaniel, 2011). Accordingly, the following hypotheses were tested:

Hypothesis 4a: Higher levels of internal locus of control will predict better levels of maternal well-being

Hypothesis 4b: Higher levels of external locus of control will predict poorer levels of maternal well-being.

Acquiring knowledge about autism characteristics and effective interventions is associated with enhanced maternal involvement in improving and promoting child development (Kuhn & Carter, 2006). In comparison to mothers of typically developing children, mothers of children with ASD report lower levels of understanding of their child’s behavior (Tunali & Power, 2002). Typically, women and individuals with family members with ASD are more knowledgeable about the condition (Dillenburger, Jordan, McKerr, Devine, & Keenan, 2013; Gillespie-Lynch et al., 2015). Hence, the following hypothesis was tested:

Hypothesis 5: Higher levels of knowledge about ASD at pretest will predict better levels of maternal well-being.

Finally, in examining predictors of maternal well-being, research has demonstrated that families with a higher level of empowerment reported lower levels of stress, depression, and helplessness (Simon et al., 2005; Weiss et al., 2012). Of particular interest to the current study, Banach et al. (2010) demonstrated that parents participating in a psychoeducational support group demonstrated a higher level of empowerment upon posttest. Hence, the following hypotheses were tested:

Hypothesis 6: Higher levels of empowerment will predict better levels of maternal well-being.

This study built on Obeid and Daou's (2015) earlier findings, establishing more research in the field of ASD in the Lebanese community. Inconsistent with the Western findings on coping styles, Obeid and Daou (2015) demonstrated that only disengagement and distraction coping strategies (types of emotion-focused coping strategies) were significantly associated with reduced maternal well-being. Despite the use of cognitive reframing by the majority of mothers of children with ASD, problem-focused coping styles did not significantly predict higher levels of maternal well-being. The authors hypothesized that social desirability bias might have influenced the results. Given that social desirability is a common limitation in self-reports (Kazdin, 2003), this study aimed at exploring the effects of social desirability bias on coping styles and maternal well-being. The following hypothesis was tested:

Hypothesis 7: Scoring high on social desirability will be positively correlated with better levels of maternal well-being and more use of problem-focused than emotion-focused coping styles.

Aside from the main effects on maternal well-being examined in this study, it was valuable to explore the effects of influential factors that may have affected the expected results. Factors including maternal age, child age, gender of child, time spent with child, marital status, maternal education, maternal employment, and household income have been found to influence levels of maternal well-being (Smith et al., 2008). Therefore, the following hypotheses were examined in this study:

Hypothesis 8a: Problem-focused coping (engagement and cognitive reframing coping), as opposed to emotion-focused coping (disengagement and distraction) will be positively correlated with maternal well-being levels when partialling out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment, and household income.

Hypothesis 8b: Formal social support, as opposed to informal social support, will be positively correlated with levels of maternal well-being when partialling out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment, and household income.

Hypothesis 8c: Internal locus of control, as opposed to external locus of control, will be positively correlated with maternal well-being levels when partialling out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment, and household income.

Hypothesis 8d: Scores on social desirability will be positively correlated with maternal well-being levels when partialling out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment, and household income.

Hypothesis 8e: Child behavioral problems will be negatively correlated with levels of maternal well-being when partially out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment and household income.

Hypothesis 8f: Scores on knowledge about ASD will be positively correlated with levels of maternal well-being when partialling out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment, and household income.

Hypothesis 8g: Scores on empowerment will be positively correlated with levels of maternal well-being when partialling out the effect of child's age, gender, maternal educational level, marital status, maternal age, maternal employment, and household income.

The secondary purpose of this study was to examine the efficacy of a training lecture about ASD at posttest. The significance of the training was that it might be helpful in raising awareness and developing effective parent trainings about ASD. This is particularly important since parenting a child with ASD is confronted with several low-control situations that leave parents incapable of predicting their children's atypical behaviors. Accordingly, this study examined the following hypothesis

Hypothesis 9: The training lecture will enhance scores on knowledge about ASD among mothers of children with ASD compared to their scores at pretest.

Another pressing need for maternal well-being in children with ASD is empowerment, as previously mentioned. Through better knowledge about ASD, mothers of children with ASD could potentially improve the quality of their children's lives (Murray et al., 2011). Given that enhancing knowledge about ASD was a primary goal of the training lecture, and given the association between knowledge and empowerment, it was of interest to examine whether findings in Lebanon would corroborate findings in the literature. Accordingly, this study assessed the efficacy of this training in empowering mothers of children with ASD. The following hypothesis was tested:

Hypothesis 10: The training lecture will enhance scores on empowerment among mothers of children with ASD, compared to their scores at pretest.

CHAPTER VI

METHOD

A. Research Design

The study of interest is a within-participant quasi-experimental research design with a nonexperimental component. The quasi-experimental design assessed whether the dependent variable (maternal well-being) changed as a function of an autism training that the experimenter offered in lecture form. In addition, a questionnaire battery comprised of nine scales was used at pretest, with three scales (knowledge about ASD, empowerment, and well-being) reassessed at posttest. The scales were filled by mothers of children with

ASD and were provided as follows: the first eight scales measured the independent variables, *child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, and locus of control*; in addition to a measure of *social desirability bias,* and a measure of *demographic variables*; and a last scale that measured the dependent variable, *well-being.* In order to explore the study's aims and hypotheses, reliability analyses were conducted to examine the psychometric properties of the Arabic translated scales prior to running the multiple regression analyses.

B. Format of the Survey

The survey battery consisted of an informed consent form (see Appendices A and L), which included important information for participants concerning the purpose of the study, recruitment and procedures, possible discomforts and risks, potential benefits, alternatives to participation, and confidentiality. Additionally, contact information of the investigators was provided in case the participants had any questions regarding the study or if they were interested in learning about the outcome of the study. The survey battery also contained the nine different instruments that will be discussed in further details below.

C. Scales and Reliability

Reliability of the scales and subscales were explored in this study prior to the main analyses. All scales were examined at pretest since it pertained to the predictors (child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, locus of control, and social desirability) of the outcome variable (maternal well-being). In comparison of pre- and posttest measures, three scales of the variables of interest (knowledge about ASD, empowerment, and maternal well-being) were reassessed.

1. Maternal Well-being. Maternal well-being was measured using the General Health Questionnaire (GHQ-12; see Appendices B and M), developed by Goldberg and Williams (1988; as cited by Goldberg et al., 1997), and is a shorter version of the GHQ-60, originally developed by Goldberg (1972). It is a widely used instrument composed of 12 items that measures an individual's health and well-being during the few weeks preceding administration. Participants provided their responses on a classical 4-point Likert-type scale, with various ranges including "better than usual" to "much less than usual", "not at all" to "much more than usual", and "more so than usual" to "much less than usual". In analyzing the responses, higher scores on the GHQ scale indicated lower levels of well-being. The last item of the questionnaire (item 12) was reverse coded. A total score of well-being, which ranged from 0 to 36, was calculated by summing the items of the scale. Goldberg et al. indicated that Chronbach's alpha of the GHQ-12 ranged between .82 and .86. When applied with mothers of children with ASD in the Lebanese context, Chronbach's alpha was high (α=.88), although the last item was dropped from the analysis since the Arabic and French translations of the item did not adequately mirror the English version (Obeid & Daou, 2015). In the current study, the last item was retained since only the Arabic version was used, and the item was reverse coded. The reliability analysis indicated that this scale had high reliability (α=.83; see Table 1).

2. Coping Styles. The Brief COPE Scale (see Appendices C and N), developed by Carver (1997) was used to measure the extent to which mothers of children with ASD employ the various cognitions and behaviors in coping with the stress of parenting. It is a shortened version of the original COPE inventory developed by Carver, Scheier, and Weintraub (1989). It is composed of 28 items whereby responses are rated on a 4-point

Likert-type scale, ranging from “I haven’t been doing this at all” to “I’ve been doing this a lot”. No overall score was calculated for this scale and there were no reversed items. A total score for each subscale was calculated by summing the items loading on each subscale. Higher scores on each coping style indicated more frequent use of that coping style. Research has shown that based on the original 14 derived subscales of the Brief COPE (Carver, 1997), the scale has an acceptable to excellent internal consistency, averaged .72 (range between .54 and .93; Benson, 2010). In earlier reliability analyses, alphas were more satisfactory for Benson’s (2010) four extracted factors compared to Hastings et al.’s (2005) four extracted factors (Obeid, 2012). Based on Benson’s (2010) study, Chronbach’s alpha reliabilities ranged between .73 and .86 for his four coping dimensions. Hence, Benson’s (2010) four factors were adopted in the current study, as generally, they closely resembled the categories of coping styles available in the literature. Additionally, they more adequately reflected mothers of children with ASD (Obeid & Daou, 2015). In a sample of Lebanese mothers of children with ASD, moderate reliabilities were achieved, with an alpha of .71 for engagement coping, .62 for distraction coping, .73 for disengagement coping, and an internal consistency of .67 for cognitive reframing coping (Obeid & Daou, 2015). In this study, reliability analysis demonstrated that the engagement and distraction subscales had acceptable reliabilities (α= .67 and α=.68 respectively). However, disengagement and cognitive reframing coping had low reliabilities (α= .55 and α=.26 respectively; see Table 1)

3. Social Support. In assessing the helpfulness of sources of support in families raising a young child, the Family Support Scale (see Appendices D and O), which was developed by Dunst, Jenkins, and Trivette (1984), was used. The scale is composed of 18 items (in addition to 1 respondent-initiated item), all of which were rated on a 5-point Likert-type scale, ranging from “not at all helpful” to “extremely helpful”. Sources of support that were not available to certain families were provided with an “NA” (Not Available) response under the designated column. A total score was calculated for overall social support, and items were summed to find a total score for formal and informal social support. None of the items were reverse coded. Higher scores indicated higher helpfulness of social support. Additionally, higher scores on each form of social support indicated more helpfulness of that form. Reliability estimates showed to be moderate for this scale, with a Chronbach’s alpha of .77 (Dunst, Jenkins, & Trivette, 1984). Other studies in the literature had found a Chronbach’s alpha of .67 for the Family Support Scale among mothers of children with ASD (Weiss et al., 2013), and an internal consistency of .79 among families of young children with disabilities (Dunst, Trivette, & Hamby, 1994; cited in Hassall, Rose, & McDonald, 2005). Since this measure was not used earlier in Lebanon, this study examined its reliability within a new cultural context. In the current study, the reliability analysis revealed that the scale had a good overall reliability (α= .80; see Table 1). In examining the subscales, informal social support had moderate reliability (α= .76) and formal social support had acceptable reliability (α= .68; See Table 1)

4. Child Behavioral Problems. For the assessment of behavioral problems of children with ASD, The Indian Scale for Assessment of Autism (ISAA; see Appendices E and P), commissioned by the National Institute for the Mentally Handicapped (NIMH) in 2008 was used (Amr, Raddad, El-Mehesh, Mahmoud, & Gilany, 2011; reviewed in Obeid & Daou, 2015). This 40-item measure is rated on a 5-point Likert-type scale, ranging from “rarely” to “always”. A total score of child behavioral problems, which ranged from 40 to

200, was calculated by summing the items of the scale. None of the items were reverse coded. Higher scores indicated higher levels of child behavioral problems. It was a more suitable scale, in comparison to more Westernized instruments (e.g. Child Autism Rating Scale; as cited in Amr et al., 2011), particularly in identifying ASD symptoms and behavioral problems in developing countries. The scale demonstrated excellent Chronbach coefficient alpha of .97 and a good inter-rater reliability coefficient of .83 (Amr et al.). The 40 items are divided among six domains of ASD (Obeid & Daou, 2015). When used with a sample of mothers of children with ASD in Lebanon, total scale reliability was high, with an alpha level of .96, similar to those found in the literature (Amr et al.). Similar to Obeid & Daou (2015), the reliability of this scale was high, with a Chronbach's alpha of .88 (See Table 1)

5. Locus of Control. The Parent Locus of Control Scale (Short Form Revised; See Appendices F and Q), originally developed by Hassall et al. (2005), was used in this study to assess maternal locus of control. This scale is a shortened version of the 47-item survey entitled Parental Locus of Control Scale (PLOC) originally developed by Campis et al. (1986). Based on Campis et al.'s (1986) recommendations, Hassall et al. (2005) removed one of the original subscales (the Fate/Chance subscale), which lacked discriminate validity, and removed one item from the Parental Efficacy subscale. In addition to the removal of the aforementioned sections, Hassall et al. (2005) chose from each subscale the six items with the highest factor loadings. Accordingly, the PLOC (short form revised) is composed of 24 items, rated on a 5-point Likert-type scale, ranging from "strongly agree" to "strongly disagree". Half of the items were reverse coded (items 3, 6, 7, 8, 9, 10, 11, 12, 14, 17, 18, and 19), and a higher score indicated a more external locus of control. The internal consistency of the scale was found to be good, with an alpha coefficient of .82. Since this measure was not used earlier in Lebanon, this study examined its reliability within a new cultural context. In this study, the reliability analysis revealed a moderate reliability of the scale, with a Chronbach's alpha of .73 (See Table 1)

6. Social Desirability. In assessing maternal tendencies towards misrepresenting themselves in a socially desirable manner, the Marlowe-Crowne Form C (MC-Form C; see Appendices G and R), proposed by Reynolds (1982) is a shortened revision of the 33-item standard form Marlowe-Crowne social desirability scale. It is the most widely used scale for assessing social desirability bias. MC-Form C is a 13-item scale, with a true or false format, consisting of behaviors that are socially acceptable, yet are least likely to occur and responses are not indicative of any psychopathology (Crowne & Marlowe, 1960). 5 items were reverse coded (items 5, 7, 9, 10, and 13). Higher scores were indicative of a high need for social approval and an increased likelihood in portraying oneself positively. It had acceptable psychometric properties, with a Cronbach's alpha level of .76, and highly correlates (.93) with scores on the standard form (Reynolds, 1982). Accordingly, this short version could be used instead of the standard form without loss of reliability (Li & Sipps, 1985). Reliability analysis of this study confirmed findings in Li & Sipps (1985), revealing an acceptable reliability of (α= .62; See Table 1)

7. Demographic Survey Questions. Participants were asked to complete a demographics questionnaire (see Appendices H and S), which assessed seven covariates: maternal age, child's age, child gender, marital status, highest educational attainment, employment status, and household income. Participants were also requested to indicate the number of children, whether they have a child with a disability, and time spent with the child.

a. Maternal Age. Maternal age was assessed through the item “ Age (in years)”.

b. Child Age. This was measured through the item “Child’s age (in years)”.

c. Gender. Gender was assessed through a close-ended item “Child’s Gender”, with two response options “Male” and “Female”.

d. Marital Status. The close-ended item “Marital Status” measured the marital status of the participants. Response options included “Married”, “Divorced”, “Separated”, and “Widowed”. Responses were grouped in order to make it dichotomous: The first category involved “Married” mothers, and thus included the option “Married”. The second category consisted of “Single” mothers, which included the options “Divorced”, “Separated”, and “Widowed”.

e. Highest Educational Attainment. This was assessed through a close-ended item “Educational Level”. The available options included “Brevet”, “Baccalaureate”, “Bachelor’s Degree”, “Master’s Degree”, and “Doctoral Degree”. Grouping the responses produced two categories: the first category involved mothers who achieved “High School” as their highest educational attainment, and that included the options “brevet” and “baccalaureate”. The second category included mothers who achieved “University” as their highest educational attainment, which included the responses “Bachelor’s Degree”, “Master’s Degree”, and “Doctoral Degree”.

f. Employment Status. It was measured through a close-ended item “Employment Status”. Response options included “Part-time Employed”, “Full-time Employed”, and “Unemployed”. Responses were grouped in order to produce two categories: the first category involved “Working Mothers”, which included “Part-time Employed” and “Full-time employed”, while the second category involved “Housewives”, which included “Unemployed”.

g. Household Income. The close-ended item “Household Income” measured the average household income per month. Response options included “Less that 500,000 L.L. per month”, “500,000 L.L. – 750,000 L.L. per month”, “750,000 L.L. – 1,500,000 L.L. per month”, “1,500,000 L.L. – 3,000,000 L.L. per month”, “3,000,000 L.L. – 7,500,000 L.L. per month”, and “more than 7,500,000 L.L. per month”.

8. ASD Training Lecture. A training lecture consisting of 63 slide PowerPoint presentation was presented to mothers of children with ASD. The training was adapted from that developed in the Gillespie-Lynch et al. (2015) study. The original training consisted of a description of the diagnostic criteria of ASD, changes between the DSM-IV and the DSM-5 (American Psychiatric Association, 2013; reviewed in Gillespie-Lynch et al.), “early signs of ASD” (e.g. Yirmiya & Charman, 2010; reviewed in Gillespie-Lynch et al.), process of diagnosis and when ASD can be diagnosed (e.g. Luyster et al., 2009; reviewed in Gillespie-Lynch et al.), common misconceptions about ASD (e.g. vaccines and ASD), and common traits among individuals with ASD, with an emphasis on the individual uniqueness of people with ASD (e.g. Wing, 1988 reviewed in Gillespie-Lynch et al.). The training lecture also focused on effective ways of teaching individuals with ASD (e.g. Grandin, 2002; reviewed in Gillespie-Lynch et al.). For the purpose of this study, and since the target participants were Lebanese mothers of children with ASD, the presentation was slightly altered. The experimenters added information pertaining to effective tools and interventions aimed at changing maladaptive behaviors, fostering socially appropriate behaviors in children with ASD, and enhancing their social communication and interactions (e.g. Kazdin, 2001). Specifically, the interventions section explained how Applied Behavior Analytic (ABA) interventions rely on analyzing relations between antecendents, behaviors, and consequences. It also described basic ABA techniques, including prompting, shaping, positive and negative reinforcement procedures, punishment, and extinction. It is noteworthy that the experimenter had approximately 20 hours of training, prior to providing this training to mothers of children with ASD.

9. Knowledge about ASD. In assessing knowledge about ASD in this study, participants completed a survey composed of 33 items (see Appendices I and T), encompassing both open-ended and close-ended questions “examining knowledge and attitudes about ASD”, which was developed by Gillespie-Lynch et al. (2015) and used previously in the Lebanese context (Obeid et al., 2015). The scale is composed of 29 close-ended items, 17 of which were included in the final analysis. Items were rated on a 5-point Likert scale with “1” indicating “strongly disagree” and “5” indicating “strongly agree”. Open-ended responses were coded based on the coding schemes developed by Gillespie-Lynch et al. and used in Obeid et al. Correct items (items 8, 11, 13, 15, 19, 20, 21 and 22) scoring was based on -2 for strongly disagree, -1 for somewhat disagree, 0 for neither agree nor disagree, +1 for somewhat agree and +2 for strongly agree. Incorrect items (items 9, 10, 12, 14, 16, 17, 18, 25 and 29), scoring was based on +2 for strongly disagree, +1 for somewhat disagree, 0 for neither agree nor disagree, -1 for somewhat agree and -2 for strongly agree. The total score of knowledge about ASD ranged from -34 to 34. It was calculated by summing the items of the scale. Higher scores indicated higher levels of knowledge about ASD.

10. Empowerment. In assessing the effectiveness of the training lecture in empowering mothers of children with ASD, the Family Empowerment Scale (FES; see Appendices J and U), developed by Koren, DeChillo, and Friesen (1992), was used. The authors of the 34-item scale identified two dimensions of empowerment; the first being Level of Empowerment, consisting of three levels: (a) Family, indicating family's ability to deal with everyday situations; (b) Service System, indicating the parent's capacity at working with the service system, and (c) Community/Political, indicating parent support in improving services for children with disabilities. The Expression of Empowerment is the second dimension of empowerment, consisting of three levels: (a) Attitudes, which indicate parental beliefs, the interpersonal aspect of empowerment; (b) Knowledge, which indicates parental knowledge and understanding of the environment, the interactional component of empowerment; and (c) Behaviors, indicating what parents do and the behavioral component of empowerment. For the purpose of this study, only the level of empowerment was assessed. The scale was rated on a 5-point Likert-type scale, ranging from "not true at all" to "very true". None of the items were reverse coded. Scores were summed within the three construct areas (Family, Service System, and Community/Political). Higher scores indicated relatively more empowerment within each empowerment level. The internal consistency of the scale was found to be adequate for each of the three subscales (.83 for Family subscale, .77 for Service System subscale, and .85 for Community/Political subscale; Koren et al., 1992). In this study, reliability analysis revealed good reliabilities of the family and service system subscales (α= .80 and α= .82 respectively), and a moderate reliability of the community/political subscale (α= .70) (See Table 1)

D. Translation of Informed Consent Form and Scales

The informed consent form and all scales used in this study were translated from English to Arabic using the translation and back-translation method. The Arabic language, which is the most widely used language in Lebanon, was the only language used in this study in order to avoid translation-related limitations. Both the General Health Questionnaire (El-Rufaie & Daradkeh, 1996 reviewed in Obeid, 2012; Guillemin, Bombardier, & Beaton, 1993) and the Indian Scale for the Assessment of Autism (Amr et al., 2011 reviewed in Obeid & Daou, 2015) were previously translated into Arabic. Nevertheless, the translations were slightly modified for the purpose of the current study.

E. Order Effects and Counterbalancing.

Counterbalanced versions of the questionnaires in the survey battery were used to control for order and sequence effects. During pretest, Version A was ordered in the following way: demographic questionnaire, knowledge about ASD scale, child behavioral problems scale (ISAA), social desirability scale, empowerment scale (FES), coping styles scale (Brief COPE), maternal well-being (GHQ-12), social support scale (FSS), and locus of control scale (PLOC, short-form revised) Version B was reversed: demographic questionnaire, knowledge about ASD scale, social support scale (FSS), maternal well-being (GHQ-12), coping styles scale (Brief COPE), empowerment scale (FES), social desirability scale, child behavioral problems scale (ISAA), and locus of control (PLOC, short-form revised). It is important to mention that the demographic questionnaire and knowledge about ASD were kept at first in both versions in order to avoid random responding due to fatigue. Also, locus of control scale was kept at the end in both versions because it was printed vertically, unlike the rest of the scales, which were printed horizontally. Hence, in order to avoid skipping scales due to confusion, which was observed and resolved immediately during the second session, the empowerment scale was placed at the end. At posttest, three scales were reassessed. Version A included scales with the following order: empowerment scale (FES), maternal well-being scale (GHQ-12), and knowledge about ASD scale. Version B scales were reversed: knowledge about ASD, maternal well-being (GHQ-12), and empowerment scale (FES).

At pretest, 56.6 % of the participants (*N* = 53) responded to Version A of the pretest, while 43.4% of the participants (*N* = 53) responded to Version B of the pretest. During the posttest, 29.6% of the participants (*N* = 33) completed Version A, while 35.2% of the participants completed Version B.

F. Recruitment

Data collection for the main study was initiated upon receiving the approval of the Institutional Review Board (IRB) on November 24, 2015, and ended on April 7, 2016. A sample of mothers of children with ASD residing in Lebanon participated in this study. Participants were recruited from schools and organizations that accommodate children with autism, using convenience sampling. Initially, the participants received an invitation of this research study through the organizations that their children were enrolled in. The invitations (see Appendices K and V) included important information of the purpose of the study, location and timings of the training lecture, risks, benefits, alternatives, and contact information of the investigators. Mothers also had a chance to win one of three 50,000 LBP gift cards as an incentive for participation and to further discourage attrition. Interested participants were asked to contact the investigators of the study for registering their names. Several recruitment procedures were devised due to the difficulties in recruiting participants. Flyers were posted on various relevant Facebook pages. However, this method did not yield any participant. Posting flyers in private clinics and hospitals did not prove fruitful as well. Approaching gatekeepers in schools and organizations in order to reach out to mothers of children with ASD yielded very few participants (6 participants in total). Around 39 schools and organizations were contacted and over 20 emails were sent to different gatekeepers. The process of contacting gatekeepers was very strenuous and challenging, with a total of almost 30 phone calls. Very few agreed to collaborate and disseminate the flyers to the mothers. Some refused immediately after knowing about the research, while others were contacted several times before providing a response. Additionally, several gatekeepers requested all the material of the training, followed by a meeting with the co-investigator to inquire more about the training prior to taking the decision, which took several weeks and further delayed the process of recruitment. Gatekeepers provided different reasons for rejecting to participate, including the several research projects running at once at their premise, transportation to the American University of Beirut, lack of interest in research-related matters, and having their own trainings being provided to mothers.

Additionally, almost 83% of the distributed questionnaires were completed during the research sessions. Some mothers who attended the training sessions refused to complete the questionnaires and indicated that they are only present for the training itself. Given the aforementioned difficulties, another recruitment procedure was implemented. The training lecture was provided in premises that accepted to participate, rather than inviting the mothers to the American University of Beirut. Response rates of mothers at the sites where the training was provided ranged between 40% and 50%. This strategy yielded a slightly higher number of participants, since it was more convenient for the mothers. Despite offering to provide the training at the organizations' premises, there were around 6 cancellations and rescheduling of both pre- and posttest sessions. Nevertheless, the response rate was still low, and even lower in posttest sessions, which will be further addressed in the discussion section.

G. Participants and Sample Characteristics

Tabachnick and Fidell (2014) suggested the following formula: 50+8M (with 'm' being the number of variables to be investigated) for calculating sample size. An optimal sample of 170 mothers of children with ASD currently residing in Lebanon was expected to participate in the study. This sample size was not met since it was challenging to gain access into the population of mothers of children with ASD in Lebanon. Obeid and Daou (2015) described the laborious process of reaching and recruiting Lebanese mothers of children with ASD, which further set limitations on the sample size of their study.

Inclusion criteria for participating in this study were: being a mother to a child with autism residing in Lebanon. The sample size of this study was 54 mothers of children with autism who attended the first session of the training, 33 of whom attended the posttest session. Interest in participation and response rate of organizations was higher in Bekaa and Mount Lebanon (3 organizations), compared to Greater Beirut region (1 organization). The age range of participants in the study was between 20 and 52 years, with a mean of (M = 38.75; SD = 7.00; see Table 2a), while child age range was between 3 and 27 years, with a mean of (M = 9.69; SD = 4.18; see Table 2b)

In examining the demographics (see Table 2c) the majority of the mothers were married (85.2%), while the rest were divorced (1.9%), widowed (5.6%), or separated

(3.7%). With regards to education, 13 (24.1%) mothers of children with autism had a brevet level of education, 13 (24.1%) mothers had a baccalaureate level of education, 18(33.3%) mothers completed a bachelor's degree, and 6 mothers (11.1%) completed a Masters degree.

Moreover, the range of household income fell between less that 500,000 L.L. monthly, to more than 7,500,000 L.L. per month. 3 (5.6%) participants earned less than 500,000 L.L. per month, 4 (7.4%) participants earned between 500,000 and 750,000 L.L. per month, 14 (25.9%) participants earned between 750,000 and 1500,000 L.L. monthly, 9 (16.7%) participants earned between 1,500,000 and 3,000,000 L.L. monthly, 11 (20.4%) participants earned between 3,000,000 and 7,500,000 L.L. monthly, and 5 (9.3%) participants earned more than 7,500,000 L.L. monthly.

With respect to maternal employment status, 6 (11.1%) were part-time employees, 8 (14.8%) mothers were full-time employees, and 38 (70.4%) were unemployed. It appears to be that in this sample, mothers who were unemployed were more than those who were employed. Of the 54 mothers, 17 (31.5%) mothers typically spend almost all their time with the child (81-100%), 15 (27.8%) mothers spend most of their time (61-80%), 14 (25.9%) frequently spend time with their child (41-60%), 6 (11.1%) mothers spend some time with their child (21-40%), and only one (1.9%) mother rarely spends time with her child (up to 20%). The mean of the time spent with child is (M = 3.77; SD = 1.08). It is evident that since the majority of the mothers were unemployed, the time spent with the child is mostly to always.

With respect to the number of children, 2 (3.7%) mothers had only one child, 24 (44.4%) mothers had 2 children, 22 (40.7%) mothers had 3 children, 5 (9.3%) had 4 children, and only one (1.9%) mother had 5 children. Of the 54 mothers, 41 (75.9%) mothers had a male child diagnosed with autism, while 13 (24.1%) mothers had a female child diagnosed with autism.

H. Procedures

Mothers of children with ASD interested in participating in the training lecture and who contacted the investigators were informed about the time and date of the training lecture at the American University of Beirut. The first session was conducted on January 7, 2016. At the beginning of every first session, participants were presented with the informed consent process. Upon providing consent, participants received a participation number (to match their responses on designated variables of pre- and post- training) and were asked to complete the survey battery. The investigator of the study then provided the training lecture. At the end of the session, mothers received handouts, links, and other relevant information, which they could continue to use and refer to after the training lecture was over in order to maintain the information over time. Mothers also received information about available sources of support in Lebanon that may provide them with the help that they might need in addressing maladaptive behaviors. The total amount of time commitment in the first session lasted approximately 2½ hours. In total, 9 training sessions were run, along with 10 posttest sessions.

After two to four weeks, participants were invited to a posttest session, during which they were asked to provide responses to the posttest (which included re-assessing two of the scales they completed during pretest) and a measure of well-being. The aim was to reassess maternal well-being, examine the extent to which the information explained during the first session maintained over time, and offer a refresher training/Q&A session.

At the posttest, participants were offered a certificate of participation and a chance to participate in the draw, and debriefed upon the completion of the study. The total amount of time commitment in the posttest session lasted approximately 30-45 minutes.

I. Pilot Study

Given that this study had a training component, the questionnaires were pilot tested with one mother of a child with autism. Only one mother was involved in the pilot since access to mothers of children with ASD in Lebanon is very limited. The average time required to complete the questionnaire ranged between 45 minutes and one hour. The participant requested a clarification of a few terms. Therefore, minor changes were made to the battery of surveys. These changes included a more adequate and sensitive translation of the term “disability”, rewording of a few items in order to clarify the intended meaning, and rearrangement of the order of the scales for the convenience of the participants.

J. Analytic Plan

An analytic plan was devised for the purpose of this study. Prior to main analysis, reliability analyses were conducted in order to examine the psychometric properties of the scales used in this study. The analysis addressed two aims of the current study. The multiple regression stepwise backward involved an analysis on the pretest variables, examining the predictors (child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, locus of control, and social desirability) of the outcome variable (maternal well-being). A paired samples t-tests was also conducted in order to examine differences on variables of interest (knowledge about ASD, empowerment, and maternal well-being) between the pre- and posttest measures of mothers of children with autism. All statistical analyses were conducted using SPSS version 21.

CHAPTER VII

RESULTS

A. Preliminary Analysis

Prior to running the main analyses of this study, preliminary analyses were conducted, which include missing value analysis, analysis of univariate and multivariate outliers, and normality analysis.

1. Missing Values Analysis. A total of 54 participants completed the battery of questionnaires. The only inclusion criterion in this study was being a mother to a child with autism. Based on the missing value analysis, all variables had less than 5% missing values, except for maternal age (5.6%), knowledge about ASD pretest items 9, 11, 12, 17 (5.6% each), and 27 (7.4%), Brief COPE items 9, 13 (5.6% each), Locus of Control pretest item 1 (5.6%), Family Empowerment Scale pretest items 8, 10, 12 (7.4% each), 14 and 30 (5.6% each), Family Social Support pretest items 4, 5, 7, 8 (5.6% each), and 9 (7.4%), and Indian Scale for Assessment of Autism pretest items 4, 5, 6, 7, 9, 15, 17, 18, 19, 23, 26, 27, 32, 35, 36, 38 40 (5.6% each), 8, 10, 16, 20, 21, 24, 25, 28, 29, 30, 33, 34, 39 (7.4% each), 22 (20.4%), and 31 (11.1%). There were no missing values of more than 35% of the total items of the questionnaires in pretest measures. Additionally, the analysis of the Little MCAR's test was non-significant; X^2 (9013) = .00, *p* = 1.000 indicating that the values were missing at random. Hence, all participants (*N* = 54) were retained in the analysis.

Twenty-one participants were excluded from the posttest analysis because they did not complete the posttest measures, retaining a sample size of *N* = 33 participants. The missing value analysis demonstrated that missing values on all variables were less than 5%, except for knowledge about ASD posttest items 11, 12, 17 (9.1%), 9, 16, and 22 (6.1% each), Family Empowerment Scale posttest items 8, 10 (9.1% each), 12, 14, 17, 19, and 30 (6.1% each). In order to assess whether missing values were missing at random, a Little MCAR's test was conducted. The Little MCAR's test revealed statistically non-significant results; X^2 (1274) = 8.09, p = 1.000. This indicates that values were missing completely at random. On posttest items, the missing value analysis demonstrated that missing values on all variables were less than 5%, except for Knowledge about ASD items 11, 18, and 21 (9.1% each), empowerment items 7, 14, 15, 23, 31, 33 (6.1% each), and 17 (12.1%). Similarly, Little MCAR's test revealed statistically non-significant results; X^2 (970) = 25.96, p = 1.000. This indicates that values were completely missing at random.

2. Univariate and Multivariate Outliers. Univariate outliers were inspected at pretest through Z-scores, and one univariate outlier (case number 38) was found on the variable child age with Z-score above ±3.29 standard deviations as recommended by Field (2013). Using SPSS syntax on pretest variables, multivariate outliers were examined through Mahalanobis distance. No cases were found to be multivariate outliers, χ^2 (13) = 27.69, $p < .01$.

Similarly, in examining posttest measures, univariate outliers were inspected through Z-scores, and no univariate outlier was found above ±3.29 standard deviations as recommended by Field (2013). Using SPSS syntax on variables of interest, multivariate outliers were examined through Mahalanobis distance. None of the cases were found to be multivariate outliers, χ^2 (4) = 18.47, $p < .01$.

3. Outliers in the Solution. Outliers in the solution are cases that exert undue bias on the parameters of the regression model, yet are not adequately predicted by the regression model. Outliers in the solution were examined through standardized residuals (Field, 2013). A significance level of ±3.29 is considered a marker of outliers in the solution. Observing the standard residuals of pretest variables revealed no cases above ±3.29 (scores ranged between -1.69 and 2.03). Since only one case was observed as a univariate outlier, and none of the cases were found to be a multivariate outlier or outlier in the solution, all cases were retained in the final analysis.

4. Normality. Normality of the variables was tested using the Shapiro-Wilk test. The Shapiro-Wilk test is sufficient as the data set is small (N<100).

The test indicated that the following variables were normally distributed: maternal well-being, *W*(48) = .98, *p* = .514, maternal age, *W*(48) = .97, *p* = .358, child behavioral problems, *W*(48) = .99, *p* = .897, empowerment (family subscale), *W*(48) = .97, *p* =.258, empowerment (service system subscale), *W*(48) = .96, *p* = .164, empowerment (community/political subscale), *W*(48) = .99, *p* = .924, social desirability, *W*(48) = .96, *p* = .078, locus of control, *W*(48) = .96, *p* =.156, knowledge about ASD, *W*(48) = .99, *p* = .840, engagement coping style, *W*(48) = .96, *p* = .109, distraction coping style, *W*(48) = .98, *p* = .413, cognitive reframing, *W*(48) = .96, *p* = .099, informal social support, *W*(48) = .96, *p* = .111, and overall social support, *W*(48) = .96, *p*>.087. The assumption of normality was met for these variables. However, the assumption of normality was violated for the following variables: child age, *W*(48) = .95, *p* = .03, *sig*, disengagement coping style, *W*(48) = .95, *p* = .03, *sig*, and formal social support, *W*(48) = .93, *p* = .007, *sig*. In order to preserve the integrity of the data, especially that the sample size is small, variables where normality was not met were not transformed.

B. Counterbalancing For Pre- and Posttest Measures

In order to control for order and sequence effects, two counterbalanced versions of the pre- and posttest battery of surveys were generated; Version A and Version B. Upon examining normality, independent samples t-tests were conducted in order to examine whether mothers' responses differed across versions. Results revealed that participants who filled version A did not significantly differ from participants who filled version B on pre- and posttest measures (see Tables 4 through 7; Appendix W)

C. Scale Descriptives

The means and standard deviations of all the variables explored with mothers of children with autism are displayed in Table 3. With regards to the outcome variable (maternal well-being), it has a mean of (*M* = 14.44, *SD* = 5.73), which indicates that on average participants tend to have healthy well-being levels. Concerning level of empowerment, it appears that on average, participants were relatively more empowered on the family level (*M* = 45.22, *SD* = 6.7), service system level (M = 45.74, *SD* = 7.16), and community/political level (*M* = 32.17, *SD* = 5.47). The variable knowledge about ASD has a mean of (*M* = 7.04, *SD* = 6.28), indicating that participants tend to have relatively high levels of knowledge prior to the training. The mean for locus of control is (*M* = 72.24, *SD* = 11.15), indicating that on average, participants tend to score in the middle, between external and internal locus of control. Concerning coping styles, it appears that the participants have on average higher levels of engagement coping (*M* = 24.48, *SD* = 3.89), lower levels of distraction coping (*M* = 16.89, *SD* = 4.08), lower levels of disengagement coping (*M* = 9.07, *SD* = 3.01), and higher levels of cognitive reframing (*M* = 19.94, *SD* = 2.48). It could be deduced that on average, the most used coping strategies were engagement coping and cognitive reframing, while the least used coping strategies were distraction and disengagement coping. With respect to social support, it has a mean of (*M* = 48.45, *SD* = 15.32), indicating that participants, on average, had higher levels of overall social support (*M* = 48.45, *SD* = 15.32). Through a deeper examination of the subscales, mothers appeared to have, on average, both higher levels of informal (*M* = 33.09, *SD* = 12.42), and formal social support (*M* = 15.36, *SD* = 4.91). Participants' scores on child behavioral problems were lower than the midpoint (*M* = 100.13, *SD* = 21.84), indicating that on average, they do not perceive their children's behavior as occurring frequently. Finally, on social desirability, it has a mean of (*M* = 8.77, *SD* = 2.17), indicating that on average, participants tended to report a high need for social approval and were more likely to portray themselves positively.

D. Correlation Analysis between Predictor Variables and Maternal Well-Being

1. Assumptions of the Pearson and Spearman Correlation Tests

a. Variable type. The predictor variables (maternal age, child age, child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, locus of control, and social desirability) and the outcome variable (maternal well-being) were entered as scale variables. The remaining predictor variables [2](gender, marital status, education level, and employment status) were entered as nominal dichotomous.

b. Normality. The predictor variables maternal age, child behavioral problems, empowerment, social desirability, locus of control, knowledge about ASD, coping styles (engagement, distraction, and cognitive reframing), overall social support, and informal

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[2] Demographic variables that were ordinal were grouped into nominal dichotomous in order to meet the assumption for correlation and regression.

social support were normally distributed. Correlation was assessed through a Pearson's correlation coefficient. However, child age, time spent with child, disengagement coping, and formal social support did not meet the assumption of normality. Since these variables violated one of the parametric assumptions, Spearman's correlation coefficient was used to examine correlations.

2. Main Analysis. A Pearson's correlation was performed between the outcome variable (maternal well-being) and the predictor variables (maternal age, educational background, employment status, marital status, child behavioral problems, coping styles (engagement, distraction, and cognitive reframing), knowledge about ASD, overall social support, informal social support, empowerment {family, service system, community/political}). Table 8 presents the zero order correlation matrix.

An examination of the one-tailed correlation matrix revealed an absence of a significant correlation between the predictor variables; maternal age (r = -.081, p = .287, *ns*), marital status (r = .20, p = .078, *ns*), educational level (r = .04, p = .386, ns), employment status (r = .01, p = .487, *ns*), child's gender (r = .06, p = .326, *ns*), child behavioral problems (r = .16, p = .130, *ns*) empowerment (family subscale) [r = -.21, p = .064, *ns*], empowerment (service system subscale) [r = -.14, p = .153, ns], empowerment (community/political subscale) [r = -.02, p = .455, *ns*], knowledge about ASD (r = -.02, p = .443, *ns*), coping styles (engagement) [r = -.17, p = .114, *ns*], coping styles (cognitive reframing) [r = -.04, p = .378, *ns*], overall social support (r = -.09, p = .267, *ns*), social support (informal) [r = -.07, p = .307, *ns*]and the outcome variable (maternal well-being).

The Pearson's correlation matrix also revealed the presence of a significant negative medium correlation between the predictor variable social desirability and maternal well-being; r =-.30, p = .015 *(one-tailed)*. This indicates that the higher the need for social approval, the lower the scoring on well-being, which means the higher the well-being levels, and vise versa. Another significant positive medium to large correlation between locus of control and maternal well-being; r = .38, p = .002 *(one-tailed).* This indicates that the higher the scoring on the locus of control scale (i.e. the higher the external locus of control), the higher the scoring on well-being, which means the lower the well-being levels among mothers of children with autism. The matrix also reveals a significant positive medium to large correlation between distraction coping and maternal well-being; r = .36, p = .004 *(one-tailed)*. This indicates that the higher the distraction coping, the higher the scoring on well-being, which means a lower level of well-being.

An observation of Spearman's correlation matrix (Table 9) revealed no significant correlation between the predictor variables (child age, free time spent with child, and formal social support), and the outcome variable (maternal well-being); r_s = -.22, p = .061, *ns (one-tailed),* r_s = .01, p = .474, *ns (one-tailed),* r_s = -.09, p = .255, *ns (one-tailed).* On the other hand, the matrix revealed a significant positive small to medium correlation between disengagement coping and maternal well-being; r_s = .23, p = .046 *(one-tailed)*. This indicates that the greater use of disengagement coping strategies is correlated with higher scores on the well-being scale, an indication of lower levels of maternal well-being.

E. Partial Correlation Analysis

Another aim of the study was to examine whether the predictor variables (child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, locus of control, and social desirability) would correlate with maternal well-being when partially out the effect of the demographic variables (maternal age, child age, child gender, marital status, employment status, and educational level). In order to address this hypothesis, a partial correlation was conducted since it controls for the effects of the aforementioned demographic variables.

Results of the one-tailed partial correlation matrix (Table 12) demonstrated that *hypotheses 8 a (partially), b, e, f, and g* were not supported. This suggests that coping styles (engagement) [*r* = -.23, *p* = .086, *ns*], coping styles (cognitive reframing) [*r* = -.03, *p* = .400, *ns*], coping styles (disengagement) [*r* = .26, *p* = .063, *ns*], overall social support (*r* = -.09, *p* = .294, *ns*), social support (formal) [*r* = -.09, *p* = .287, *ns*], social support (informal) [*r* = -.08, *p* = .328, *ns*], child behavioral problems (*r* = .07, *p* = .336, *ns*) knowledge about ASD (*r* = -.10, *p* = .476, *ns*), empowerment (family subtype) [*r* = -.20, *p* = .118, *ns*], empowerment (service system) [*r* = -.15, *p* = .195, *ns*], and empowerment (community/political) [*r* = -.09, *p* = .299, *ns*] were not significantly correlated with the outcome variable (well-being); *(one-tailed), Hypothesis 8a* was partially supported, with a medium significant positively correlation between distraction coping and well-being levels; *r* = .44, *p* = .003 *(one-tailed)*. In other words, increased frequent use of distraction coping is correlated with higher scoring on well-being, which indicates lower maternal well-being levels, when controlling for demographic variables. Similarly, *hypothesis 8c* was also supported in this sample, with a significant medium positive correlation between locus of control and maternal well-being; *r* = .38, *p* = .01 *(one-tailed)*. It was evident that upon controlling for the effects of demographic variables, higher levels of locus of control (i.e. increased external locus of control) is correlated with increased scoring on well-being, indicating lower maternal well-being levels, and vice versa. Moreover, *hypothesis 8d* was also confirmed, whereby social desirability was significantly negatively correlated with a medium effect size with maternal well-being; $r = -.33$, $p = .022$ *(one-tailed)*. Hence, when controlling for the effects of the demographic variables, higher need of social approval is associated with lower scoring on well-being, which reflects lower maternal well-being levels.

F. Correlation Analysis between Social Desirability and Maternal Well-Being and Coping Styles

In exploring hypothesis 7 of the current study, the following correlation test was produced.

1. Assumptions of the Pearson and Spearman Correlation Tests

a. Variable type. The predictor variables (social desirability, coping styles, and maternal well-being) were entered as scale variables.

b. Normality. The predictor variables (social desirability, locus of control, coping styles (engagement, distraction, and cognitive reframing) were normally distributed. Correlation was assessed through a Pearson's correlation coefficient. However, disengagement coping did not meet the assumption of normality. Since disengagement coping violated one of the parametric assumptions, Spearman's correlation coefficient was used to examine correlations.

2. Main Analysis. A Pearson's correlation was performed between the predictor variables (social desirability, well-being, and coping styles {engagement, distraction, and cognitive reframing}). Table 10 presents the correlation matrix.

An examination of the correlation matrix revealed an absence of a significant correlation between social desirability and coping styles (engagement and cognitive reframing); $r = .06$, $p = .334$, *ns (one-tailed)*, $r = .06$, $p = .341$, *ns (one-tailed)* respectively.

Similarly, the Spearman correlation (see Table 11) revealed an absence of a significant relationship between social desirability and disengagement coping; *r* = -.17, *p* = .114, *ns (one-tailed).* The Pearson's correlation matrix revealed a significant positive relationship between social desirability and maternal well-being; *r* = -.30, *p* = .015 *(one-tailed).* This indicates that higher scoring on social desirability is associated with lower scoring on well-being, which indicates higher levels of maternal well-being. The Pearson's correlation matrix also revealed the presence of a significant negative small to medium correlation between the predictor variable social desirability and distraction coping; *r* =-.46, *p* = .000 *(one-tailed)*. This indicates that the higher the need for social approval, the lower the scoring on distraction coping. These findings indicate that *hypothesis 7* was partially supported, whereby scoring high on social desirability did correlate positively with better levels of well-being. Additionally, results also revealed that an increased need for social approval is correlated with a decreased use of distraction coping (an emotion-focused coping). Nevertheless, social desirability did not correlate adequately with all coping styles to fully confirm hypothesis 7.

G. Regression Analysis:[3] Predictors of Maternal Well-Being

1. Influential Cases. An important assumption of the regression includes influential cases, which are those that bias the regression model, exerting a large influence over its parameters. The presence of influential cases was assessed through Cook's Distances, which is the difference between a parameter estimated using all cases and estimated when

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[3] Given the small sample size, the regression model was rerun including 3 predictor variables only (locus of control, knowledge about ASD, and coping styles), which were chosen based on the fact locus of control and coping styles did emerge as predictors of well-being in the main analysis. Knowledge about ASD has been shown to predict well-being levels. Results were unchanged, however. They were similar to those obtained when all the variables were entered in the regression.

one case is excluded (Field, 2013). Cases with Cook's Distance beyond 1 become a cause of concern. In the current analysis, Cook's Distances ranged between .00 and .13. This indicates the absence of influential cases in the data.

2. Outliers in the Solution. Outliers in the solution are cases that exert undue bias on the parameters of the regression model, yet are not adequately predicted by the regression model. Outliers in the solution were examined through standardized residuals (Field, 2013). A significance level of ±3.29 is considered a marker of outliers in the solution. In this analysis, observation of the standard residuals revealed no cases above ±3.29 (scores ranged between -2.52 and 2.26).

3. Statistical Assumptions for Parametric Testing.

a. Homogeneity of variance: In examining the homogeneity of variance, the Levene's test was not significant for the following variables: knowledge about ASD, *F*(1,41) = .98, *p* = .328, *ns*, engagement coping style *F*(1,41) = .90, *p* = .347, *ns*, distraction coping style, *F*(1,41) = .65, *p* = .426, *ns*, disengagement coping style, *F*(1,41) = .39, *p* = .538, *ns*, informal social support, *F*(1,41) = .44, *p* = .512, *ns*, formal social support, *F*(1,41) = 3.00, *p* = .091, *ns*, overall social support, *F*(1,41) = 1.07, *p* = .307, *ns*, locus of control, *F*(1,41) = 1.07, *p* = .308, *ns*, empowerment (family level), *F*(1,41) = .02, *p* = .902, *ns*, empowerment (service system level), *F*(1,41) = .56, *p* = .459, *ns*, empowerment (community/political level) = *F*(1,41) = .66, *p* = .422, *ns*, social desirability, *F*(1,41) = 1.55, *p* = .221, *ns*, child behavior problems, *F*(1,41) = .03, *p* = .866, *ns*, maternal age, *F*(1,41) = .37, *p* = .547, *ns*, child age, *F*(1,41) = .01, *p* = .92, *ns*, in addition to maternal well-being, *F*(1,41) = .04, *p* = .848, *ns*, The only variable that did not meet the assumption of homogeneity of variance was cognitive reframing coping, *F*(1,41) = .65, *p* = .040, *sig*.

b. Variable type. All variables included in this analysis were scaled and dichotomous. Hence, the assumption of variable types for this analysis was met.

c. Multicollinearity. Concerning multicollinearity and singularity, there should be no perfect linear relationship between two or more of the predictors in the regression model. Value for Variance Inflation Factor (VIF) coefficients was checked to examine whether any of the predictor variables has a strong correlation with another predictor variable. VIF values above 10 would be a cause for concern. In the current analysis, the coefficients table produced revealed that VIF values were below 10 indicating that multicollinearity is not a problem.

d. Independent errors. With respect to independent errors, an important assumption of regression is that errors of prediction are independent of one another, in other words, the residuals are uncorrelated. The Durbin Watson statistic is a measure of auto-correlation of errors over the sequence of cases, a value used in order to examine whether this assumption was met. The Durbin-Watson statistic ranges from 0 to 4. If the value is around 2, the assumption of independence of errors is met. Values less than 1 and greater than 3 would be cause for concern. In this analysis, the value of Durbin Watson was 2.13, which satisfies the requirements for independence of errors.

e. Normally distributed errors. The assumption of normality of the residuals of the outcome variable maternal well-being was assessed through the histogram. The histogram demonstrated that the distribution of residuals is not significantly different from that of a normal distribution, displaying a bell shaped curve. Accordingly, the normality of residuals was met (see Figure 1).

f. Homoscedasticity. With respect to the assumption of homoscedasticity, it tests whether that at each level of predictors, the variance of residuals is constant. A scatterplot diagramming the standardized residuals against the standardized predicted values is produced (ZRESID vs ZPRED). ZPRED is the standardized predicted values of the dependent variable based on the model while ZRESID is the standardized residuals or errors (Field, 2013). In this study, Homoscedasticity can be inferred since the scatterplot is a random array of dots. Scores do not build up on one side of the graph. Therefore, the assumption of homoscedasticity of regression slopes was met (see Figure 2).

g. Ratio of cases to IVs. Finally, the ratio of cases to IVs was not met. When expecting a medium effect relationship between the predictor variables and the outcome variable, Tabachnick and Fidell (2014) recommend the following " some simple rules of thumb regarding N> or = 50+8m, m is the number of IVs for testing the multiple correlation and N greater than or equal to 104 + m, for testing individual predictors" (pg. 159). This study includes eight predictor variables, one outcome variable, and six covariates. Optimally, the sample size should have been 170 participants at pretest and 74 at posttest. However, only 54 participants attended the pretest session, and only 33 participants completed the posttest measures. It is important here to note the various difficulties that were faced in recruitment, which will further be addressed in the Discussion and Limitations sections below.

4. Multiple Regression Main Analysis

A multiple regression analysis using a stepwise backward method was carried out in order to test for hypotheses 1 through 4. This method was chosen for the purpose of this study since it is exploratory in nature and relatively new in the Lebanese context. Although two of the scales used in this study were investigated in the study by Obeid and Daou (2015), they were provided in three different languages, while in this study, only the Arabic language was used. Additionally, given that there is a large number of predictor variables explored in this study, the backward method was selected instead of the forward stepwise in order to avoid suppressor effect (Field, 2009).

According to Table 13, the F test of the last regression model (Model 12) containing the predictors (locus of control and distraction coping), which were backward entered into the regression equation, was significantly better than the mean in explaining the variance in the outcome variable (maternal well-being), $F(2,49) = 6.72$, $p = .003$, *sig.*

The significant regression model explained 21.5% ($R^2 = .215$) of the variance of the outcome variable (maternal well-being). In this regression, it had an adjusted $R^2 = .183$ meaning that the regression model would account for 18.3 % of the variability in the outcome variable (maternal well-being) at the level of the population. This shows a shrinkage of (R^2 - *adjusted* R^2) = 3.2% in the last model, which indicates that the model would generalize well to the population

An examination of the table of coefficients (see Table 14) provides the standardized beta weights, which describe the relationship between each predictor and the outcome variable (maternal well-being). The sign of the standardized beta weights indicates the nature of the relationship. The regression model showed that the strongest predictor of maternal well-being was locus of control. The t-test reveals that locus of control was a significant, positive medium predictor of maternal well-being; $b = .15$, $\beta = .30$, $t(48) = 2.28$, $p = .03$. This means that participants with higher locus of control tend to score higher on well-being. In other words, increased external locus of control yielded lower levels of maternal well-being levels. This finding confirms *hypotheses 4a and 4b.*

In addition, the table of coefficients (Table 14) reveals that the second strongest predictor of the outcome variable (maternal well-being) was distraction coping. The t-test reveals that distraction coping style was a significant, positive small to medium predictor of maternal well-being; b = .38, β = .28, t(48) = 2.14, p = .04. The relationship between distraction coping and maternal well-being is a positive one, indicating that as distraction coping increases, scores on well-being increases. Stated differently, an increased use of distraction coping strategy yields lower levels of maternal well-being. This finding partially confirms *hypothesis 2b*.

Consequently, the strongest predictors (locus of control and distraction coping) were almost equally strong at predicting the outcome variable maternal well-being than the remaining predictor variables (empowerment {family, service system, and community/political levels}, coping styles {engagement, disengagement, and cognitive reframing}, knowledge about ASD, social desirability, social support {overall, formal, and informal}, and child behavioral problems), which did not appear to be significant predictors of maternal well-being. These findings indicated that *hypotheses 1, 2a, 2b(partially), 3(a&b), 5, and 6* were not supported. The variables locus of control and distraction coping were significantly correlated to maternal well-being in the zero order correlation matrix. They turned out to be a significant predictor of maternal well-being. This demonstrates confirmatory results.

The predictor variables disengagement coping and social desirability were significantly correlated to the outcome variable maternal well-being in the zero order correlation matrix. However, in the table of coefficients, disengagement coping and social desirability turned out to not significantly predict maternal well-being. This indicates a possible suppressor effect.

H. Regression Analysis: Predictors of Maternal Well-Being While Controlling for Effects of Covariates[4]

A hierarchical regression with two steps was carried out in order to assess the predictors of maternal well-being upon controlling for the effect of covariates (child's age, gender, maternal educational level, marital status, maternal age, and maternal employment). In this analysis, the covariates (child's age, gender, maternal educational level, marital status, maternal age, and maternal employment) were entered through the forced entry method, predictor variables (child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, locus of control, and social desirability) were entered through the backward method, because this research is new in the Lebanese context, and hence it is exploratory.

1. Influential Cases. A residuals statistics table was produced to examine Cook's Distances for influential cases. In the current analysis, Cook's Distances ranged between .00 and .83. This indicated that there were no influential cases in the data.

2. Outliers in the Solution. An observation of the standard residuals revealed no cases above ±3.29 (scores ranged between -1.96 and 2.05).

3. Statistical Assumptions for Parametric Testing.

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[4] Household income was dropped from the analysis because it had a high number of missing values (11.1%).

a. Variable types. All variables included in this analysis were scaled and dichotomous. Hence, the assumption of variable types for this analysis was met.

b. Multicollinearity. In the current analysis, the coefficients table produced revealed that VIF values were below 10, indicating that multicollinearity is not a problem.

c. Independent errors. In this analysis, the value of Durbin Watson was 2.09, which satisfies the requirements for independence of errors.

d. Normally distributed errors. The histogram demonstrated that the distribution of residuals is not significantly different from that of a normal distribution, displaying a bell shaped curve. Accordingly, the normality of residuals was met (see Figure 3).

e. Homoscedasticity. In this analysis, homoscedasticity can be inferred since the scatterplot is a random array of dots. Scores do not build up on one side of the graph. Therefore, the assumption of homoscedasticity was met (see Figure 4).

f. Normality. As stated earlier, normality was achieved for the predictor variables (maternal age, child behavioral problems, empowerment, social desirability, locus of control, knowledge about ASD, coping styles {engagement, distraction, and cognitive reframing}, overall social support, and informal social support). However, child age, time spent with child, disengagement coping, and formal social support did not meet the assumption of normality.

g. Ratio of cases to IVs. As stated earlier, sample size is small (N=54), thus does not satisfy the requirements for ratio of cases to IVs.

4. Hierarchical Regression Main Analysis

Table 15 shows the F test of the regression model in which the covariates (child's age, gender, maternal educational level, marital status, maternal age, and maternal employment) were force entered. The first model had a nonsignificant F-ratio equal to $F(6,36) = .40$, $p = .87$, *ns*, which indicates that adding the covariates (child's age, gender, maternal educational level, marital status, maternal age, and maternal employment) did not improve the ability to predict maternal well-being. This shows that the model created doesn't do a better job of predicting maternal well-being than the mean.

Despite the fact that the regression model was not significant, it explained 6.2% ($R^2 = .062$) of the variance of the outcome variable (maternal well-being). This regression had an adjusted $R^2 = -.094$, meaning that the regression model would account for 0% of the variability in the outcome maternal well-being at the level of the population. This also indicates that the regression model would not generalize well to the population. (See Table 15)

Although the regression model is not significant, an examination of the table of coefficients (see Table 16) reveals that the predictor variables (empowerment {family, service system, and community/political levels}, coping styles {engagement, disengagement, and cognitive reframing}, autism knowledge, social desirability, social support {overall, formal, and informal}, and child behavioral problems, and locus of control), were excluded by SPSS from the model since they weren't significant predictors. The t-test reveals that the covariates marital status ($b = 2.47$, $\beta = .14$, $t(36) = .82$, $p = .42$), education level ($b = .72$, $\beta = .07$, $t(36) = .41$, $p = .69$), employment status ($b = .00$, $\beta = .00$, $t(36) = .00$, $p = 1.0$), maternal age ($b = -.09$, $\beta = -.11$, $t(36) = -.58$, $p = .57$), child age ($b = -.19$, $\beta = -.15$, $t(36) = -.78$, $p = .44$), and child gender ($b = -.65$, $\beta = -.05$, $t(36) = -.32$, $p = .75$) were not significant predictors of maternal well-being.

I. Comparing Maternal Responses at Pre- and Posttest

In exploring the second aim of the current analysis, differences between maternal responses at pre- and posttest measures were examined in order to assess the efficacy of the training lecture. Following are the results.

1. Interval data. An assumption of t-test is for the outcome variable to be measured at an interval level. In this case the assumption was met since the outcome variable (well-being) was measured on a scale from 0 to 3.

2. Independence of Scores. The scores collected on the outcome variable should be independent of each other. That is, results provided by each participant should be unrelated and unaffected by results of other participants. Since there was no test to check whether this assumption was test, it was therefore assumed since the experimenter ensured, to the extent possible, that participants did not communicate with each other while filling the scales. Hence, all data points collected on the outcome variable (maternal well-being) were assumed to be independent of each other.

3. Normality. Normality of the difference between pre- and posttest scores on the variables (knowledge about ASD, empowerment {family, service system, and community/political}, and well-being) was tested by examining the Shapiro-Wilk test. The test indicated that the variables knowledge about ASD, $W(33) = .96$, $p = .195$, empowerment (family subscale) $W(33) = .97$, $p = .375$, empowerment (service system subscale), $W(33) = .95$, $p = .179$, empowerment (community/political subscale), $W(33) = .97$, $p = .403$, and well-being, $W(33) = .95$, $p = .186$, were normally distributed.

4. Main Analysis. Findings of the paired samples t-test demonstrated that the training did not have a positive effect on knowledge about ASD, empowerment, and well-being levels. These results will be discussed further in the Discussion and Limitation sections. Details of the findings are following:

Since the assumption of normality was met across the variables knowledge about ASD, empowerment, and well-being, a paired samples t-test was conducted in order to examine differences on the previously listed variables (see Table 17)

On average, participants exhibited similar levels of empowerment (family subscale) at pretest (*M* = 45.55, *SD* = 5.71), and posttest (*M* = 45.15, *SD* = 5.80). The t-test revealed that the difference is non-significant; *t*(32) = .44, *p* = .664. Similarly, participants exhibited similar levels of empowerment (service system subscale) at pretest (*M* = 46.76, *SD* = 6.27), compared to posttest (*M* = 46.94, *SD* = 6.33), which was revealed non-significant through the t-test; *t*(32) = -.16, *p* = .874. On average, participants revealed lower levels of empowerment (community/political) at pretest (*M* = 32.42, *SD* = 4.59), compared to scores on posttest (*M* = 33.21, *SD* = 5.38). This difference, however, was not found significant on the t-test; *t*(32) = -.82, *p* = .418. Similarly, on average, participants had lower levels of knowledge about ASD at pretest (*M* = 7.24, *SD* = 6.49), compared to scores at posttest (*M* = 9.27, *SD* = 7.06). Nevertheless, the difference did not emerge as significant according to the t-test; *t*(32) = -1.56, *p* = .129. Unexpectedly, on average, participants had higher levels of well-being at pretest (*M* = 14.21, *SD* = 6.11), compared to results on posttest (*M* = 12.88, *SD* = 4.30). This difference, however, was non-significant according to the t-test; *t*(32) = 1.66, *p* = .107. Hence, the paired samples t-test reveals that the variables knowledge about ASD, empowerment, and well-being did not improve at posttest. Therefore, *hypotheses 9* and *10* were not confirmed.

CHAPTER VIII

DISCUSSION

The primary aim of this study was to determine the predictors of well-being among mothers of children with autism in Lebanon, through systematically replicating Obeid and Daou's (2015) study. A secondary aim was to examine the efficacy of a training lecture about ASD (Gillespie-Lynch et al., 2015; Obeid et al., 2015), in enhancing maternal knowledge about ASD, empowerment, and well-being. The training lecture provided knowledge about autism characteristics, in addition to ABA techniques. Nevertheless, it is important to note that the results of these findings cannot be generalized to mothers of children with autism across Lebanon due to the small sample size. Rather, they reflect the particular sample of the study. Since it is the first time this training is implemented, the findings can provide preliminary information about the variables of interest and could be used for future research on enhancing maternal well-being in mothers of children with autism. As mentioned earlier, the primary aim of the study was to examine the predictors (child behavioral problems, coping styles, knowledge about ASD, social support, empowerment, locus of control, and social desirability) of the outcome variable (maternal well-being). The secondary aim pertained to examining differences on variables of interest (knowledge about ASD, empowerment, and maternal well-being) between the pre- and posttest measures of mothers of children with autism.

A. Interpretation of the Results

1. Interpretation of the Empirical Findings

Findings of pretest analysis demonstrated that among the predictor variables of interest, the only two significant predictors of maternal well-being were locus of control and distraction coping. Upon comparing pre- and posttest measures, it was evident that after two to four weeks, mothers of children with ASD did not improve on knowledge about ASD, empowerment, and well-being.

At pretest, locus of control was found to be a positive significant correlate and predictor of maternal well-being levels. Increased levels of external locus of control predicted poorer levels of well-being, and vice versa. This finding corroborated findings in the literature, which indicate that locus of control is one of the robust predictors of maternal well-being (Lloyd & Hastings, 2009; Siman-Tov & Kaniell, 2011), particularly in this cultural context (Cheng et al., 2013). Increased levels of external locus of control in the current study's sample were not only reflected quantitatively in the data, but also qualitatively. For instance, two mothers who completed the pretest, indicated under the "others" section that the causes of autism include "God's will" and "inevitable fate". Additionally, mothers reported several anecdotal statements that reflect an external locus of control in the sessions: "It is all in God's hands", "This is what God wants and we have to accept it", "This is our fate, what can we do", and many others.

In examining coping styles, only distraction coping emerged as a significant correlate and predictor of poorer levels of maternal well-being. Mothers who engaged in distraction coping used humor when talking about the diagnosis, blamed themselves for what happened, and vented out their negative emotions. Several of these coping styles were confirmed by what the mothers reported anecdotally, such as "I make fun when I talk about it", "We are very tired and helpless", and "Because I was grieving during pregnancy, my child now has autism". These findings were also demonstrated in a study by Smith et al (2008), whereby mothers who used emotion-focused coping reported higher degrees of depression and anger. On the other hand, disengagement coping did not emerge as a significant predictor of maternal well-being, which was inconsistent with the literature (Smith et al., 2008). It is noteworthy that disengagement coping was a correlate of maternal well-being, whereby increased use of disengagement coping was correlated with decreased maternal well-being levels. Similarly, engagement and cognitive reframing coping strategies did not emerge as predictors of maternal well-being in this study. Problem-focused coping strategies (engagement and cognitive reframing) were not correlated with maternal well-being, inconsistent with the majority of the findings in the literature (Benson, 2014; Pozo et al., 2014). Nevertheless, some studies demonstrated that problem-focused coping did not predict decreased levels of stress (Dabrowska & Pisula, 2010) or increased levels of maternal well-being (Obeid & Daou, 2015) in a sample of mothers of children with autism.

It could be argued that coping styles, both problem-focused and emotion-focused, may be ineffective in decreasing the impact of stressful events due to the unpredictable nature of child behavioral problems in children with autism (Abbeduto et al., 2004). Another explanation could be that personality more strongly predicts coping in stressed samples. The use of more emotion-focused versus problem-focused coping styles is highly determined by personality traits and differs from one person to another (Connor-Smith & Flachsbart, 2007). It is worth noting that through observation in sessions, several mothers expressed their denial of the diagnosis, an aspect of disengagement coping. They reiterated the following statement: "My child does not have autism, rather autism traits". It was evident that many of the mothers struggled with the diagnosis. One should note, however, that this “confusion” might also be reinforced by the limited autism supports and resources available in Lebanon, even among medical professionals and pediatricians who are not skilled in identifying whether the behavior displayed by toddlers or young children indeed calls for autism screening. Results could also be explained by the very small sample size, which limited the significance power needed and the generalizability of the results.

As hypothesized, social desirability was a correlate of maternal well-being, with higher levels of social desirability associated with higher levels of maternal well-being. This finding was consistent with the literature (Todaro et al., 2005; as cited in van de Mortel, 2008). This finding could elucidate, according to Fisher & Katz (2000), that it is important to the mothers to appear healthier than they actually are. Contrary to what was hypothesized, social desirability was not correlated with coping styles. Nevertheless, this finding was replicated in studies examining coping styles and social desirability (Gibbons, 2010; Meyer, 2001).

Child behavioral problems did not emerge as a predictor or correlate of maternal well-being in the current sample. This finding was not replicated in the study by Obeid and Daou (2015). In fact, Obeid and Daou found that child behavioral problems did not predict maternal well-being but was correlated with it. Additionally, studies have consistently shown that child behavioral problems are predictors of maternal stress and decreased maternal well-being (Jones et al., 2014). This could be explained by the fact that the extensiveness and frequency of the child behavioral problems, as suggested by Estes et al. (2009; 2013) and Minnes et al. (2014), were not severe in this sample. Another explanation might be that participants engaged in a socially desirable mode of responding, particularly in levels of well-being. In this sample, participants reported a higher need for social approval and findings revealed a correlation between social desirability and levels of maternal well-being. Hence, this might be a valid reason, in addition to the small sample size, as to why child behavioral problems did not predict levels of maternal well-being.

Similarly, social support, whether formal or informal, did not significantly predict well-being levels. This finding was not consistent with results in the literature (Bromley et al., 2004; Pozo et al., 2014). However, some studies did demonstrate an absence of a correlation between social support and maternal well-being, indicating that the quality of the interaction is what determines whether one form of social support is more helpful than another (Raikes & Thompson, 2005; Thompson, 1995). Similarly, two theses conducted in the Lebanese context examining social support among mothers of children with autism (Obeid & Daou, 2015) and breast cancer survivors (Ghorayeb, 2010), demonstrated that social support was not a predictor of well-being or quality of life. Although results should be interpreted with caution and cannot be generalized to the population due to the small sample sizes across the three research studies, this may be telling about the effectiveness of social support in enhancing well-being levels. Given the chronicity of autism, it requires a lot of efforts and interventions that are well-delivered, individualized, and consistent (Department of Health and Human Services, 1999; Jacobson, 2000; Rosenwasser & Axelrod, 2001; reviewed in Daou, 2014). For instance, it was reported anecdotally in every research session for this study that mothers were in need of financial support. Services for children with autism that are available in Lebanon are very expensive and scarce, and parents lack support and resources (Daou, 2014; Obeid & Daou, 2015; Obeid et al., 2015). Accordingly, this finding sheds light on the importance of financial support in addressing maternal concerns in Lebanon. Additionally, some mothers who reported that they lacked support addressed it in the context of support groups. For instance, several mothers expressed the need for support groups that would allow them to vent, exchange personal experiences, and discuss common concerns. The scale used for the purpose of this study did not tap upon such forms of support, and hence could explain why social support was not a significant predictor of well-being levels.

With regards to knowledge about ASD, and contrary to what was hypothesized, it did not emerge as a significant predictor or correlate of maternal well-being. This finding is inconsistent with findings in the literature (Gillespie-Lynch et al., 2015; Obeid et al., 2015). It is evident that mothers of children with ASD in this sample may have had a certain level of basic knowledge about ASD prior to the training, since the mothers who were approached in this study were enrolled in special needs centers that met particular standards. Some of the centers already provided the mothers with their own trainings. Accordingly, the knowledge provided in the training, separate from the interventions section, may have been knowledge that they already knew. Another interpretation is that mothers of children with autism in Lebanon face overwhelming difficulties in managing the child behavioral problems and other autism-related symptoms. Hence, a basic understanding of autism is not sufficient enough for them. Rather, in a country with scarce resources, they are in need of more “practical knowledge” that would teach them hands-on techniques with the child. Although a whole section of the training was dedicated for the purpose of ABA, it was not assessed by the knowledge about ASD scale.

Unlike what was hypothesized, empowerment did not emerge as a significant predictor or correlate of maternal well-being. This finding was inconsistent with research on empowerment and maternal well-being (Simon et al. 2005; Weiss et al., 2012). Nevertheless, Gabovitch and Curtin (2009) demonstrated that parents receiving services from the community report a greater level of empowerment in dealing with challenges facing their children. Given that mothers of children with ASD in Lebanon rarely receive services from the community, it is conceivable that they do not feel empowered enough. It could also be argued that the scale used to assess for empowerment is not specific to the training itself, rather a general empowerment scale across the family, the service system, and the community or political levels. Again, given the scarcity of services and resources in the community, level of empowerment might have been impacted and thus did not emerge as a predictor of maternal well-being.

Comparison of pre- and posttest measures revealed that the training did not have an impact on knowledge about ASD, empowerment, and maternal well-being. This finding was inconsistent with the literature (Banach et al., 2010; Gillespie-Lynch et al., 2015). One of the primary explanations is the high rate of attrition at posttest (39.9%), from an originally very small sample size (N=54). Since knowledge about ASD did not hit the influential point, it was expected that well-being levels did not improve as well. Empowerment, as mentioned earlier, was assessed at a global level, rather than at the level of the mothers’ interaction with their children with autism. Accordingly, any change might have been diffused across the other levels of empowerment (i.e. service system and community/political). Another explanation could be that this training was useful for some mothers but not others. Mothers of children with ASD who participated in this study had their children enrolled in organizations and schools that accommodate children with autism. Those organizations might have provided workshops/trainings educating mothers about

ASD. It is also conceivable that the mothers had taken it upon themselves to educate themselves about ASD, through internet browsing, for example. This might explain how participating mothers had good baseline knowledge about ASD characteristics, and hence the training may not have added considerably to it. Accordingly, the training may have been more beneficial to mothers who had only recently received the diagnosis of autism or who had not carried out their own research or received trainings about autism from organizations or schools.

2. Interpretation of the Anecdotal Findings

Anecdotal findings in this study are essential for providing meaning to the outcome results. This is true because the experimenter witnessed firsthand that the empirical findings failed to represent the dynamics and anecdotal notes expressed by the mothers during the training sessions. These anecdotes help shed light on the particulars of the mothers' experiences, in terms of understanding their perceptions of the children's condition and their competencies. Support groups for mothers of children with autism in Lebanon, as reported by the mothers, are scarce. Mothers reported anecdotally that aside from the training material, one of the main benefits that they gained from this training is the ability to voice their concerns and realize that they are not "in this battle alone". The diversity of children's ages in the groups provided the mothers with the opportunity to ask how others managed certain developmental milestones (e.g. toilet training, puberty). This component of the training was reiterated by the majority of the mothers, which is a significant input in the Lebanese context. Anecdotal findings emerged in different aspects of this study, including the recruitment challenges, dynamics between participants in the sessions, and attrition.

a- Recruitment challenges. In terms of recruitment, one of the main issues that should be highlighted is the laborious and straining process of data collection. The resistance in the community towards research was quite remarkable, as it underscored the absence of a research culture and a belief on behalf of individuals that research, in general, is not beneficial. It is worth mentioning that the resistance in the community towards research was particularly observed by professionals in the field of mental health, including physicians, psychologists, counselors, and school directors working with children with special needs. Some professionals strongly rejected the training for reasons that included having their own on-site trainings, and not wanting to overwhelm the mothers with research. Other reasons could not be accurately determined since the majority of those contacted by phone initially, and upon consent through email, did not respond. Some professionals masked their rejection behind unrealistic concerns related to the study. For example, one of the professionals expressed a concern regarding confidentiality, despite being reassured that confidentiality would be highly protected. Other professionals set several recruitment barriers that delayed the process of recruitment, such as taking so much time to respond to emails/phone calls, requesting several meetings prior to conducting the sessions, restricting available timings for providing the training, and limiting the timing available for the sessions. Given this, out of a total of 39 contacted schools and organizations, only 4 organizations and a school (12.8% response rate) accepted to participate. This speaks to the lack of cooperativeness among professionals, at times coming even from the same institution with which this research is affiliated.

b- Dynamics between participants in the sessions. One of the remarkable issues pertains to the dynamics that occurred between participants during research sessions. These dynamics shed light on the influence that some mothers could exert on others in terms of knowledge, experience, and confidence in personal capacity in managing autism. For instance, a mother came across as the “leader” in one of the sessions. It was interesting to observe how she strongly influenced other mothers into considering tapering all medication of their children with autism. This demonstrated a lack of adequate knowledge regarding the appropriate course of action that would result in the child’s best interest. Another mother, held so much hate and anger towards mental health professionals in Lebanon, bad mouthing several of the prominent figures in the field for inadequate skills in understanding and improving the child’s behavioral problems. When the topic of vaccines was addressed, she verbally “attacked” another woman for deciding on giving her children the vaccines, strongly indicating that she refuses to give the vaccines to any of her other children. Following, other mothers expressed their uncertainty regarding this matter and contemplated their future decision based on this mother’s feedback. The resistance to change was evident in the posttest, whereby a significant number of mothers (18.5%) continued to indicate that vaccines cause autism. Additionally, 3.7% of mothers indicated that negative parenting was a cause of autism, while 9.3% of the mothers indicated that there were no causes for autism. The resistance to change strongly held beliefs could explain the reason why knowledge about ASD did not significantly increase at posttest.

Parents of children with ASD continue to attempt finding an explanation for the child’s atypical behavior, especially in the absence of confirmed causes of autism (Altiere & von Kluge, 2009). The observed resistance to change could be explained by the fact that attributing the cause of autism to vaccines, for example, might offer answers. It was evident in the sessions that the absence of a defined cause for autism ignites feelings of guilt and responsibility in the mothers, which they found difficult to manage. This explanation could be viable for the mothers in this sample, as it fits well with their external locus of control.

Additionally, during several sessions, the mothers' frustration and exhaustion were so overwhelming, that it was difficult for them to listen to the investigator's explanation and suggestions. Some mothers needed the opportunity to express their overwhelming negative feelings, primarily their feelings of frustration and helplessness. This brings about the concept of learned helplessness in mothers of children with ASD (Dunn et al., 2001), which is also consistent with their external locus of control. The mothers have been living with this difficulty for years without the kind of support that they needed. Some parents did not know about the intervention that yields good results, and others did not have the resources to attain it. For instance, children receiving ABA-based interventions significantly improved in comparison to children who only received eclectic 'treatment as usual' (Keenan et al., 2015). Moreover, even if they did know, they could not distinguish good professionals for pseudo-professionals in the field, a phenomenon that is highly present in Lebanon. An example was when the president of one of the organizations involved in this study attributed aggressive behaviors in children to the lunar cycle. Consequently, the available interventionists are not well-qualified, and teasing apart the level of expertise is very difficult for the parents. This is one reason why mothers are stressed and their children's skills and behavioral outcomes are not improving. Learned helplessness appeared also in the mothers' difficulties in applying the techniques that were presented in the first session of the training. Failure to change behavior was attributed to lack of response on behalf of the child. The mothers appeared to be very distressed and exhausted, expressing a desire for immediate change. They lack the consistent resources, patience, and perseverance that bring about change in the child's behavior over time. The elevated levels of distress and hopelessness observed in the sessions did not emerge in the quantitative data of the research although it was prominent in the pre- and posttest sessions. Clearly, what was needed exceeded the scope of what attending a single lecture could accomplish.

c- Attrition. Aside from the recruitment difficulties, attrition was another challenge faced in this study. Attrition rate at posttest was almost 39%, which is relatively high compared to the small sample size. Understanding the reasons behind the high rate of drop out was challenging due to the lack of direct contact with the mothers at the organizations where the training was provided. However, it could be explained that some mothers may have experienced "disappointment" after attending the first session. Three mothers at different sites stated at the end of the first session: "We are looking forward to when they would invent a pill that cures autism." This speaks to the extent of despair these mothers are experiencing. They are looking for an intervention that is farfetched. ABA intervention, when properly and consistently provided, would lead to positive outcomes and results that would be akin to the "magic pill". The problem continues to be the lack of funding and formal forms of support from the Lebanese government and insurance companies. ABA is an expensive intervention that is not easily affordable without such external funding.

B. Limitations of the Study

A major limitation of this study was the size of ratio of case to IVs. Indeed, various recruitment difficulties resulted in a small sample size. As mentioned earlier, around 39 schools and organizations were contacted to invite participants to the training at AUB, in addition to 5 of the primary investigator's contacts. However, only 1 school and 1 agency agreed to collaborate, resulting in a total of 14 mothers of children with autism. The second recruitment strategy yielded a participation rate of between 40 and 50% of parents of children enrolled in each agency, resulting in a total of 40 participants from 4 organizations. The investigator of this study conducted regular phone call follow-ups to make sure that the emails were well received, and to address any concerns that the gatekeepers may have regarding the study. Difficulties in the recruitment stage (described earlier) resulted in a small sample size, which is a limitation of the current study.

Another main limitation of this study was fatigue as a result of the long battery of questionnaires. For instance, most of the mothers reported that it was big, complicated, and tiring to complete prior to the training. This justified the missing values in the study, although they didn’t significantly affect the results. Nevertheless, it could be argued that the presence of the investigator as the participants were filling the scales provided the mothers with the opportunity to ask for clarifications, and thus reduced the number of missing values that could have resulted otherwise. This, however, did not deny the fact that some mothers in the session chose to skip items and scales, despite being pointed out to them by the investigator. Others refused to fill the scales entirely, indicating that they were only present for the training. Moreover, mothers were not fully motivated to fill the scales, which was evident during the sessions. At several instances, the investigator had to return the questionnaire to the mother and ask her to fill the missing data, which consumed both time and effort. Another reason might be linked to the format of the questionnaire; whereby some mothers completed one side of the papers but missed the other. As suggested by Obeid and Daou (2015), making a more interactive design to the questionnaires, such as increasing the distance between one item and another and increasing the font size, may ensure that items will not be missed in future research.

Additionally, there is an absence of a research culture within the Lebanese context, an issue that was also highlighted by Obeid and Daou (2015). In their study, there is very limited collaboration from schools and agencies that accommodate children with special needs. Several mothers communicated to the investigator of the current study that data collected through surveys is not beneficial to them in any way, as it does not translate into action or provide them with practical solutions to their daily struggles. Very few organizations expressed their interest in the results of the study, and only one mother requested to be contacted after the results are out to get a summary of the findings. This reflected the extent to which Lebanon lacks research studies addressing mothers of children with disabilities in general, and with autism in particular. Some organizations, however, were very welcoming and motivated to collaborate with the investigators. Response rates were the highest among those organizations. A few of them asked to be involved in similar future research projects, requested more sessions, and even asked for future collaboration. Nevertheless, it remained unclear whether their interest was due to their internal motivation to be involved in research in general, or because parents benefited from the training and from the presence of an individual who gave them a listening ear and provided professional advice.

Another limitation might have been related to attrition. The response rate during the posttest sessions was 33 participants (61.1%). Reasons for attrition were not known, however in research studies that extend to more than one session, loss of subjects is always a reason for concern (Kazdin, 2003). Assumptions of reasons for attrition were discussed earlier.

In the present study, 19 (35.2%) mothers indicated that their child had “no disability”, which was also evident in the study by Obeid and Daou (2015). Two interpretations may be posed at this stage. First, the mothers may have misinterpreted the term “disability” to be only physical. This may be the case since throughout the training, they indicated that their child did have autism, proving that they were aware of the diagnosis. Those who indicated a “disability” wrote different comorbid conditions that the child may have had, such as Attention Deficit/Hyperactivity Disorder (ADHD), Specific Learning Disability, epilepsy, or what one mother referred to as “Emergency Medical Condition (EMC)”. Another interpretation would be that the mothers may have been struggling with their child’s condition, as described earlier, and thus found it difficult to adapt to the current condition.

Another limitation of this study was the time restrictions that were set by certain sites where the study was provided, resulting in less time for the mothers to reflect and pose questions regarding the information being provided. One of the main goals of this training was to provide the mothers with the opportunity to gain skills in behavioral techniques, share personal experiences, voice out concerns regarding their children, and benefit from experiences of other mothers. Due to time restrictions set by a few organizations, it was not possible for some mothers to address all their concerns. However, this was not a serious limitation in this study because the mothers were provided with the opportunity to address their concerns during the posttest session.

Another limitation of the study was that the pre- and posttest measures did not assess knowledge of intervention when that was the aspect that particularly evoked an interest in the audience. Additionally, although Gillespie-Lynch et al. (2015) indicated that the training did improve knowledge about ASD among college students, a population that is distant from those impacted directly by autism. Very few, if any, were directly impacted by autism. Hence, learning more about autism would be expected to enhance their knowledge about ASD and reduce stigma. However, upon providing this training to mothers of children with autism, it is no longer a question of stigma. Conceivably, knowing more about autism, particularly about autism characteristics and not interventions, rarely resonates to them. The current study looked at knowledge globally. It was clear from the anecdotal data that parents were more interactive when it came to the ABA part of the training. They seemed more resistant to the general information about autism. Maternal responses and feedback in sessions, and the fact that there was no change happening, suggested clearly that learning more about autism was not what they needed. What they needed was to learn more how to *cope* with autism. Coping with autism emphasizes the importance of *intervention*. Thus, the limitation of this study was that it did not assess knowledge of intervention and how mothers needed to cope with daily struggles. This also applies to empowerment. Empowerment was assessed globally, rather than specifically to how the training may have, or may not, had empowered the mothers. This is another limitation to the study, since the scale may not have served the purpose of assessing the construct of empowerment as envisioned by the investigators of the study.

Another possible limitation of the study is biases to internal validity. Different combinations of mothers who have different conditioning histories in sessions may have also affected their interactions with one another, and ultimately the results. Another limitation may be related to construct validity, whereby participants in this study were sitting relatively close to one another. Being able to observe others' responses might have influenced the mothers into responding in a favorable matter (Kazdin, 2003). Although the experimenter tried to control for this to the extent possible, it cannot be ruled out completely. However, these limitations could not have been controlled for.

Finally, this study was a quasi-experimental research design with a nonexperimental component. The nature of this study might have posed a limitation since it only allowed the investigators to infer predictive relationships among variables through correlation and regression analyses. Causal inferences couldn't have be inferred (Christensen et al., 2011).

C. Future Directions

An important recommendation for future researchers who would be invested in building on the current study and working with parents of children with autism is having a larger sample of mothers. This could be achieved through the dedication of greater time for the recruitment phase of the study. Despite the fact that the recruitment phase of the current study took approximately 3 months, one could assume that this population is difficult to recruit from, and hence would need more time than other populations, such as university students. Accordingly, dedicating more time and contacting as many organizations, schools, and even clinics as possible across Lebanon may be helpful.

Another limitation of the study pertained to fatigue associated with the size of the battery of questionnaires. A recommendation for future research would be to limit the number of variables assessed in order not to overwhelm the mothers with a large number of surveys. Fatigue would negatively influence the mothers' responses and increase the likelihood of missing values. Accordingly, it would be ideal to have a short battery of questionnaires in order to maintain the mothers' concentration and motivation. Moreover, providing the mothers with more breaks throughout the training may be helpful in avoiding fatigue.

Additionally, it is important to attune the training to the mothers' needs, to the extent possible. One of the goals of this training was to explore the mothers' needs, whereby it was indicated that some mothers do have the adequate knowledge about ASD but are in need of more networking, recreational areas that are sensitive to the needs of children with autism (e.g. intensity of sounds and lights), and more frequent maternal support groups. Other mothers' needs focused more on the financial aspect and how they lost hope in the system due to the absence of qualified interventionists and affordable services. Future researchers may need to focus on how it would be possible, given the hurdles in the community, to provide access to services by the majority of the population. This may be a difficult task, but advocating for the rights of families of children with autism is a major responsibility for professionals working in the field. Mothers are in need of practical solutions to their problems through the provision of the appropriate resources.

Moreover, future studies may also look into religiosity in other samples examined in Lebanon. Several mothers in the current study attributed autism to "God's will", it would thus be interesting to explore how religiosity might relate to maternal locus of control, possibly affecting their experience of stress. Given that Connor-Smith and Flachsbart (2007) highlighted an association between personality characteristics and coping, future studies might benefit from examining the relationship between introversion, extroversion, and locus of control and how those variables might impact maternal experiences of stress.

More importantly, future research on the topic may benefit more from taking a qualitative approach to the matter. In a context where little resources are available for mothers, it is important to take a few steps back, listen to the mothers' needs, and tailor trainings accordingly. Evidently, the information that was presented in the sessions due to the interactive nature of the training did not mirror the results that were extracted from the scales. Accordingly, conducting a qualitative research is needed in order to look further into factors that are linked to maternal well-being (such as perception of what adequate social support is beneficial for them, their everyday struggles, how they cope with the struggles as they arise, etc.). Recordings of the sessions and running focus groups would provide valuable information as it would illustrate a well-rounded, contextual view of the mothers' experiences, perceptions, and needs.

Finally, equipping the mothers with adequate skills based on empirically validated interventions, through their increased engagement in psychoeducational training lectures, is a necessity in a community that lacks adequate resources. This recommendation is for future researchers and professionals who are invested in enhancing the well-being of both mothers and their children. With multiple exposures to ABA and its behavioral techniques, mothers will grasp the knowledge better and learn how the skills can be applied in different situations. This, in itself, is empowering for the mothers and will improve their knowledge about ASD, promoting their well-being and that of their children with ASD.

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Table 1

Reliability of the Scales and Subscales: Chronbach's alpha

Scales and Subscales	Chronbach's alpha	N of items
General Health Questionnaire (GHQ-12)	.83	12
The Indian Scale for Assessment of Autism (ISAA)	.88	40
Brief Social Desirability Scale (Marlowe-Crowne Form C)	.62	13
The Parent Locus of Control (PLOC- Short form revised)	.73	24
Brief COPE Scale		28
Engagement Subscale	.67	8
Cognitive Reframing	.26	6
Disengagement Subscale	.55	6
Distraction Subscale	.68	8
Family Empowerment Scale (FES)		34
Family Subscale	.80	12
Service System Subscale	.82	12
Community/Political Subscale	.70	10
Family Social Support Scale (FSS)	.80	18
Formal Support Subscale	.69	5
Informal Support Subscale	.76	13

Table 2a

Descriptive of the Sample Characteristics (Maternal Age)

Demographics	N	Minimum	Maximum	Mean	Std. Deviation
Maternal Age	51	20	52	38.75	6.997
Valid N (listwise)	51				

Table 2b

Descriptive of the Sample Characteristics (Child Age)

Demographics	N	Minimum	Maximum	Mean	Std. Deviation
Child Age	52	3	27	9.69	4.816
Valid N (listwise)	52				

Table 2c

Descriptive of the Sample Characteristics

		N	%
Child Gender	Male	41	75.9%
	Female	13	24.1%
Marital Status	Married	46	85.2%
	Divorced	2	3.7%
	Separated	7	2.9%
	Widowed	3	5.6%
Educational Level	Brevet	13	24.1%
	Baccalaureate	13	24.1%
	Bachelor’s Degree	18	33.3%
	Master’s Degree	6	11.1%
Household Income (in L.L.)	Less than 500,000	3	5.6%
	500,000- 750,000	4	7.4%
	750,000-1,500,000	14	25.9%
	1,500,000-3,000,000	9	16.7%
	3,000,000-7,500,000	11	20.4%
	7,500,000 or more	5	9.3%
Free time spent with child	Rarely	1	1.9%
	Sometimes	6	11.1%
	Frequently	14	25.9%
	Mostly	15	27.8%
	Always	17	31.5%
Employment Status	Part-Time	6	11.1%
	Full-Time	8	14.8%
	Unemployed	38	70.4%
Do any of your children have a disability	No	19	35.2%
	Yes	35	64.8%

Table 3
Scale Descriptives

	N	Minimum	Maximum	Mean	Std. Deviation
Social Desirability	54.00	3.00	13.00	8.78	2.17
Empowerment (Service System)	54.00	27.00	58.00	45.74	7.17
Empowerment (community/political)	54.00	18.00	44.00	32.17	5.47
Empowerment (Family)	54.00	24.00	58.00	45.22	6.70
Locus of Control	54.00	48.00	90.00	72.24	11.15
Knowledge about ASD	54.00	-7.00	22.00	7.04	6.28
Coping (Engagement)	54.00	14.00	31.00	24.48	3.89
Coping (Distraction)	54.00	8.00	25.00	16.89	4.08
Coping (Disengagement)	54.00	5.00	18.00	9.07	3.01
Coping (Cognitive Reframing)	54.00	14.00	24.00	19.94	2.48
Informal Social Support	53.00	4.00	56.00	33.09	12.42
Formal Social Support	53.00	.00	22.00	15.36	4.91
Overall Social Support	53.00	8.00	74.00	48.45	15.32
Well-Being	54.00	3.00	27.00	14.44	5.74
Child Behavioral Problems	52.00	44.00	158.00	100.13	21.84
Valid N (listwise)	48.00				

Table 4

Independent Sample T-test for Counterbalancing

	Version A		Version B		
	M	SD	M	SD	*t-test*
Child Behavioral Problems	100.86	21.30	98.77	23.40	.33
Empowerment (Family)	46.20	6.45	43.57	6.77	1.44
Empowerment (Service Syst.)	45.90	6.53	45.04	7.82	.43
Empowerment (Community/Political)	32.33	5.36	31.65	5.64	.45
Social Desirability	8.67	2.37	8.96	1.96	-.47
Locus of Control	72.73	10.55	71.91	12.24	.26
Knowledge about ASD	6.37	6.06	8.04	6.67	-.95
Coping (Distraction)	17.17	3.81	16.61	4.55	.49
Coping (Cognitive Reframing)	20.00	2.18	19.91	2.92	.12
Social Support (Informal)	33.76	11.93	31.96	13.40	.51
Social Support (Overall)	49.21	15.18	46.96	15.85	.50
Wellbeing	14.27	5.63	14.65	6.12	-.24

ns p > .05

Table 5
Mann-Whitney Test Statistic

	Coping (Engagement)	Coping (Disengagement)	Social Support (Formal)
Mann-Whitney U	311.50	245.00	300.50
Wilicoxon W	587.50	521.00	576.50
Z	-.60	-1.81	-.61

ns p > .05

Table 6

Independent Sample T-test for Counterbalancing

	Version A		Version B		
	M	SD	M	SD	*t-test*
Knowledge about ASD	6.06	5.97	8.35	6.94	-1.01
Empowerment (Family)	46.56	6.28	44.59	5.12	.99
Empowerment (Service Syst.)	46.87	6.23	46.64	6.51	.10
Empowerment (Community/Political)	32.19	4.66	32.64	4.65	-.28
Wellbeing	14.37	6.13	14.06	6.29	.90

ns p > .05

Table 7
Independent Sample T-test for Counterbalancing

	Version A		Version B		
	M	SD	M	SD	*t-test*
Knowledge about ASD	10.87	6.45	7.94	7.45	1.19
Empowerment (Family)	47.20	4.36	43.44	6.40	1.93
Empowerment (Service Syst.)	49.00	4.54	45.22	7.19	1.76
Empowerment (Community/Political)	33.93	5.67	32.61	5.20	.70
Wellbeing	13.46	4.44	12.39	4.24	.71

ns p > .05

Table 8

Pearson Correlation Matrix

	Wellbeing
Maternal Age	-.08
Educational Level	.04
Employment Status	.00
Marital Status	.20
Child’s Gender	.06
Child Behavioral Problems	.16
Empowerment (Family)	-.21
Empowerment (Service Syst.)	-.14
Empowerment (Community/Political)	-.02
Social Desirability	-.30*
Locus of Control	.38**
Knowledge about ASD	-.02
Coping (Engagement)	-.17
Coping (Cognitive Reframing)	-.04
Coping (Distraction)	.36**
Social Support	-.09
Social Support (Informal)	-.07

Table 9

Spearman's Rho Correlation Matrix

	Wellbeing
Child Age	-.22
Free time spent with child	.01
Coping (Disengagement)	.23*
Social Support (Formal)	-.09

*. Correlation is significant at the 0.05 level (1-tailed).

Table 10

Pearson Correlation Matrix Examining Social Desirability

	Social Desirability
Wellbeing	-.30*
Coping (Engagement)	.06
Coping (Cognitive Reframing)	.06
Coping (Distraction)	-.46**

*. Correlation is significant at the 0.05 level (1-tailed).
**. Correlation is significant at the 0.01 level (1-tailed).

Table 11

Spearman's Rho Examining Social Desirability

	Social Desirability
Coping (Disengagement)	-.17

Table 12

Partial Correlation Matrix

	Wellbeing
Child Behavioral Problems	.07
Empowerment (Family)	-.20
Empowerment (Service Syst.)	-.14
Empowerment (Community/Political)	-.09
Social Desirability	-.33*
Locus of Control	.38**
Knowledge about ASD	-.01
Coping (Engagement)	-.23
Coping (Cognitive Reframing)	-.03
Coping (Distraction)	.44**
Coping (Disengagment)	.26
Social Support (Overall)	-.09
Social Support (Formal)	-.09
Social Support (Informal)	-.08

*. Correlation is significant at the 0.05 level (1-tailed).
**. Correlation is significant at the 0.01 level (1-tailed).

Table 13

R, R Square, Adjusted R Square (Multiple Regression)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.575[a]	.331	.102	5.24709	.331	1.443	13	38	.185	
2	.575[b]	.330	.124	5.17989	.000	.008	1	38	.931	
3	.574[c]	.330	.146	5.11628	.000	.024	1	39	.879	
4	.573[d]	.328	.164	5.06038	-.002	.109	1	40	.743	
5	.570[e]	.325	.181	5.01089	-.003	.183	1	41	.671	
6	.567[f]	.321	.195	4.96589	-.004	.231	1	42	.633	
7	.563[g]	.317	.208	4.92537	-.004	.285	1	43	.596	
8	.555[h]	.308	.215	4.90313	-.009	.594	1	44	.445	
9	.541[i]	.292	.215	4.90380	-.016	1.012	1	45	.320	
10	.530[j]	.281	.220	4.89019	-.011	.740	1	46	.394	
11	.495[k]	.245	.198	4.95810	-.036	2.342	1	47	.133	
12	.464[l]	.215	.183	5.00260	-.030	1.884	1	48	.176	2.132

Table 14

Regression Parameters

Model		***B***	***SE B***	***β***
12	(Constant)	-2.70	4.86	
	Locus of Control	.15	.06	.30*
	Coping (Distraction)	.38	.18	.28*

Note: For model 12; $R^2 = .21$, $\Delta R^2 = .18$, * $p < .05$

Table 15

R, R Square, Adjusted R Square (Hierarchical Regression)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	.25	.06	-.09	5.52	.06	.40	6.00	36.00	.87	2.09

Table 16

Regression Parameters (Hierarchical Regression)

Model		***B***	***SE B***	***β***
1	(Constant)	16.28	7.99	
	Child Age	-.19	.24	-.15
	Maternal Age	-.09	.15	-.11
	Child Gender	-.65	2.03	-.05
	Marital Status	2.47	3.02	.14
	Educational Level	.72	.1.77	.07
	Employment Status	.00	2.04	.00

Note: For model 1; $R^2 = .06$, $\Delta R^2 = -.09$

Table 17

Paired Samples t-test

	Pretest		Posttest		
	M	SD	M	SD	*t-test*
Knowledge about ASD	7.24	6.49	9.27	7.06	-1.56
Empowerment (Family)	45.54	5.71	45.15	5.80	.44
Empowerment (Service Syst.)	46.75	6.27	46.94	6.33	-.16
Empowerment (Community/Political)	32.42	4.59	33.21	5.38	-.82
Wellbeing	14.21	6.12	12.88	4.30	1.66

Figure 1

Histogram of Standardized Residuals (Multiple Regression)

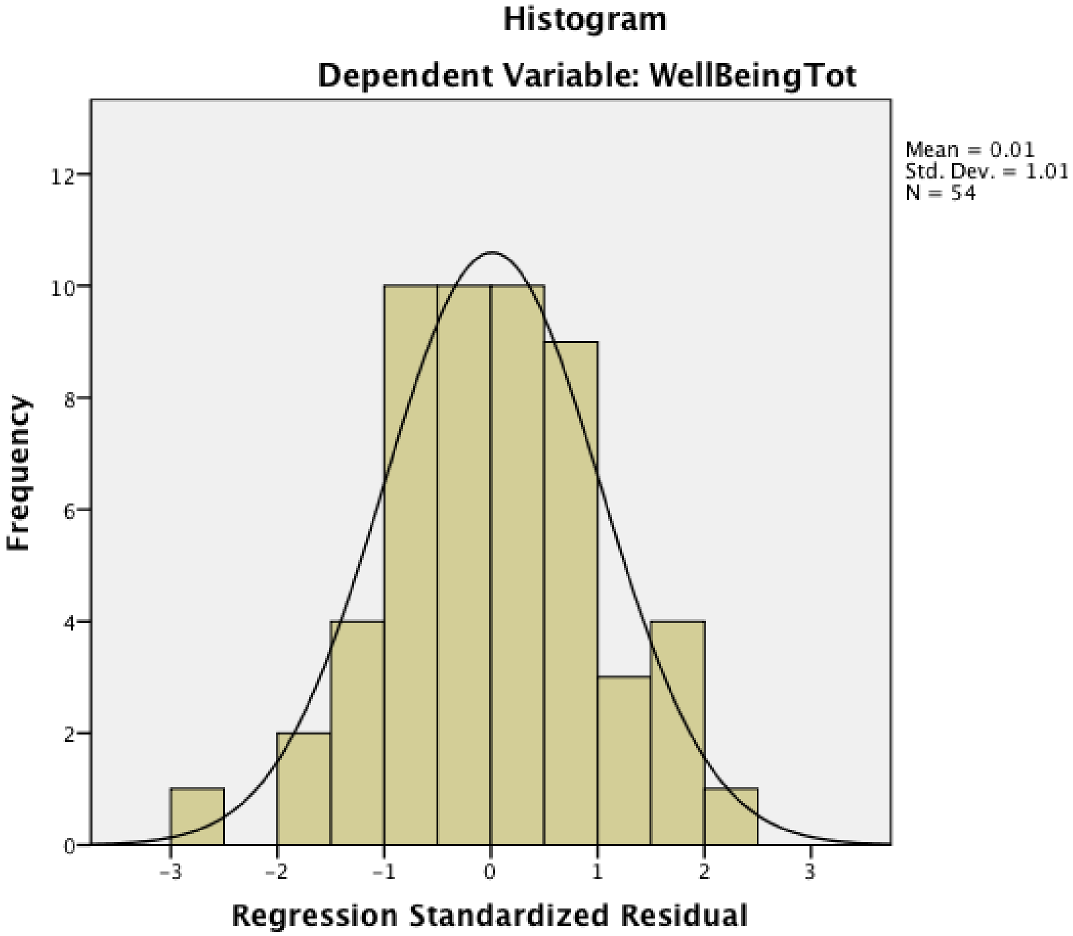


Figure 2

Scatterplot (Multiple Regression)

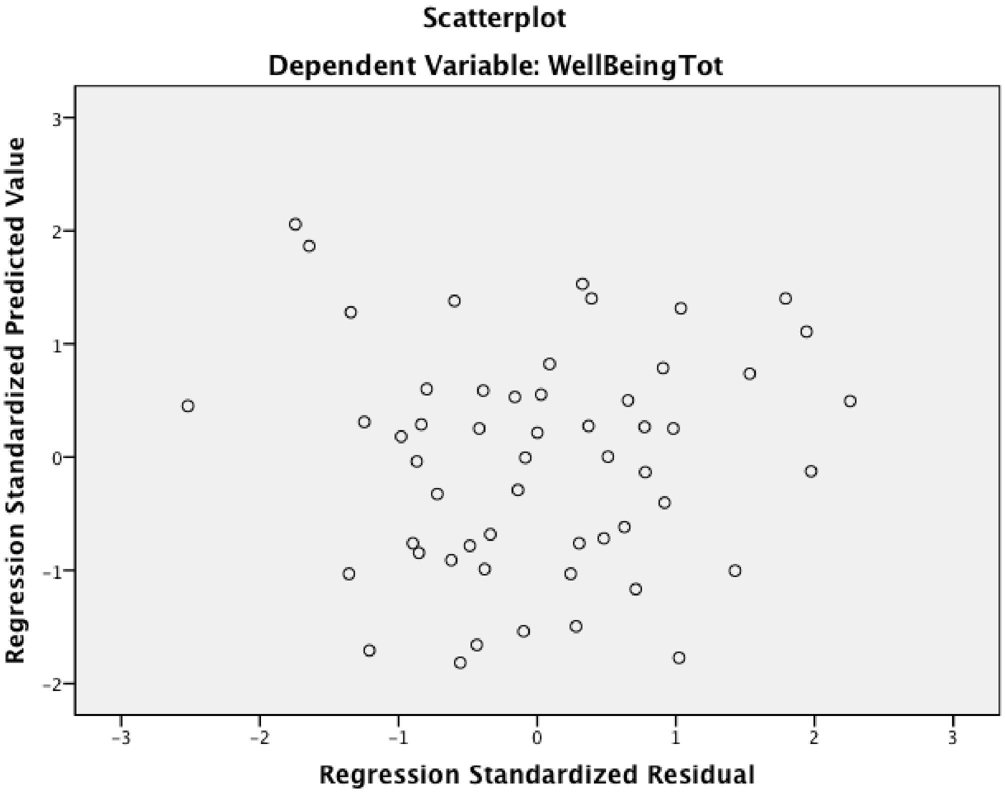


Figure 3

Histogram of Standardized Residuals (Hierarchical Regression)

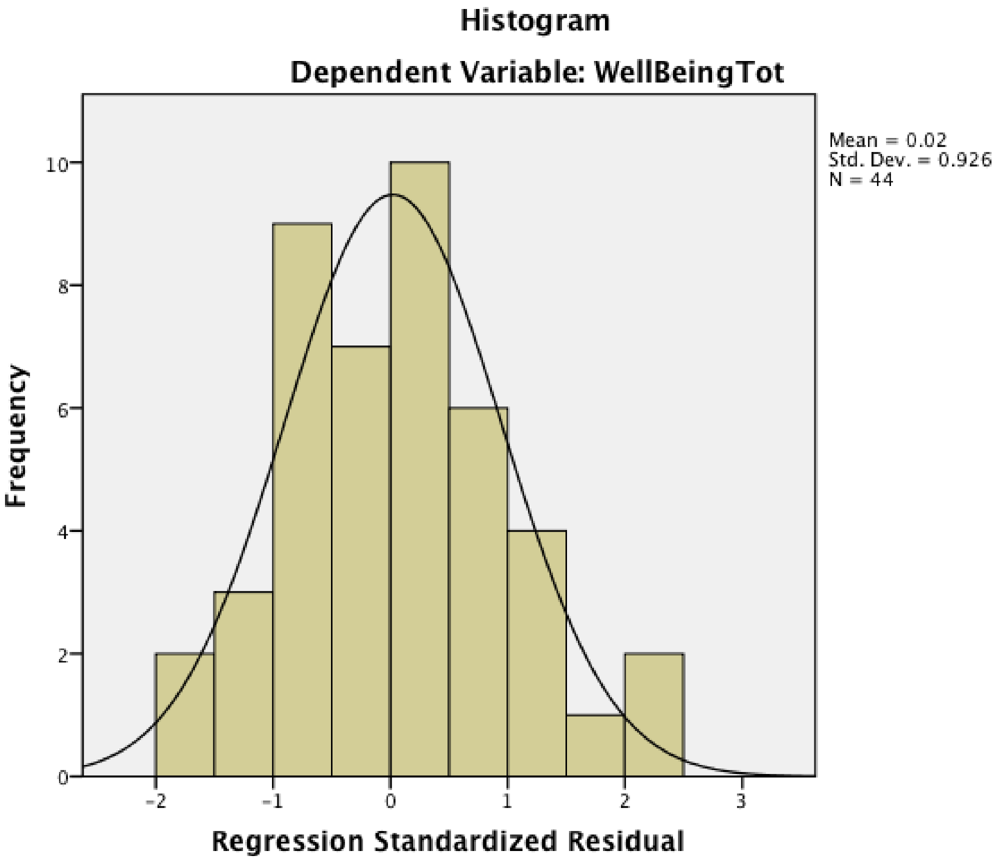
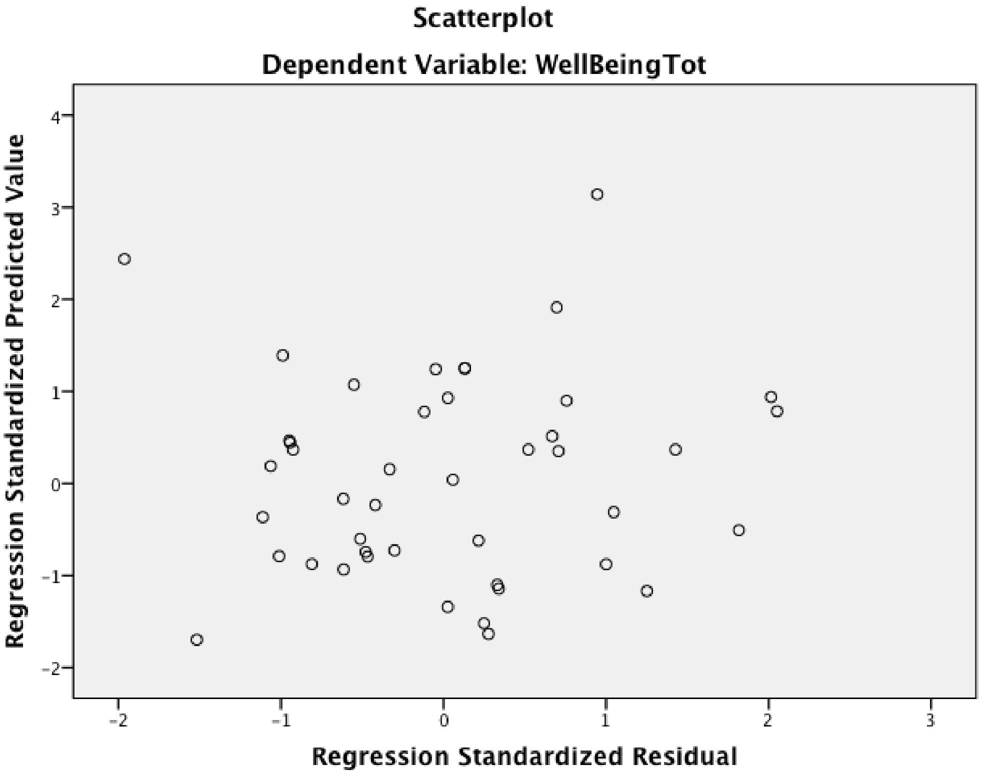


Figure 4

Scatterplot (Hierarchical Regression)



Appendix A

American University of Beirut

CONSENT TO PARTICPATE IN A RESEARCH PROJECT

Project Title: Community Conceptions of Autism Spectrum Disorders

Principal Investigator:	**Co-Investigator:**
Nidal Daou, Ph.D.	Shereen Eid
Assistant Professor of Psychology	Graduate Student
American University of Beirut	American University of Beirut (AUB)
Email: nn07@aub.edu.lb	Email: swe06@mail.aub.edu
Ext: 4376/4360	

Site where study is to be conducted: At AUB or at locations that are preferred by the participants (e.g. schools and clinics).

Introduction/Purpose: You are invited to participate in a research study. The study is conducted under the direction of Nidal Daou, PhD, Assistant Professor, American University of Beirut (AUB). The co-Investigator taking part in this study is a graduate student from AUB. The purpose of this research study is to examine the efficacy of a training about autism spectrum disorders. The results of this study may help in the development of effective parent trainings about autism spectrum disorders and increase autism awareness. This training has been previously used at AUB and at the City University of New York.

Recruitment and Procedures: This study is being advertised on the Facebook pages of autism institutes in Lebanon and related fields (e.g., Facebook page of the AUB Psychology Student Society). It will also be advertised through flyers distributed to different schools, clinics, and hospitals across the greater Beirut region. Approximately 170 mothers of children with autism are expected to take part in this training. Each participant will take part in a pre-test, a training about autism spectrum disorders, a set of qualitative questions that ask you to share your knowledge about aspects relating to your experience as a mother of a child with autism, a post-test, and a questionnaire battery inquiring about your perceptions and experience in parenting a child with autism, and a follow-up session 2-4 weeks later. The time commitment of each participant is expected to last 2 hours during the first session, and 30 minutes during the second.

Possible Discomforts and Risks: There are no foreseeable physical or psychological risks involved with participating in this study that exceed minimal risks ordinarily encountered in daily life or during performance of routine physical or psychological evaluation, although the possibility of some unforeseeable risks exists. To minimize the risk of breach of anonymity we will not ask you to provide your name or birth date. To minimize the risk that the training material will be upsetting, the training was prepared by an autism specialist, Dr. Gillespie-Lynch, who has been studying autism for nearly 10 years. Research citations supporting the evidence put forth in the training are available on the CSI-ASD website: http://www.autism-collegeeducation.com/

Potential Benefits: A potential benefit of participating in this study is that you may develop a new understanding about autism. You will also receive a certificate of attendance in exchange for attending the training and follow-up refresher. You will also have a chance to win one of three 50,000 LBP gift cards. By participating in this study, you may help in the development of new trainings to help mothers understand autism spectrum disorders better that can be used with other parent training contexts. Another benefit is that participating in this study may help in increasing knowledge pertaining to well-being of mothers of children with ASD in the Lebanese context, a place where research on this topic is scarce. Another potential benefit is that you will be provided with the opportunity to address certain concerns that are troubling you, related to parenting.

Alternatives: Participation in this study is completely voluntary and there are no alternatives to participation.

Voluntary Participation and Withdrawal from the Project: Your participation in this study is voluntary, and you may decide not to participate without prejudice, penalty, or loss of benefits to which you are otherwise entitled. In addition, you may withdraw your consent to participate in this research at any point without any explanation and without any penalty. You are also free to stop answering this survey at any point in time without any explanation,

Financial Considerations: Participation in this study will involve no cost to the participant, except for the cost of transportation needed to attend the training at AUB or whichever location preferred by participants.

Confidentiality: The data obtained from you will be collected through a password-protected account online or through hard copies accessible only to the principal investigator and collaborators. The researchers will protect your anonymity by not collecting personally identifying information, such as your name, ID number (e.g., university or national identity card number), or date of birth. Instead, your responses will be stored with a special ID number assigned when you begin the survey. The data will be stored in an anonymous form on a computer server. Hard copies will be stored in a cabinet in the office of the investigator for a period of seven years following the termination and/or publication of the study. Information not associated with the personal information will be presented by the investigator or used in reports and published manuscripts. If you wish to enter the draw for a chance to win one of three gift cards, your name and contact info will be entered in isolation from your answers to the survey, that is without linking your name or personal info to your survey responses. Records might be monitored or audited by the AUB IRB, or another legal body, without violating your privacy, as your data will never be associated with your personal identifying information.

Contact Questions/Persons: This project has been reviewed and approved by the AUB IRB Office for the Protection of Human Participants in Research and Research Related Activities.
If you have any questions about your rights as a research participant, or to report a research-related concern/problem, you may call the IRB at: 01-350000 Ext. 5444/5.
You may also contact the investigators: Shereen Eid or Nidal Daou (contact information above).

Debriefing: If you are interested in learning about the outcome of the study, you may contact Shereen Eid or Nidal Daou (contact information above), who, upon request, could email/explain to you a summary of the results after data analysis would have concluded.

Statement of Consent:

"I am 18 years of age or older. I have read the above description of this research and I understand it. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions that I may have will also be answered by the principal investigator of the research study."

☐ By checking this box I indicate that I voluntarily agree to participate in this study. I have not waived any of my legal rights to which I would otherwise be entitled.

☐ By checking this box, I indicate that I am not interested in participating in this study.

Appendix B

General Health Questionnaire (GHQ-12)

We want to know how your health has been in general **over the last few weeks.** Please read the questions below and each of the four possible answers. **Circle** the response that best applies to you. Thank you for answering all the questions.

Have you recently:

1. Been able to concentrate on what you're doing?
    0. better than usual
    1. same as usual
    2. less than usual
    3. much less than usual

2. Lost much sleep over worry?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual

3. Felt that you are playing a useful part in things?
    0. more so than usual
    1. same as usual
    2. less so than usual
    3. much less than usual

4. Felt capable of making decisions about things?
    0. more so than usual
    1. same as usual
    2. less so than usual
    3. much less than usual
5. Felt constantly under strain?
    0. not at all

1. no more than usual
2. rather more than usual
3. much more than usual

6. Felt you couldn’t overcome your difficulties?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual

7. Been able to enjoy your normal day to day activities?
    0. more so than usual
    1. same as usual
    2. less so than usual
    3. much less than usual

8. Been able to face up to your problems?
    0. more so than usual
    1. same as usual
    2. less so than usual
    3. much less than usual

9. Been feeling unhappy or depressed?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual

10. Been losing confidence in yourself?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual

11. Been thinking of yourself as a worthless person?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual

12. Been feeling reasonably happy, all things considered?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual

Appendix C

Brief COPE Scale

These items deal with ways you have been coping with the stress in your life since you found out your child is diagnosed with ASD, or since you have become a parent (which ever applies to you). There are many ways to try to deal with your current condition. The items ask about what you have been doing to cope with your problems. Obviously, different people deal with things in different ways, but I am interested in how you have tried to deal with parenting your child. Each item says something about a particular way of coping. I want to know to what extent you have been doing what the item says, how much or how frequently. Please do not answer based on whether it seems to be working or not—just whether or not you are doing it. Use these response choices provided below. Try to rate each item separately in your mind from the others. Please make sure that your answers are as true **FOR YOU** as much as possible.

Items	I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
1. I've been turning to work or other activities to take my mind off things	1	2	3	4
2. I've been concentrating my efforts on doing something about the situation I'm in	1	2	3	4
3. I've been saying to myself "this isn't real"	1	2	3	4
4. I've been using alcohol or other drugs to make myself feel better	1	2	3	4
5. I've been getting emotional support from others	1	2	3	4
6. I've been giving up trying to deal with it	1	2	3	4
7. I've been taking action to try to make the situation better	1	2	3	4
8. I've been refusing to believe that it has happened	1	2	3	4
9. I've been saying things to let my unpleasant feelings escape	1	2	3	4
10. I've been getting help and advice from other people	1	2	3	4
11. I've been using alcohol or other drugs to help me get through it.	1	2	3	4
12. I've been trying to see it in a different light, to make it seem more positive	1	2	3	4
13. I've been criticizing myself	1	2	3	4
14. I've been trying to come up with a strategy about what to do	1	2	3	4
15. I've been getting comfort and understanding from someone	1	2	3	4
16. I've been giving up the attempt to cope	1	2	3	4
17. I've been looking for something good in what is happening	1	2	3	4
18. I've been making jokes about it	1	2	3	4
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping	1	2	3	4
20. I've been accepting the reality of the fact that it has happened	1	2	3	4
21. I've been expressing my negative feelings	1	2	3	4

Items	I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
22. I've been trying to find comfort in my religion or spiritual beliefs	1	2	3	4
23. I've been trying to get advice or help from other people about what to do	1	2	3	4
24. I've been learning to live with it	1	2	3	4
25. I've been thinking hard about what steps to take	1	2	3	4
26. I've been blaming myself for things that happened	1	2	3	4
27. I've been praying or meditating	1	2	3	4
28. I've been making fun of the situation	1	2	3	4

Appendix D

Family Support Scale

Listed below are sources that often times are helpful to members of families raising a young child. This questionnaire asks you to indicate **<u>how helpful</u>** each of the below sources is to **<u>your family</u>**. Please circle the response that best describes how helpful the sources have been to your family during the past **<u>3 to 6 months.</u>** If any of the sources was not available to your family during the specified period of time, please circle **"NA"** under the column "Not Applicable".

	Not applicable	Not at all helpful	Sometimes helpful	Generally helpful	Very helpful	Extremely helpful
1. My parents	NA	0	1	2	3	4
2. My husband's parents	NA	0	1	2	3	4
3. My relatives/kin	NA	0	1	2	3	4
4. My husband's relatives/kin	NA	0	1	2	3	4
5. My husband	NA	0	1	2	3	4
6. My friends	NA	0	1	2	3	4
7. My husband's friends	NA	0	1	2	3	4
8. My own children	NA	0	1	2	3	4
9. Other parents	NA	0	1	2	3	4
10. Church, mosque, or temple/shrine	NA	0	1	2	3	4
11. Social groups/clubs	NA	0	1	2	3	4
12. Co-workers	NA	0	1	2	3	4
13. Parent groups	NA	0	1	2	3	4
14. My family or child's physician	NA	0	1	2	3	4
15. Professional helpers (social workers, therapists, teachers, etc.)	NA	0	1	2	3	4
16. School/day care center	NA	0	1	2	3	4
17. Professional agencies/associations (public health, social services, mental health, etc.)	NA	0	1	2	3	4
18. Specialized Early Intervention Services Please specify ………………………………………………….	NA	0	1	2	3	4
19. Others (Please specify) ………………………….		0	1	2	3	4

Appendix E

Indian Scale for Assessment of Autism (ISAA)

Below you are given 40 statements which are divided under six domains, please tick (✓) mark the appropriate rating for each item of the scale by observing your child. Please answer to the best of your ability.

Gender of child: Male – Female

Age of child: __________

Items	Rarely Up to 20% Score 1	Sometimes 21-40% Score 2	Frequently 41-60% Score 3	Mostly 61-80% Score 4	Always 81-100% Score 5
SOCIAL RELATIONSHIP AND RECIPROCITY					
1. Has poor eye contact					
2. Lacks social smile					
3. Remains aloof					
4. Does not reach out to others					
5. Unable to relate to others					
6. Unable to respond to social/environmental cues					
7. Engages in solitary and repetitive play activities					
8. Unable to take turns in social interaction					
9. Does not maintain peer relationships					

Items	Rarely Up to 20% Score 1	Sometimes 21-40% Score 2	Frequently 41-60% Score 3	Mostly 61-80% Score 4	Always 81-100% Score 5
EMOTIONAL RESPONSIVENESS					
10. Shows inappropriate emotional responses					
11. Shows exaggerated emotions					
12. Engages in self-stimulating emotions					
13. Lacks fear of danger					
14. Excited or agitated for no apparent reason					
SPEECH-LANGUAGE AND COMMUNICATION					
15. Acquired speech and lost it					
16. Has difficulty in using non-verbal language or gestures to communicate					
17. Engages in stereotyped and repetitive use of language					
18. Engages in echolalic speech					
19. Produces infantile squeals/ unusual noises					
20. Unable to initiate or sustain conversation with others					
21. Uses jargon or meaningless words					
22. Uses pronoun reversals					
23. Unable to grasp pragmatics of communication (real meaning)					
BEHAVIOUR PATTERNS					

Items	Rarely Up to 20% Score 1	Sometimes 21-40% Score 2	Frequently 41-60% Score 3	Mostly 61-80% Score 4	Always 81-100% Score 5
24. Engages in stereotyped and repetitive motor mannerisms					
25. Shows attachment to inanimate objects					
26. Shows hyperactivity/restlessness					
27. Exhibits aggressive behavior					
28. Throws temper tantrums					
29. Engages in self-injurious behavior					
30. Insists on sameness					
SENSORY ASPECTS					
31. Unusually sensitive to sensory stimuli					
32. Stares into space for long periods of time					
33. Has difficulty in tracking objects					
34. Has unusual vision					
35. Insensitive to pain					
36. Responds to objects/ people unusually by smelling, touching, or tasting					
COGNITIVE COMPONENT					
37. Inconsistent attention and concentration					
38. Shows delay in responding					

Items	Rarely Up to 20% Score 1	Sometimes 21-40% Score 2	Frequently 41-60% Score 3	Mostly 61-80% Score 4	Always 81-100% Score 5
39. Has unusual memory of some kind					
40. Has ‘savant’ ability					

Appendix F

Locus of Control Scale

	Strongly Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Strongly Agree
1. What I do has little effect on my child's behavior	1	2	3	4	5
2. When something goes wrong between me and my child, there is little I can do to correct it.	1	2	3	4	5
3. Parents should address problems with their children because ignoring them won't make them go away.	1	2	3	4	5
4. If your child tantrums no matter what you try, you might as well give up.	1	2	3	4	5
5. No matter how hard a parent tries, some children will never learn to mind.	1	2	3	4	5
6. I am often able to predict my child's behavior in situations.	1	2	3	4	5
7. There is no such thing as good or bad children—just good or bad parents.	1	2	3	4	5
8. When my child is well-behaved, it is because he/she is responding to my efforts.	1	2	3	4	5
9. Parents who can't get their children to listen to them don't understand how to get along with their children.	1	2	3	4	5
10. My child's behavior problems are no one's fault but my own.	1	2	3	4	5
11. Capable people who fail to become good parents have not followed through on their opportunities.	1	2	3	4	5
12. Children's behavior problems are often due to mistakes their parents made.	1	2	3	4	5
13. My life is chiefly controlled by my child.	1	2	3	4	5
14. My child does not control my life.	1	2	3	4	5
15. My child influences the number of friends I have.	1	2	3	4	5
16. I feel like what happens in my life is mostly determined by my child.	1	2	3	4	5
17. It is easy for me to avoid and function independently of my child's attempt to have control over me.	1	2	3	4	5
18. When I make a mistake with my child I am usually able to correct it.	1	2	3	4	5
19. I always feel in control when it comes to my child.	1	2	3	4	5
20. My child's behavior is sometimes more than I can handle.	1	2	3	4	5
21. Sometimes I feel that my child's behavior is hopeless.	1	2	3	4	5
22. It is often easier to let my child have his/her way than to put up with a tantrum.	1	2	3	4	5

	Strongly Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Strongly Agree
23. I find that sometimes my child can get me to do things I really did not want to do.	1	2	3	4	5
24. My child often behaves in a manner very different from the way I would want him/her to behave.	1	2	3	4	5

Appendix G

Brief Social Desirability Scale Reynolds

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

		True	False
1.	It is sometimes hard for me to go on with my work if I am not encouraged.	0	1
2.	I sometimes feel resentful when I don't get my way.	0	1
3.	On a few occasions, I have given up doing something because I thought too little of my ability.	0	1
4.	There have been times when I felt like rebelling against people in authority even though I knew they were right.	0	1
5.	No matter who I'm talking to, I'm always a good listener.	0	1
6.	There have been occasions when I took advantage of someone.	0	1
7.	I'm always willing to admit it when I make a mistake.	0	1
8.	I sometimes try to get even rather than forgive and forget.	0	1
9.	I am always courteous, even to people who are disagreeable	0	1
10.	I have never been irked when people expressed ideas very different from my own.	0	1
11.	There have been times when I am quite jealous of the good fortune of others.	0	1
12.	I am sometimes irritated by people who ask favors of me.	0	1
13.	I have never deliberately said something that hurt someone's feelings.	0	1

Appendix H

Demographics Questionnaire

Please answer the following questions to the best of your ability.

1. Your age (in years): ______

2. Number of Children: ______

3. Do any of your children have a disability?

☐ No (please skip to question 4)

☐ Yes (please answer sections a-c below)

a. State the nature of the disability: ________________________

b. Child’s Age (in years): ________

c. Child’s Gender:

☐ Male

☐ Female

4. In a typical week, I spend _______ of my child’s free time (i.e. when he or she is not at school) with him or her

☐ Up to 20% (Rarely)

☐ 21-40% (Sometimes)

☐ 41-60% (Frequently)

☐ 61-80% (Mostly)

☐ 81-100% (Always)

5. Marital Status:

☐ Married

☐ Divorced

☐ Separated

☐ Widowed

6. Educational Level:

☐ Brevet

☐ Baccalaureate

☐ Bachelor's Degree

☐ Master's Degree

☐ Doctoral Degree (PhD or MD)

7. Employment Status:

☐ Employed

    o Part-time employed

    o Full-time employed

☐ Unemployed

8. Household income

☐ Less than 500,000L.L per month

☐ 500,000L.L - 750,000L.L per month

☐ 750,000L.L – 1,500,000 L.L per month

☐ 1,500,000 L.L. – 3,000,000 L.L per moth

☐ 3,000,000 L.L. – 7,500,000 L.L per month

☐ More than 7,500,000 L.L per month

Appendix I

Pre-test and post-test survey questions

1. What is autism in your own words?
2. What are effective ways for teachers to support their students with autism?
3. What are effective ways for students to support their peers with autism?

4. What causes autism? (Select as many choices as needed)
   a) Genes passed down from parents to children
   b) New changes (mutations) in the genes of affected children
   c) Environmental factors
   d) Vaccines
   e) Negative parenting
   f) Other (please write in your answer)

Instructions: We are interested in how you think about the following statements. Read each statement carefully. Indicate how you think about each statement by circling the respective number.

		Not important at all	Somewhat unimportant	I have no opinion on this issue	Somewhat important	Very important
5.	How important do you think it is to find a cure for autism?	1	2	3	4	5
6.	How important do you think it is to find the cause of autism?	1	2	3	4	5
7.	How important do you think it is to help people with autism appear more normal?	1	2	3	4	5

Knowledge Scale

Choose the degree to which you agree or disagree with the following statements

		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
8	Autism is more frequently diagnosed in males than in females.	1	2	3	4	5
9	Children with autism do not show attachments, even to parents/caregivers.	1	2	3	4	5
10	People with autism are deliberately uncooperative.	1	2	3	4	5
11	Children with autism can grow up to go to college and marry.	1	2	3	4	5
12	There is one intervention that works for all people with autism.	1	2	3	4	5
13	Autism can be diagnosed as early as 15 months of age.	1	2	3	4	5
14	With the proper treatment, most children diagnosed with autism eventually outgrow the disorder.	1	2	3	4	5
15	People with autism show affection.	1	2	3	4	5
16	Most people with autism have low intelligence.	1	2	3	4	5
17	People with autism tend to be violent.	1	2	3	4	5
18	People with autism are generally disinterested in making friends.	1	2	3	4	5
19	People with autism care about and feel the pain of those who are suffering.	1	2	3	4	5
20	Autism is a lifelong disability.	1	2	3	4	5
21	There is one autism spectrum disorder in the DSM-5.	1	2	3	4	5
22	Between 1 in 38 and 1 in 110 people have autism.	1	2	3	4	5

		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
23	Autism is diagnosed using blood tests and/or brain scans.	1	2	3	4	5
24	Married couples are more likely to divorce after having a child with autism.	1	2	3	4	5
25	Vaccines cause autism	1	2	3	4	5
26	Autism is only diagnosed more often among wealthier families in countries where richer people have better access to healthcare	1	2	3	4	5
27	Unusual sensory experiences are part of the diagnostic criteria for autism	1	2	3	4	5
28	We all have some autistic traits	1	2	3	4	5
29	Cold parenting causes autism	1	2	3	4	5

Appendix J

Family Empowerment Scale

Below are 34 statements that describe how a parent or caregiver of a child with an emotional, behavioral and/or developmental challenge(s) may feel about his or her situation. For each statement, please circle the response that best described how the statement applies to you.

	FES Statements	Not True at all	Mostly not True	Somewhat True	Mostly True	Very True
1	I feel that I have a right to approve all services my child receives	1	2	3	4	5
2	When problems arise with my child, I handle them pretty well	1	2	3	4	5
3	I feel I can have a part in improving services for children	1	2	3	4	5
4	I feel confident in my ability to help my child grow and develop	1	2	3	4	5
5	I know the steps to take when I am concerned my child is receiving poor services	1	2	3	4	5
6	I make sure that professionals understand my opinions about what services my child needs	1	2	3	4	5
7	I know what to do when problems arise with my child	1	2	3	4	5
8	I get in touch with my legislators when important bills or issues concerning children are pending	1	2	3	4	5
9	I feel my family life is under control	1	2	3	4	5
10	I understand how the service system for children is organized	1	2	3	4	5
11	I am able to make good decisions about what services my child needs	1	2	3	4	5
12	I am able to work with agencies (associations) and professionals to decide what services my child needs	1	2	3	4	5
13	I make sure I stay in regular contact with professionals who are providing services to my child	1	2	3	4	5
14	I have idea about the ideal service system for children	1	2	3	4	5
15	I help other families get the services they need	1	2	3	4	5
16	I am able to get information to help me better understand my child	1	2	3	4	5
17	I believe that other parents and I can have an influence on services for children	1	2	3	4	5
18	My opinion is just as important as professionals' opinions in deciding what services my child needs	1	2	3	4	5
19	I tell professionals what I think about services being provided to my child	1	2	3	4	5
20	I tell people in agencies (associations) and government how services for children can be improved	1	2	3	4	5
21	I believe I can solve problems with my child when they happen	1	2	3	4	5
22	I know how to get agency (association) administrators or legislators to listen to me	1	2	3	4	5
23	I know what services my child needs	1	2	3	4	5

FES Statements		Not True at all	Mostly not True	Somewhat True	Mostly True	Very True
24	I know what the rights of parent and children are under the special education laws	1	2	3	5	5
25	I feel that my knowledge and experience as a parent can be used to improve services for children and families	1	2	3	4	5
26	When I need help with problems in my family, I am able to ask for help from others	1	2	3	4	5
27	I make efforts to learn new ways to help my child grow and develop	1	2	3	4	5
28	When necessary, I take the initiative in looking for services for my child and family	1	2	3	4	5
29	When dealing with my child, I focus on the good things as well as the problems	1	2	3	4	5
30	I have a good understanding of the services system that my child is involved in	1	2	3	4	5
31	When faced with a problem involving my child, I decide what to do and then do it	1	2	3	4	5
32	Professionals should ask me what services I want for my child	1	2	3	4	5
33	I have a good understanding of my child’s disorders	1	2	3	4	5
34	I feel I am a good parent	1	2	3	4	5

Comments:

Appendix K

Are you a MOTHER to a child with AUTISM?

INTERESTED IN BEING PART OF A RESEARCH PROJECT?

You are invited to participate in a research study which will examine the efficacy of a training about autism spectrum disorders. The results of this study may help in the development of effective trainings for mothers of children with autism spectrum disorders.
You will be asked to participate in a pre-test, a training about autism spectrum disorders and a follow-up session 2-4 weeks later. The first session is expected to last 2 hours and the second is expected to last 30 mins.

Risks: There are no foreseeable physical or psychological risks involved with participating in this study that exceed minimal risks ordinarily encountered in daily life or during performance of routine physical or psychological evaluation, although the possibility of some unforeseeable risks exists.

Benefits: By taking part in this study you may develop a new understanding about autism spectrum disorders. By participating in this study, you may feel more competent in working with children with ASD. You will also receive a certificate of attendance for attending the training lecture and follow-up refresher. You will also have a chance to win one of three 50,000 LBP gift cards.

Alternatives: Your participation in this study is **voluntary**, and you may decide not to participate without prejudice, penalty, or loss of benefits to which you are otherwise entitled.

If you have any questions about participation, please contact:

Primary Contact Persons:

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Appendix L

الجامعة الأميركية في بيروت

موافقة على المشاركة في بحث علمي

عنوان المشروع: مفاهيم المجتمع لحالات التوحد

الباحثة الرئيسية:
د. نضال ضو
أستاذة مساعدة في علم النفس
الجامعة الأميركية في بيروت
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الباحثة المشاركة:
شيرين عيد
طالبة دراسات عليا
الجامعة الأميركية في بيروت
بريد ألكتروني: swe06@mail.aub.edu

الموقع حيث ستُجرى الدراسة: في الجامعة الأميركية في بيروت أو في مواقع يفضّلها المشاركين (مثلا في المدارس أو العيادات)

المقدمة / الهدف: أنت مدعو للمشاركة في دراسة بحثية. تُجرى الدراسة بتوجيه من د. نضال ضو، أستاذة مساعدة، الجامعة الأميركية في بيروت. الباحثة المشاركة في هذه الدراسة هي طالبة دراسات عليا من الجامعة الأميركية في بيروت. الغرض من هذه الدراسة البحثية هو النظر في فعالية التدريب حول حالات التوحد. نتائج هذه الدراسة قد تساعد في تطوير تدريبات فعالة للأهل و في زيادة الوعي حول التوحد. سبق أن استُخدم هذا التدريب في الجامعة الأميركية في بيروت و جامعة سيتي في نيويورك.

انتقاء العينة و الإجراءات: يتم الإعلان عن هذه الدراسة عبر صفحات الفيسبوك لمعاهد التوحد في لبنان و للحقول ذات الصلة (على سبيل المثال، صفحة الفيسبوك لجمعية طلاب علم النفس في الجامعة الأميركية في بيروت). كما سيتم الإعلان عن ذلك من خلال نشرات تُوزّع على مختلف المدارس، العيادات و المستشفيات عبر منطقة بيروت الكبرى من المتوقع أن تشارك في هذا التدريب حوالي 170 من أمهات الأطفال الذين يعانون من التوحد. كل مشارك سيشارك في اختبار مسبق، تدريب حول التوحد، مجموعة من الأسئلة النوعية التي تتطلب منك مشاركة معرفتك بمسائل متعلّقة بتجربتك كوالدة لطفل يعاني من التوحد، اختبار لاحق، مجموعة استبيانات للإستعلام عن تصوراتك و تجربتك في تربية طفل يعاني من التوحد و جلسة متابعة بعد فترة أسبوعين إلى أربعة أسابيع. من المتوقع أن تكون مدة التزام كل مشاركة ساعتين خلال الجلسة الأولى، و 30دقيقة خلال الثانية.

المضايقات و الأخطار المحتملة: لا توجد أخطار جسدية أو نفسية متوقعة من المشاركة في هذه الدراسة تتخطى الحد الأدنى للمخاطر التي تواجهينها عادة في الحياة اليومية أو خلال أداء تقييم روتيني نفسي أو جسدي ، بالرغم من إمكانية وجود بعض الأخطار غير المتوقعة. للتقليل من خطر خرق إخفاء الهوية، لن نطلب منك تقديم اسمك أو تاريخ ميلادك. للتقليل من خطر أن تكون مادة التدريب مزعجة، قد تم إعداد التدريب من قبل أخصائية التوحد، د. جيليسبي-لينش التي عكفت على دراسة التوحد لما يقارب العشر سنوات. تتوفر استشهادات البحث الداعمة للأدلة الواردة في التدريب على موقع CSI-ASD : http://www.autism-collegeeducation.com/

الفوائد المحتملة: الفائدة المحتملة من المشاركة في هذه الدراسة هي إمكانية تطوير مفهوم جديد حول التوحد. أيضًا، سوف تتلقى شهادة حضور مقابل حضور التدريب و جلسة المتابعة التنشيطية. إضافة، سوف تتاح لك فرصة لربح قسيمة من أصل ثلاث قسائم شرائيّة، قيمة كل منها 50000 ليرة لبنانية. من خلال المشاركة في هذه الدراسة، قد تساعد في تطوير تدريبات جديدة لمساعدة الأمهات لفهم التوحد بشكل أفضل و تلك التي قد تُستخدم في سياقات أخرى لتدريب الأهل. فائدة أخرى هي أن المشاركة في هذه الدراسة قد تساعد في زيادة المعرفة المتعلقة بعافية أمهات

الأطفال الذين يعانون من التوحد في السياق اللبناني، حيث البحوث حول هذا الموضوع نادرة. كذلك فائدة محتملة أخرى هي أن يتم إعطاءك الفرصة لمعالجة مخاوف معينة مزعجة تتعلق بالتربية.

البدائل: المشاركة في هذه الدراسة طوعية تماما و ليس هناك أي بدائل عن المشاركة.

المشاركة الطوعية و الانسحاب من المشروع: مشاركتك في هذه الدراسة **طوعية**،و يمكنك أن تقرر عدم المشاركة دون أي تحيز، عقوبة أو خسارة للمزايا التي يحق لك بها خلافا لذلك. بالإضافة، يمكنك سحب موافقتك للمشاركة في هذا البحث عند أي نقطة دون أي تبريرات أو عقوبات. و كذلك لك الحرية بوقف الإجابة عن هذا الاستفتاء في أي وقت دون أي تفسير.

الاعتبارات المالية: المشاركة في هذه الدراسة لن تتضمن أي تكلفة للمشترك ما عدا تكلفة المواصلات للحضور إلى الجامعة أو إلى أي موقع يفضّله المشاركين حيث تجري الدراسة.

السرية: البيانات التي سيتم الحصول عليها منك ستجمع في حساب محمي بكلمة سر عبر الإنترنت أو من خلال نسخورقية لا يمكن النفاذ إليها إلا عبر الباحث الرئيسي و المتعاونين معها. سوف يحمي الباحثون هويتك من خلال عدم جمع معلومات قد تحدد شخصيتك كاسمك، رقم التعريف (كرقم بطاقة الجامعة أو رقم بطاقة الهوية الوطنية) أو تاريخ ميلادك. عوضاعن ذلك، سوف يتم حفظ إجاباتك في رقم تعريف يُحدد عند بدء الاستفتاء. سيتم تخزين البيانات على نحو مجهول في حاسوب آلي. النسخ الورقية سوف تحفظ في خزانة في مكتب الباحث لمدة سبع سنوات تلي إنهاء و/ أو نشر الدراسة. المعلومات غير المتعلقة بالمعلومات الشخصية سوف يتم تقديمها من قبل الباحث أو سوف يتم استخدامها في التقارير و المخطوطات المنشورة. إذا ترغبين بالمشاركة في السحب لفرصة ربح قسيمة من أصل ثلاث قسائم شرائيّة، سيحفظ إسمك و معلومات الإتصال بك بمعزل عن إجاباتك على أسئلة الإستبيانات، مما يعني أن إسمك و معلومات الإتصال بك لن تنسب لإجاباتك في الإستبيانات. يمكن المراقبة أو التدقيق في السجلات من قبل لجنة الأخلاقيات (AUB IRB) أو أي هيئة قانونية أخرى، دون أي انتهاك لخصوصيتك بما أن بياناتك لن تنسب أبدا لمعلوماتك الشخصية الخاصة.

للاتصال فى حال وجود أسئلة: لقد تمت مراجعة هذا المشروع و الموافقة عليه من قبل لجنة الأخلاقيات (AUB IRB) لحماية الأفراد المشاركين في البحث و نشاطات البحث ذات الصلة.

إذا كان لديك أي أسئلة عن حقوقك كمشارك في البحث، أو للإبلاغ عن أي مشكلة / قلق متعلق بالبحث، يمكنك الإتصال بلجنة الأخلاقيات (IRB) على: 01 350000 تحويلة: 5444/5
يمكنك الاتصال بالباحثين: شيرين عيد أو نضال ضو (معلومات الاتصال مبينة أعلاه)

استخلاص المعلومات: إذا كنت مهتم بمعرفة نتائج الدراسة، يمكنك الاتصال بشيرين عيد أو نضال ضو (معلومات الاتصال مبينة أعلاه) ، حيث قد يتم، بناء على طلبك الخاص، شرح / إرسال بواسطة البريد الإلكتروني ملخص النتائج بعد إتمام تحليل البيانات.

بيان الموافقة:

" عمري 18 سنة أو أكثر. لقد قرأت الوصف أعلاه و أنا أفهم ذلك. و قد بلغني المخاطر و المنافع المعنية، و تم الرد عن كل الأسئلة بشكلٍ مرضٍ لي. علاوة على ذلك، أُكد لي بأنه ستتم الإجابة عن أية أسئلة مستقبلية لدي من قبل الباحثة الرئيسية لهذه الدراسةً البحثية."

☐ من خلال تحديد هذا المربع، أشير إلى أنني أوافق طوعا على المشاركة في هذه الدراسة. أنا لم أتنازل عن أي من حقوقي القانونية المخولة بها خلافا لذلك.

☐ من خلال تحديد هذا المربع، أشير إلى أنني لست مهتمة بالمشاركة في هذه الدراسة

Appendix M

استبيان الصحة العامة

نريد أن نعرف كيف كانت حالتك الصحية بشكل عام على مدى **الاسابيع القليلة الماضية** (نرجو أن تكون اجابتك عن الأيام القليلة السابقة). يرجى قراءة الأسئلة التالية وكل من الإجابات المحتملة الأربعة. ضعي **دائرة** حول الإجابة التي تنطبق عليك على أفضل وجه .شكراً على الإجابة على جميع الأسئلة.

1. هل كنت قادرة على التركيز أثناء قيامك بأي عمل؟
   0. أحسن من المعتاد
   1. كالمعتاد
   2. أقل من المعتاد
   3. أقل بكثير من المعتاد

2. هل أصبح نومك قليلاً نتيجة القلق؟
   0. لا لم يحدث إطلاقاً
   1. ليس بأكثر من المعتاد
   2. أصبح نومي أقل من المعتاد
   3. أصبح نومي أقل بكثير من المعتاد

3. هل كنت تشعرين بأنك تقومين بدور مفيد في الأمور التي تجري حولك؟
   0. أكثر من المعتاد
   1. كالمعتاد
   2. أقل من المعتاد
   3. أقل بكثير من المعتاد

4. هل كنت تشعرين بأنك قادرة على إتخاذ القرارات حيال الأمور؟
   0. أكثر من المعتاد
   1. كالمعتاد

2. أقل من المعتاد
3. أقل بكثير من المعتاد

5. هل كنت تشعرين بأنك تحت ضغوط نفسية متواصلة؟
    0. لا أبداً
    1. ليس بأكثر من المعتاد
    2. أكثر من المعتاد
    3. أكثر بكثير من المعتاد

6. هل واجهت مصاعب في التغلب على مشاكلك؟
    0. لا أبداً
    1. ليس بأكثر من المعتاد
    2. أكثر من المعتاد
    3. أكثر بكثير من المعتاد

7. هل كنت قادرة على الإستمتاع بأنشطتك اليومية؟
    0. أكثر من المعتاد
    1. كالمعتاد
    2. أقل من المعتاد
    3. أقل بكثير من المعتاد

8. هل كنت قادرة على مواجهة مشاكلك بالصورة المطلوبة؟
    0. أحسن من المعتاد
    1. كالمعتاد
    2. أقل من المعتاد
    3. أقل بكثير من المعتاد

9. هل كنت تشعرين بأنك غير سعيدة ومكتئبة؟

0. لا أبداً
1. ليس بأكثر من المعتاد
2. أكثر من المعتاد
3. أكثر بكثير من المعتاد

10. هل كنت تفقدين الثقة بنفسك؟
    0. لا أبداً
    1. ليس بأكثر من المعتاد
    2. أكثر من المعتاد
    3. أكثر بكثير من المعتاد

11. هل كنت تفكرين بأنك شخص لا قيمة له؟
    0. لا أبداً
    1. ليس بأكثر من المعتاد
    2. أكثر من المعتاد
    3. أكثر بكثير من المعتاد

12. هل كنت تشعرين بقدر من السعادة رغم كل الظروف المحيطة بك؟
    0. لا أبداً
    1. ليس بأكثر من المعتاد
    2. أكثر من المعتاد
    3. أكثر بكثير من المعتاد

Appendix N

المقياس الموجز للتأقلم

هذه البنود تتطرق إلى الطرق التي كنت و ما زلت تستعينين بها للتأقلم مع الضغوطات في حياتك منذ اكتشافك أن طفلك يعاني من التوحد (أو منذ أن أصبحت أم لطفل ذو نموّ طبيعي). هناك العديد من الطرق لمحاولة التعامل مع المشاكل. هذه البنود تسأل عما تقومين به للتعامل مع هذا الوضع. من الواضح إن مختلف الناس يتعاملون مع الأشياء بطرق مختلفة ، ولكن أنا مهتمة بمعرفة كيف تحاولين التعامل مع تربية طفلك. كل بند يقول شيئا عن طريقة معينة للتأقلم. أريد أن أعرف إلى أي مدى تقومين بما ينص عليه كل بند، كم من الوقت، وعدد المرات. أرجو منك ألا تجيبي بناء على إ ذا ما كانت هذه الطريقة للتأقلم تبدو لك فعالة ام لا، بل اجيبي بناء على إ ذا ما كنت **تستخدمينها ام لا** -- مجرد كنت تفعلين ذلك أم لا. أرجو منك أن تستخدمي هذه الخيارات الأربعة للاجابة. حاولي أن تقومي بتقييم كل بند بشكل منفصل عن الآخر. أرجو منك أن تتأكدي من أن إجاباتك صادقة **بالنسبة لك** بقدر الامكان.

		لم أفعل هذا بتاتاً	أفعل هذا قليلاً	أفعل هذا بشكل متوسط	أفعل هذا كثيراً
1	ألجأ إلى العمل أو نشطات أخرى لكي لألهي نفسي عن التفكير بأمورٍ أخرى	1	2	3	4
2	أركز جهودي لإيجاد حل للوضع الذي أنا فيه	1	2	3	4
3	أقول لنفسي أن "هذا غير حقيقي"	1	2	3	4
4	ألجأ إلى الكحول أوأي نوع من المخدرات للشعور بتحسن	1	2	3	4
5	أحظى بدعم عاطفي من الآخرين	1	2	3	4
6	أفقد الأمل من محاولة التعامل مع الأمر	1	2	3	4
7	أتخذ إجراءات لمحاولة تحسين الوضع	1	2	3	4
8	أرفض أن أصدق أن ذلك قد حصل	1	2	3	4
9	أقول أشياء للتخلص من مشاعرغير سارة	1	2	3	4
10	أحظى بمساعدة و نصائح من أشخاصٍ آخرين	1	2	3	4
11	ألجأ إلى الكحول أوأي نوع من المخدرات لمساعدتي في تخطي الوضع	1	2	3	4
12	أحاول أن أرى الوضع بمنظارٍ أخر لجعله يبدو أكثر إيجابيا	1	2	3	4

		لم أفعل هذا بتاتاً	أفعل هذا قليلاً	أفعل هذا بشكل متوسط	أفعل هذا كثيراً
13	انتقد نفسي	1	2	3	4
14	أحاول إبتكار إستراتيجية حول كيفية التصرف	1	2	3	4
15	أحظى براحة وتفهم من شخصٍ ما	1	2	3	4
16	أفقد الأمل من محاولة التأقلم	1	2	3	4
17	أبحث عن شيء جيدٍ في ما يحدث	1	2	3	4
18	أتكلم بأسلوب فكاهي عن الموضوع	1	2	3	4
19	أفعل أشياء لكي أقلل التفكير بالامر, كالذّهاب إلى السينما, مشاهدة التلفاز, المطالعة, الحلم باليقظة , النوم, أو التسوق	1	2	3	4
20	أتقبل واقع حصول الأمر	1	2	3	4
21	أعبّر عن مشاعري السّلبية	1	2	3	4
22	أحاول أن أجد الراحة من خلال اللجوء إلي ديانتي أو معتقداتي الروحية	1	2	3	4
23	أحاول الحصول على نصائح أو مساعدة من أشخاصٍ آخرين حول كيفية التصرف	1	2	3	4
24	أتعلّم كيفية التعايش مع الوضع	1	2	3	4
25	أفكر ملياً بالخطوات التي يجب أن أتبعها	1	2	3	4
26	ألوم نفسي على الأشياء التي حصلت	1	2	3	4
27	أصلي أو أتأمل	1	2	3	4
28	أسخر من الوضع	1	2	3	4

Appendix O

مقياس الدعم العائلي

المصادر المذكورة أدناه هي، في غالب الأحيان، مصادر دعم لأفراد الأسر الذين يقومون بتربية طفل صغير. هذا الإستبيان يتطلب منك أن تحددي **مدى استفادة عائلتك** من كل مصدر من مصادر الدعم التالية. يرجى وضع **دائرة** حول الإجابة التي تعبر بشكل أفضل عن مدى دعم هذه المصادر لعائلتك خلال **الأشهر الثلاثة إلى الستة الماضية**. و في حال لم تكن أية من المصادر المذكورة متاحة لعائلتك خلال الفترة الزمنية المحددة، الرجاء وضع دائرة حول **"NA"** تحت عامود "لا تنطبق".

		غير مفيدة على الإطلاق	مفيدة في بعض الأحيان	مفيدة بشكل عام	مفيدة جدا	مفيدة إلى أقصى حد	لا تنطبق
1	والديّ (أمي وأبي)	0	1	2	3	4	NA
2	والديّ زوجي	0	1	2	3	4	NA
3	أقربائي	0	1	2	3	4	NA
4	أقرباء زوجي	0	1	2	3	4	NA
5	زوجي	0	1	2	3	4	NA
6	أصدقائي	0	1	2	3	4	NA
7	أصدقاء زوجي	0	1	2	3	4	NA
8	أولادي	0	1	2	3	4	NA
9	أهل (أب و أم) آخرين	0	1	2	3	4	NA
10	الكنيسة، المسجد أو المقام	0	1	2	3	4	NA
11	مجموعات/ نوادي اجتماعية	0	1	2	3	4	NA
12	زملائي في العمل	0	1	2	3	4	NA
13	مجموعات من الأهل	0	1	2	3	4	NA
14	طبيب طفلي/ عائلتي	0	1	2	3	4	NA

		غير مفيدة على الإطلاق	مفيدة في بعض الأحيان	مفيدة بشكل عام	مفيدة جدا	مفيدة إلى أقصى حد	لا تنطبق
15	مساعدين مختصّين (الأخصّائيين الاجتماعيين، المعالجين النفسيين، والمعلمين، الخ...)	0	1	2	3	4	NA
16	المدرسة/ دور الحضانة	0	1	2	3	4	NA
17	جمعيّات مختصّة (خدمات صحية حكومية، خدمات اجتماعية، مصحّات عقلية، الخ)	0	1	2	3	4	NA
18	خدمات التدخّل المبكر المتخصّصة حدد	0	1	2	3	4	NA
19	مصادر دعم أخرى حدد	0	1	2	3	4	NA

Appendix P

المقياس الهندي لتقييم التوحد

عمر الطفل .... الجنس .... التاريخ...........................

تعليمات المقياس:
فيما يلي 40 عبارة منقسمن لستّة أبعاد. الرجاء وضع إشارة (✓) لكل عبارة في هذا المقياس من خلال مراقبتك لطفلك .
الرجاء الإجابة على الفقرات التالية على أفضل وجه.

	أبعاد المقياس وفقراته	نادرا- درجة 1	بعض الأحيان- درجة 2	كثيرا- درجة 3	غالبا- درجة 4	دائما- درجة 5
1	ضعف في التواصل البصري					
2	يفتقر "للابتسامة الاجتماعية"					
3	يبقى بمعزل عن الآخرين					
4	لا يتواصل مع الآخرين					
5	لا يتقرب من الآخرين					
6	عاجز عن الاستجابة للمثيرات الاجتماعية والبيئية					
7	ينشغل بالألعاب الفردية و التي لها طابع تكراري					
8	غير قادر على أخذ الأدوار في التفاعل الاجتماعي					
9	لا يحافظ على علاقاته مع أقرانه					
10	يظهر استجابات انفعالية غير مناسبة					

	أبعاد المقياس وفقراته	**نادرا- درجة 1**	**بعض الأحيان- درجة 2**	**كثيرا- درجة 3**	**غالبا- درجة 4**	**دائما- درجة 5**
11	يظهر انفعالات مبالغ بها (كنوبات الصراخ والضحك)					
12	ينشغل بالإثارة الانفعالية الذاتية كالضحك والبكاء					
13	يظهر عدم خوف من المخاطر					
14	ينفعل أو يُثار بدون سبب واضح					
15	يفقد اللغة التي اكتسبها					
16	لديه صعوبات في استخدام اللغة غير اللفظية والإيماءات للتواصل مع الآخرين					
17	ينشغل بتعبيرات لغوية نمطية وتكرارية					
18	يصدر اصواتا متكررة لا معنى لها					
19	يصدر صرخات أطفال غير طبيعية/ ضجة غير اعتيادية					
20	عاجز عن البدء والاستمرار بمحادثة مع الآخرين					
21	يستخدم لهجة غريبة أو كلمات غير مفهومة					
22	يعكس الضمائر اللّغوية (أنا – أنت ....)					
23	غير قادر على فهم مضمون الكلام (المعنى الحقيقي)					
24	ينشغل بحركات نمطية وذات طابع تكراري					
25	يظهر تعلق بأشياء جامدة غير حية					
26	يظهر نشاطًا زائدًا وأرق					
27	يظهر سلوك عدواني					

	أبعاد المقياس وفقراته	**نادرا- درجة 1**	**بعض الأحيان- درجة 2**	**كثيرا- درجة 3**	**غالبا- درجة 4**	**دائما- درجة 5**
28	يظهر نوبات غضب					
29	ينشغل بإيذاء ذاته (جسديًّا)					
30	يصرّ على الروتين ويرفض التغيير					
31	استجابة غير اعتيادية للمثيرات الحسية					
32	يحدق في المدى لفترات طويلة					
33	يجد صعوبة في تتبّع الأشياء					
34	لديه رؤية غير اعتيادية					
35	غير حسّاس للألم					
36	يستجيب للأشياء والناس بشكل غير اعتيادي من خلال استخدام الحواس كالشّمّ واللّمس والتّذوّق					
37	يظهر انتباه وتركيز متقطّعين					
38	يظهر تأخّرًا في الاستجابة					
39	لديه نوع من ذاكرة غير الإعتيادية					
40	لديه قدرات خارقة في مجال ما					

Appendix Q

تحديد مصدر السيطرة

	العبارات	لا أوافق على الإطلاق	لا أوافق بعض الشيء	حيادي	أوافق بعض الشيء	أوافق بشدّة
1	لما أفعله تأثير طفيف على سلوك طفلي	1	2	3	4	5
2	عند حدوث إشكال ما بيني و بين طفلي، قلما يمكنني فعل شيء لتصحيحه	1	2	3	4	5
3	يجب على الأهل التطرأ للمشاكل مع أبنائهم لأن تجاهلها لا يؤدي لزوالها	1	2	3	4	5
4	بالإجمال، إذا انتاب الطفل بنوبة غضب، قد يشعر الأهل بالإستسلام رغم محاولاتم الشتة	1	2	3	4	5
5	مهما حاول الأهل جاهدًا، بعض الأطفال لن يتعلموا أبدًا الإكتراث	1	2	3	4	5
6	أستطيع أن أتوقّع سلوك طفلي في مختلف المواقف	1	2	3	4	5
7	ليس هناك طفل سيء أو جيد- بل فقط أهل سيئون أو جيدون	1	2	3	4	5
8	عندما يكون طفلي حسن السلوك، فذلك لأنه يستجيب لجهودي	1	2	3	4	5
9	الأهل غير القادرين على جعل أطفالهم الإصغاء لهم لا يفهمون كيفية التوافق مع أطفالهم	1	2	3	4	5
10	مشاكل طفلي السلوكية هي ليست ذنب أحد سواي	1	2	3	4	5
11	الناس الجديرين الذين يفشلون بأن يصبحوا أهل جيدين من الملاحظ أنهم لم يثابروا بالإستعانة من الفرص التي أتيحت لهم	1	2	3	4	5

	العبارات	لا أوافق على الإطلاق	لا أوافق بعض الشيء	حيادي	أوافق بعض الشيء	أوافق بشدّة
12	مشاكل الأطفال السلوكية هي غالباً نتيجة أخطاء ارتكبها أهلهم	1	2	3	4	5
13	طفلي مسيطر بشكل رئيسيّ على حياتي	1	2	3	4	5
14	طفلي لا يتحكم بحياتي	1	2	3	4	5
15	طفلي يؤثر على عدد أصدقائي	1	2	3	4	5
16	أشعر و كأن ما يحدث في حياتي يُحَدَّد في الغالب من قبل طفلي	1	2	3	4	5
17	من السهل بالنسبة لي التجنب و العمل باستقلالية عن محاولة طفلي للتحكم بي	1	2	3	4	5
18	عندما أرتكب خطأ مع طفلي، عادة يمكنني تصحيحه	1	2	3	4	5
19	أشعر دائماً بموقع السيطرة فيما يتعلق بطفلي	1	2	3	4	5
20	يفوق سلوك طفلي في بعض الأحيان عمّا أستطيع تحمله	1	2	3	4	5
21	أشعر أحياناً بأن سلوك طفلي ميؤوس منه	1	2	3	4	5
22	غالباً ما أشعر بأن السماح لطفلي بالتصرف كما يحلو له أسهل من تحمل نوبة غضب	1	2	3	4	5
23	أحياناً أجد أن طفلي يجبرني على القيام بأشياء لم أكن أريد فعلها حقاً	1	2	3	4	5
24	يتصرف طفلي غالبًا بطريقة مختلفة جداً عن الطريقة التي أريده أن يتصرّف بها	1	2	3	4	5

Appendix R

فيما يلي عدد من العبارات حول سلوك و صفات الشخصية. إقرأ (ي) كل عبارة وقرر (ي) ما إذا كانت العبارة صحيحة أو خاطئة بالنسبة لك.

		صح	**خطأ**
1	من الصعب عليّ أحيانا مواصلة عملي إذا لم ألق التّشجيع	0	1
2	أحيانا أشعر بالإمتعاض عندما لا تسير الأمور كما أريد	0	1
3	في مناسبات قليلة، تخلّيت عن القيام بشيء معيّن لأنني استخفيت بقدارتي	0	1
4	هناك أوقات شعرت برغبة بالّتمرّد ضدّ أشخاص في موقع سلطة على الرغم من إدراكي أنهم كانوا على حق	0	1
5	بغض النظر مع من أتحدث، أنا دائما مستمع(ة) جيد	0	1
6	كانت هناك مناسبات عندما قمت بإستغلال شخص ما	0	1
7	أنا دائما على استعداد للإعتراف عندما أرتكب خطأ ما	0	1
8	في بعض الأحيان أحاول إلحاق الضّرر بالطّرف الاخر بدلًا من المسامحة و النسيان	0	1
9	أنا دائمًا ودود(ة)، حتى مع ذوي الطّبع السّيّء	0	1
10	لم يسبق أبدا أن غضبت عندما عبّر الناس عن أفكار مختلفة جدا عن أفكاري	0	1
11	كانت هناك أوقات عندما كنت أشعر بالغيرة من حسن حظ الآخرين	0	1
12	أستاء في بعض الأحيان من الأشخاص الذين يطلبون منّي الخدمات	0	1
13	لم أتلفّظ أبدًا عن عمد بأي شيئ يؤذي مشاعر الآخرين	0	1

Appendix S

استبيان التركيبة السكانية

الرجاء الإجابة على الأسئلة التالية على أفضل وجه.

1. العمر (بالسنوات):_______
2. عدد الأطفال : _______
3. هل أي من أطفالك لديه اي صعوبة؟
   - ☐ كلا (الرجاء الانتقال إلى السؤال رقم 4)
   - ☐ نعم (الرجاء الإجابة على ألاقسام a-c التالية)
     a. طبيعة الصعوبة
     b. عمر الطفل (بالسنوات): _________
     c. جنس الطفل:

☐ ذكر
☐ أنثى

4. في أسبوع عادي ، أقضي ________ من وقت فراغ طفلي (عندما هو أو هي لا يكون في المدرسة) معه أو معها
☐ ما يصل الى 20 ٪ (نادرا)
☐ 40-21 ٪ (أحيانا)
☐ 60-41 ٪ (كثيرا)
☐ 80-61 ٪ (في الغالب)
☐ 100-81 ٪ (دائما)

5. الحالة الزواجية:
☐ متزوجة
☐ مطلقة
☐ منفصلة
☐ أرملة

6. المستوى العلمي :
☐ شهادة البريفيه
☐ البكالوريا

☐ درجة البكالوريوس
☐ درجة الماجستير
☐ مستوى الدكتوراه

7. شكل العمل :
☐ موظفة
  ☐ بدوام جزئي
  ☐ بدوام كامل
☐ ربة منزل (عاطلة عن العمل)

8. دخل الأسرة:

☐ أقل من 500000 ل.ل شهريا
☐ 500000 ل.ل -- 750000 ل.ل شهريا
☐ 750000 ل.ل -- 1500000 ل.ل شهريا
☐ 1500000 ل.ل. -- 3000000 ل.ل شهريا
☐ 3000000 ل.ل. -- 7500000 ل.ل شهريا
☐ أكثر من 7500000 ل.ل شهريا

Appendix T

اسئلة ما قبل و ما بعد التدخل

		لا أوافق على الإطلاق	لا أوافق	لا أوافق بعض الشيء	حيادي	أوافق	أوافق بشدّة
1	في الماضي، كانت تجاربي مع الأشخاص الذين يعانون من التّوحد تجارب لطيفة	1	2	3	4	5	6
2	لديّ تجارب إيجابيّة عديدة مع الأشخاص الذين يعانون من التّوحد	1	2	3	4	5	6
3	في المجمل لديّ تجارب إيجابيّة مع الأشخاص الذين يعانون من التّوحد	1	2	3	4	5	6
4	لقد استمتعت بتجاربي مع الأشخاص الذين يعانون من التّوحد	1	2	3	4	5	6

1. بكلماتك الخاصة، ما هو التّوحّد؟

2. ما هي الطرق الفعّالة كي يدعم المعلّمون و المعلّمات تلامذتهم الذين يعانون من التّوحّد؟

3. ما هي الطرق الفعّالة كي يدعم التّلامذة زملائهم الذين يعانون من التّوحّد؟

4. ما الذي يسبب التوحّد؟ (اختر كل الاحتمالات المناسبة)
- ☐ جينات مورثة من الاهل الى الابناء
- ☐ تحوّلات جينيّة جديدة عند الاطفال الذين يعانون من التوحّد
- ☐ عوامل بيئيّة مثل التلوّث و المواد السامّة
- ☐ اللقاحات
- ☐ التربية السلبيّة
- ☐ غيرها (الرجاء كتابة جوابك): ________________

		غير مهم على الإطلاق	غير مهم بعض الشيء	حيادي	مهم بعض الشيء	مهم جدّاً
5	ما مدى اهميّة ايجاد علاج شاف للتوحّد؟	1	2	3	4	5
6	ما مدى اهميّة ايجاد سبب التوحّد؟	1	2	3	4	5
7	ما مدى اهميّة مساعدة الاشخاص الذبن يعانون من التوحّد للظهور و كأنّهم "طبيعيين"؟	1	2	3	4	5

مقياس المعرفة

الرجاء إختيار مدى موافقتك أو عدم موافقتك على العبارات التالية

		لا أوافق على الإطلاق	لا أوافق بعض الشيء	حيادي	أوافق بعض الشيء	أوافق بشدّة
8	التّوحّد يُشَخّص غالبًا لدى الذكور أكثر منه لدى الإناث	1	2	3	4	5
9	الأطفال الذين يعانون من التّوحّد لا يظهرون التّعلّق، حتّى لأولياء أمورهم/ الأشخاص الذين يزوّدونهم بالرّعاية	1	2	3	4	5
10	الاشخاص الذبن يعانون من التوحّد لا يتعاونون عمدًا	1	2	3	4	5
11	الأطفال الذين يعانون من التّوحّد باستطاعتهم الوصول إلى مرحلة الذهاب إلى الكليّة و الزواج	1	2	3	4	5
12	هناك طريقة علاجيّة واحدة تصلح لجميع الاشخاص الذين يعانون من التّوحّد	1	2	3	4	5
13	يمكن تشخيص التّوحّد مبكرًا بدءًا من عمر الخامسة عشر شهرًا	1	2	3	4	5
14	معظم الأطفال الذين تمّ تشخيص حالتهم بالتّوحّد يتغلّبون على هذا الإضطراب إذا تلقّوا العلاج المناسب	1	2	3	4	5
15	الاشخاص الذين يعانون من التّوحّد يظهرون العاطفة	1	2	3	4	5
16	معظم الاشخاص الذين يعانون من التّوحّد لديهم نسبة ذكاء منخفضة	1	2	3	4	5
17	الاشخاص الذين يعانون من التّوحّد يميلون إلى العنف	1	2	3	4	5
18	الاشخاص الذين يعانون من التّوحّد هم في المجمل غير مكترثين بتكوين الصّداقات	1	2	3	4	5
19	الاشخاص الذين يعانون من التّوحّد يهتمّون و يشعرون بآلام الذين يعانون	1	2	3	4	5
20	التّوحّد صعوبة على مدى الحياة	1	2	3	4	5
21	هناك نوع واحد من اضطراب التّوحّد في الدليل التّشخيصيّ و الإحصائيّ الخامس للإضطرابات النفسيّة (DSM-5	1	2	3	4	5
22	حالة التّوحّد تتشخّص عند 1 من أصل 38 شخص حينًا و عند 1 من 110 أحيانًا أخرى	1	2	3	4	5
23	يتمّ تشخيص التّوحّد عبر إجراء فحوصات دمّ مخبريّة/ التصوير الراديوغرافي للدماغ	1	2	3	4	5
24	المتزوّجون أكثر عرضة للطّلاق بعد إنجاب طفل يعاني من التّوحّد	1	2	3	4	5

		لا أوافق على الإطلاق	لا أوافق بعض الشيء	حيادي	أوافق بعض الشيء	أوافق بشدّة
25	اللّقاحات تسبّب التّوحّد	1	2	3	4	5
26	يتمّ تشخيص التّوحّد بنسبة أعلى فقط لدى العائلات الثّريّة في البلدان حيث يتوفّر للأثرياء فرص أفضل للحصول على خدمات الرّعاية الصحية	1	2	3	4	5
27	التّجارب الحسّيّة غير الإعتياديّة تندرج ضمن المعايير التّشخيصيّة للتّوحّد	1	2	3	4	5
28	جميعنا لدينا بعض من خصال التّوحّد	1	2	3	4	5
29	الأبوّة و الأمومة المتّسمة بالبرودة تسبّب التّوحّد	1	2	3	4	5

Appendix U

مقياس التمكين العائلي

في ما يلي 34 عبارة تصف مشاعر والد/ة أو راعٍ اخر مع ابن/ة ذي صعوبات عاطفيّة، سلوكيّة و/أو تنموية حيال الوضع. لكل عبارة، الرجاء اختيار الاجابة التي تصف مدى انطباق العبارة عليك بشكل أفضل.

	العبارات	غير صحيح ابداً	غير صحيح في الغالب	صحيح نوعاً ما	صحيح بالاجمال	صحيح جداً
1	اشعر ان لي الحق في الموافقة على جميع الخدمات التي يتلقاها طفلي	1	2	3	4	5
2	عندما تنشأ المشاكل مع طفلي، اعالجها بشكل جيّد جدّاً	1	2	3	4	5
3	أشعر انه يمكن ان يكون لي دور في تحسين الخدمات للأولاد	1	2	3	4	5
4	انا واثق(ة) من قدرتي على مساعدة طفلي لينمو و يتطور	1	2	3	4	5
5	اعرف الخطوات التي يمكنني اتخاذها اذا كنت قلق(ة) ان طفلي يتلقى خدمات ضعيفة	1	2	3	4	5
6	انا احرص ان يفهم المختصّين بعلاج طفلي رأيي بالخدمات التي يحتاجها	1	2	3	4	5
7	اعرف ما يجب ان افعل اذا نشأت مشاكل مع طفلي	1	2	3	4	5
8	اتواصل مع الإداريين (المختصين القانونيين) عندما تكون فواتير و قضايا مهمة متعلّقة بالاولاد لا تزال معلّقة	1	2	3	4	5

	العبارات	غير صحيح ابداً	غير صحيح في الغالب	صحيح نوعاً ما	صحيح بالاجمال	صحيح جداً
9	اشعر ان حياتي العائليّة تحت السيطرة	1	2	3	4	5
10	انا افهم نظام الخدمات المتعلّقة بطفلي	1	2	3	4	5
11	انا قادر(ة) على اتخاذ قرارات جيدة حيال الخدمات التي يحتاجها طفلي	1	2	3	4	5
12	انا قادر(ة) على العمل مع المختصّين و الجمعيّات لتقرير الخدمات التي يحتاجها طفلي	1	2	3	4	5
13	احرص ان ابقى على اتصال منتظم بالمختصّين الّذين يقدّمون الخدمات لطفلي	1	2	3	4	5
14	لدي فكرة حول نظام الخدمات المثالي للاولاد	1	2	3	4	5
15	اساعد العائلات الاخرى بالحصول على الخدمات التي يحتاجونها	1	2	3	4	5
16	استطيع الحصول على معلومات تساعدني على فهم طفلي بشكل افضل	1	2	3	4	5
17	اعتقد انه يمكنني و الأهل الاخرين التأثير على الخدمات التي يتلقاها الاولاد	1	2	3	4	5
18	رأيي مهم مثل رأي المختصّين في تقرير اي خدمات يحتاجها طفلي	1	2	3	4	5
19	ابلغ المختصّين رأيي بالخدمات التي يحصل عليها طفلي	1	2	3	4	5
20	ابلغ الاشخاص في الجمعيّات و الحكومة كيف يمكن تحسين الخدمات للاولاد	1	2	3	4	5
21	اعتقد انّه يمكنني حلّ المشاكل مع طفلي عندما تحصل	1	2	3	4	5

	العبارات	غير صحيح ابداً	غير صحيح في الغالب	صحيح نوعاً ما	صحيح بالاجمال	صحيح جداً
22	اعرف كيف استطيع ان جعل اداريّي الجمعيّات و المختصّين القانونيين يستمعون الي	1	2	3	4	5
23	اعرف ما هي الخدمات التي يحتاجها ابني	1	2	3	4	5
24	اعرف ما هي حقوق الأهل و الاولاد بموجب القوانين المتعلّقة بالتربية التعليمية الخاصة (special education)	1	2	3	4	5
25	اشعر بأن معرفتي و خبرتي كوالد(ة) يمكن استتخدامها لتحسين الخدمات للأولاد و العائلات	1	2	3	4	5
26	عندما احتاج المساعدة في مشاكل عائلية، انا قادر(ة) على طلبها من الاخرين	1	2	3	4	5
27	ابذل مجهوداً لتعلّم طرق جديدة لمساعدة طفلي ان ينمو و يتطور	1	2	3	4	5
28	عند الضرورة، ابادر في البحث عن خدمات لطفلي و عائلتي	1	2	3	4	5
29	عندما اتعامل مع طفلي، اركز على الايجابيات كما المشاكل	1	2	3	4	5
30	أفهم نظام الخدمات المشارك بها طفلي بشكل جيّد	1	2	3	4	5
31	عندما اواجه مشاكل متعلّقة بطفلي اقرر ما اريد فعله و من ثم اقوم به	1	2	3	4	5
32	على المختصّين ان يسألوني ما هي الخدمات التي اريدها لطفلي	1	2	3	4	5
33	افهم الصعوبات التي يعاني منها ابني (ابنتي) بشكل جيّد	1	2	3	4	5
34	اشعر انني والد/ة جيد(ة)	1	2	3	4	5

Appendix V

هل أنت والدة لطفل يعانى من التوحد
هل أنت مهتمة بالمشاركة فى بحث علمى؟

أنت مدعوّة للمشاركة في دراسة بحثبة ينظر في فعالية التدريب حول حالات التوحد. نتائج هذه الدراسة قد تساهم في تطوير تدريبات فعالة لأمهات الأطفال الذين يعانون من التوحد.

سوف يطلب منك المشاركة في اختبار مسبق، تدريب حول التوحد و جلسة متابعة بعد 2-4 أسابيع. من المتوقع أن تدوم أول جلسة لمدة ساعتين، و الثانية لمدة 30 دقيقة.

المخاطر: لا توجد أخطار جسدية أو نفسية متوقعة من المشاركة في هذه الدراسة تتخطى الحد الأدنى للمخاطر التي تواجهينها عادة في الحياة اليومية أو خلال أداء تقييم روتيني نفسي أو جسدي ، بالرغم من إمكانية وجود بعض الأخطار غير المتوقعة.

الفوائد: بكونك جزء من هذه الدراسة يمكنك تطوير مفهوم جديد حول التوحد. بمشاركتك في هذه الدراسة، قد تشعرين بأنك أكثر كفاءة للعمل مع الأطفال الذين يعانون من التوحد. سوف تتلقين شهادة حضور مقابل حضور محاضرة التدريب و جلسات المتابعة التنشيطية. إضافة، سوف تتاح لك فرصة لربح قسيمة من أصل ثلاث قسائم شرائيّة، قيمة كل منها 50000 ليرة لبنانية

البدائل: مشاركتك في هذه الدراسة **طوعية**،و يمكنك أن تقرري عدم المشاركة دون أي تحيز، عقوبة أو خسارة للمزايا التي يحق لك بها خلافا لذلك.

إذا كان لديك أية أسئلة حول المشاركة، الرجاء الاتصال ب:

الأشخاص الرئيسيين الذين يمكن الاتصال بهم:

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Appendix W

Counterbalancing For Pretest

1. Normality. Normality of the variables (child behavioral problems, coping styles {engagement, cognitive reframing, distraction, and disengagement} knowledge about ASD, social support {informal and formal}, empowerment {family, service system, and community/political}, locus of control, social desirability, and maternal well-being) was examined across participants who completed Versions A and B. This was established through the examination of the Shapiro-Wilk statistic. At pretest, results revealed the following:

The Shapiro-Wilk test revealed that the distribution of the scores of the child behavioral problems scale [*W* (29) = .97, *p* = .560, *ns (Version A), W* (22) = .97, *p* = .668, *ns (Version B)*], coping styles (engagement) [*W* (30) = .93, *p* = .057*, ns (Version A)],* coping styles (cognitive reframing) [*W* (30) = .94, *p* = .106, *ns (Version A), W* (23) = .95, *p* = .317, *ns (Version B)*], coping styles (distraction) [*W* (30) = .97, *p* = .478, *ns (Version A), W* (23) = .92, *p* = .058, *ns (Version B)*], knowledge about ASD [*W* (30) = .95, *p* = .189, *ns (Version A), W* (23) = .96, *p* = .412, *ns (Version B)*], overall social support [*W* (29) = .94, *p* = .111, *ns (Version A), W* (23) = .97, *p* = .771, *ns (Version B)*], informal social support [*W* (29) = .94, *p* = .092, *ns (Version A), W* (23) = .97, *p* = .728, *ns (Version B)*], formal social support [*W* (23) = .93, *p* = .125, *ns (Version B)],* empowerment scale (family subscale) [*W* (30) = .97, *p* = .654, *ns (Version A), W* (23) = .94, *p* = .144, *ns (Version B)*], empowerment scale (service system subscale) [*W* (30) = .96, *p* = .350, *ns (Version A), W* (23) = .95, *p* = .350, *ns (Version B)*], empowerment scale (community/political subscale) [*W* (30) = .99, *p* = .989, *ns (Version A), W* (23) = .97, *p* = .573, *ns (Version B)*], locus of control [*W* (30) = .97, *p* = .543, *ns (Version A), W* (23) = .92, *p* = .069, *ns (Version B)*], social desirability [*W* (30) = .96, *p* = .399, *ns (Version A), W* (23) = .94, *p* =

.156, *ns (Version B)*], and well-being [*W* (30) = .98, *p* = .739, *ns*, *W* (23) = .94, *p* = .169, *ns*] across version A and version B were not significantly different from that of a normal distribution. This indicates that normality of the distribution of the scores of child behavioral problems, coping styles (engagement {Version A}, cognitive reframing, and distraction), knowledge about ASD, social support (informal and formal {Version B}), empowerment (family, service system, and community/political), locus of control, social desirability, and well-being were met across versions A and B.

However, the Shapiro-wilk test at pretest revealed that the distribution of the scores of coping styles (engagement) [*W* (23) = .23, *p* = .047 *(Version B)*], coping styles (disengagement coping) [*W* (30) = .92, *p* = .023 *(Version A)*, *W* (23) = .90, *p* = .023 *(Version B)*], and formal social support [*W* (29) = .92, *p* = .023 *(Version A)*] were significantly different from that of a normal distribution. This indicates that normality of the distribution of scores of informal social support was not met across Version B, while that of engagement and disengagement coping styles was not met across Version A.

Similarly, normality of the variables (knowledge about ASD, empowerment {family, service system, and community/political}, and well-being) was examined across participants who completed version A and version B of the pretest in the posttest session. This was established through the examination of the Shapiro-Wilk statistic. Results revealed the following:

The Shapiro-Wilk test revealed that the distribution of the scores of knowledge about ASD [*W* (16) = .97, *p* = .783, *ns (Version A)*, *W* (17) = .96, *p* = .666, *ns (Version B)*], empowerment (family subscale) [*W* (16) = .97, *p* = .880, *ns (Version A)*, *W* (17) = .92, *p* = .120, *ns (Version B)*], empowerment (service system subscale) [*W* (16) = .95, *p* = .467, *ns (Version A)*, *W* (17) = .93, *p* = .258, *ns (Version B)*], empowerment (Community/Political subscale) [*W* (16) =

.97, p = .776, *ns (Version A)*, W (17) = .96, p = .669, *ns (Version B)*], and well-being [W (16) = .95, p = .538, *ns (Version A)*, W (17) = .94, p = .331, *ns (Version B)*], across version A and version B were not significantly different from that of a normal distribution. This indicates that normality of the distribution of the scores of knowledge about ASD, empowerment (family, service system, and community/political) and well-being levels were met across versions A and B.

2. Counterbalancing Main Analysis. Since the normality of the variables child behavioral problems, empowerment (family, service system, and community/political), social desirability, locus of control, knowledge about ASD, coping styles (distraction, disengagement, and cognitive reframing) social support (informal), and well-being was met across version A and version B, thus independent sample t-tests were carried out to investigate whether those variables were significantly different across versions A and B at pretest. The results of the t-tests revealed that the scores of the previously listed variables were not significantly different across the different versions. Following are the results:

On average, participants who filled version A had higher levels of child behavioral problems on pretest (M = 100.86, SD = 21.30) compared to participants who completed version B (M = 98.77, SD = 23.40). This difference was not found significant, however, as indicated by the t-test; t (49) = .33, p = .741, *ns*.

Similarly, on average, participants who filled version A had higher levels of empowerment (family) on pretest (M = 46.20, SD = 6.45) and empowerment (community/political) (M = 45.90, SD = 6.53), compared to participants who completed version B (M = 43.57, SD = 6.77) and (M = 45.04, SD = 7.82) respectively. This difference was not found significant, however, as indicated by the t-tests; t (51) = 1.44, p = .155, *ns* and t (51) = .45, p = .656, *ns,* respectively.

However, on average, participants who filled version A had lower levels of empowerment (service system) on pretest (*M* = 8.67, *SD* = 2.37) compared to participants who completed version B (*M* = 8.96, *SD* = 1.97). This difference was not found significant, however, as indicated by the t-test; *t* (51) = -.48, *p* = .637, *ns*.

Concerning locus of control, on average, participants who filled version A had higher levels of locus of control on pretest (*M* = 72.73, *SD* = 10.55) compared to participants who completed version B (*M* = 71.91, *SD* = 12.24). This difference was not found significant, however, as indicated by the t-test; *t* (51) = .26, *p* = .795, *ns*.

On average, participants who filled version A had lower levels of knowledge about ASD on pretest (*M* = 6.37, *SD* = 6.01) compared to participants who completed version B (*M* = 8.04, *SD* = 6.67). This difference was not found significant, however, as indicated by the t-test; *t*(51) = -.96, *p* = .344, *ns*.

With regards to coping styles, on average, participants who filled version A had higher levels of distraction coping (*M* = 17.17, *SD* = 3.81) and cognitive reframing coping (*M* = 20.00, *SD* = 2.18) on pretest, compared to participants who completed version B (*M* = 16.61, *SD* = 4.55) and (*M* = 19.91, *SD* = 2.92) respectively. This difference was not found significant, however, as indicated by the t-tests; *t* (51) = .49, *p* = .629, *ns* and *t* (51) = .12, *p* = .902, *ns* respectively.

As for social support, on average, participants who filled version A had higher levels of overall social support (*M* = 49.21, *SD* = 15.18) and informal support coping on pretest (*M* = 33.76, *SD* = 11.93), compared to participants who completed version B (*M* = 46.96, *SD* = 15.85) and (*M* = 31.96, *SD* = 13.40) respectively. This difference was not found significant, however, as indicated by the t-tests; *t* (50) = .52, *p* = .605, *ns* and *t* (50) = .51, *p* = .611, *ns* respectively.

Finally, on average, participants who filled version A had lower levels of wellbeing on pretest (*M* = 14.27, *SD* = 5.63) compared to participants who completed version B (*M* = 14.65, *SD* = 6.10). This difference was not found significant, however, as indicated by the t-test; *t* (51) = -.24, *p* = .813, *ns*.

Given that the predictor variables coping styles (engagement and disengagement) and formal support did not meet the assumption of normality, a Mann-Whitney test was conducted in order to examine the differences across versions A and B.

A Mann-Whitney test indicated that engagement coping was not significantly different between participants who filled version A (*Mdn* = 25.00) and those who filled version B (*Mdn* = 24.00), *U* = 311.50, *p* = .546, *ns*. Similarly, a Mann-Whitney test indicated that disengagement coping was not significantly different between participants who filled version A (*Mdn* = 9.00) and those who filled version B (*Mdn* = 8.00), *U* = 245.00, *p* = .070, *ns*. Finally, a Mann-Whitney test indicated that formal support was not significantly different between participants who filled version A (*Mdn* = 17.00) and those who filled version B (*Mdn* = 16.00), *U* = 300.50, *p* = .542, *ns*.

The results of the t-test revealed that on average, participants who filled version B had higher levels of knowledge about ASD on pretest (*M* = 8.35, *SD* = 6.9) compared to participants who completed version A (*M* = 6.06, *SD* = 5.97). This difference was not found significant, however, as indicated by the t-test; *t* (31) = -1.01, *p* = .776, *ns, r* = .08. Furthermore, on average, participants who filled version A had higher levels of empowerment (family subscale) on pretest (*M* = 46.56, *SD* = 6.28) compared to participants who completed version B (*M* = 44.59, *SD* = 65.12). This difference was not found significant, however, as indicated by the t-test: *t* (31) = .99, *p* = .473, *ns, r* = .53. On the other hand, on average, participants who filled version A of empowerment at the service system level on pretest (*M* = 46.87, *SD* = 6.23) did not significantly differ from participants who completed version B (*M* = 46.65, *SD* = 6.51), *t* (31) = .10, *p* = .825, *ns, r* = .050. Similarly, on average, participants who filled version A of empowerment (community/political subscale) on pretest (*M* = 32.19, *SD* = 4.66) did not significantly differ from participants who completed version B (*M* = 32.64, *SD* = 4.65), *t* (31) = -.28, *p* = .929, *ns, r* = .008. Finally, on average, participants who filled version A of well-being on pretest (*M* = 14.37, *SD* = 6.13) did not significantly differ from participants who completed version B (*M* =14.06, *SD* = 6.29), *t*(31) = .15, *p* = .901, *ns, r* = .02. Hence, results did not significantly differ between versions A and B at pretest measures.

B. Counterbalancing for Posttest

Similarly, two counterbalanced versions of the posttest battery of surveys were generated to control for order and sequence effects in versions A and versions B at posttest.

1. Normality. Normality of the variables (knowledge about ASD, empowerment {family, service system, and community/political}, and well-being) was examined across participants who completed versions A and B. This was established through the examination of the Shapiro-Wilk statistic. Posttest measures revealed the following results:

The Shapiro-Wilk test revealed that the distribution of the scores of knowledge about ASD [*W* (15) = .92, *p* = .224, *ns (Version A), W* (18) = .93, *p* = .217, *ns (Version B)*], empowerment (family subscale) [*W* (15) = .88, *p* = .052, *ns (Version A), W* (18) = .94, *p* = .326, *ns (Version B)*], empowerment (service system subscale) [*W* (15) = .94, *p* = .384, *ns (Version A), W* (18) = .95, *p* = .397, *ns (Version B)*], empowerment (community/political subscale) [*W* (15) = .96, *p* = .737, *ns (Version A), W* (18) = .95, *p* = .407, *ns (Version B)*], and well-being [*W* (15) = .93, *p* = .249, *ns (Version A), W* (18) = .97, *p* = .831, *ns (Version B)*] across version A and version B were not significantly different from that of a normal distribution. This indicates that normality of the distribution of the scores of knowledge about ASD, empowerment (family, service system, and community/political) and well-being levels were met across versions A and B.

2. Counterbalancing Main Analysis. Since the normality of the variables knowledge about ASD, empowerment (family, service system and community/political), and well-being levels was met across version A and version B, thus independent sample t-tests were carried out to investigate whether those variables were significantly different across versions A and B in posttest measures.

On average, participants who filled version A had higher levels of knowledge about ASD on posttest (*M* = 10.87, *SD* = 6.45), compared to participants who completed version B (*M* = 7.94, *SD* = 7.45). The t-test revealed, however, that this difference was not found significant; *t* (31) = .71, *p* = .242, *ns*, *r* = .14. Additionally, participants who filled version A had higher levels of empowerment (family) on posttest (*M* = 47.20, *SD* = 4.36), compared to participants who completed version B (*M* = 43.44, *SD* = 6.40). This difference was not found significant, however, as indicated by the t-test; *t* (31) = 1.93, *p* = .127, *ns*, *r* = 2.45. Similarly, participants who filled version A had higher levels of empowerment (service system) on posttest (*M* = 49.00, *SD* = 4.53), compared to participants who completed version B (*M* = 45.22, *SD* = 7.19). This difference, however, was not found to be significant, as indicated by the t-test; *t* (31) = 1.76, *p* = .220, *ns, r* = 1.56. Moreover, on average, participants who filled version A had higher levels of empowerment (community/political) on posttest (*M* = 33.93, *SD* = 5.67), compared to participants who filled version B (*M* = 32.61, *SD* = 5.20). However, this difference was not found to be significant, based on the t-test; *t*(31) = .69, *p* = .620, *ns*, *r* = .14. Finally, participants who filled version A had higher levels of maternal well-being on posttest (*M* = 13.47, *SD* = 4.44) compared to participants who completed version B (*M* = 12.39, *SD* = 4.24). This difference was not found significant, however, as indicated by the t-test; *t*(31) = .71, *p* = .567, *ns*, *r* = .33.

Therefore, participants who filled version A did not significantly differ from participants who filled version B on the variables knowledge about ASD, empowerment (family, service system, and community/political), and well-being.