HAIGAZIAN UNIVERSITY

Locus of Control, Optimism and Social Support as Predictors of Resilience in an Adult Lebanese Sample

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DEDICATION

I would like to dedicate this thesis to all the Lebanese men and women living in this country with so many difficulties, hoping that they continue trying to move forward despite all the challenges towards becoming more resilient individuals with more faith in their country and a strong will to make a change.

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Abstract

This study investigated the impact of locus of control, optimism, social support and age on the psychological resilience of Lebanese adults living in Lebanon. A total of 292 Lebanese adults participated in this study by filling a demographic questionnaire, the Rotter's Locus of Control Scale (Rotter IE), the Life Orientation Test-Revised (LOT-R), the Multidimensional Scale of Perceived Social Support (MSPSS) and the Connor Davidson Resilience Scale (CD-RISC). Correlation analyses, regression analyses and t-tests were used to examine the relationship between the different variables. The results showed that having an internal locus of control was significantly positively correlated with a higher level of resilience. A positive significant correlation was found between being optimistic and being resilient. The correlation between social support and resilience was positive and significant, especially between having a significant other's support and being more resilient. The study's results indicated that the older the person gets the more resilient he/she becomes. The regression analysis showed that optimism and social support were significant predictors of resilience with optimism being the strongest predictor. We concluded that in order to boost an individual's psychological resilience it is necessary to focus on its predictors. Thus, we suggest providing clinical work that focuses on boosting the predictors of resilience (optimism and social support) in order to help the Lebanese adults become more flexible, more adaptive and less vulnerable to psychological disorders in a country where they have to face different kinds of challenges on a daily basis.

Key words: Lebanese adults, resilience, locus of control, optimism, social support, age.

Locus of Control, Optimism and Social Support as Predictors of Resilience in an Adult Lebanese Sample

Resilience is a term that originated in the physical sciences referring to an object's capacity, when stretched, to return to its original form (Walsh, 2016). When it comes to the mental health field resilience has been defined by the American Psychological Association as "the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress" or "bouncing back from difficult experiences"("American Psychological Association," 2019). Accordingly a resilient person is someone who has the capacity to adjust and reach a certain psychological stability in the face of hardships and adversities. Whereas a vulnerable person is someone who tends to get stuck in the challenging situation which hinders one's psychological and interpersonal development.

It is commonly believed that victims of harsh experiences are destined to suffer from psychological and interpersonal difficulties. Yet, according to Bonanno (2004), most people tend to cope well with severe and extreme circumstances. Therefore resilience can be considered the norm not the exception. A study by Rusch, Shvil, Szanton, Neria, and Gill (2015) on 159high risk women previously exposed to assaultive trauma showed that 56 women did not have any past or current psychiatric diagnosis at the time of the study. And thirty-one of them had recovered from a previous psychiatric diagnosis following a brief symptomatic period. Both groups of women were considered resilient. Thus the study results indicated that the majority of women exposed to potentially traumatic experiences are capable of psychological resilience. Another study by Hou, Law, Yin, and Fu (2010) in China aimed at investigating trajectories of psychological distress in two-hundred thirty four colorectal cancer patients. Distress levels were measured at three different points in time; within twelve weeks of diagnosis, and again at three months and twelve months follow-ups. Four different distress trajectories were identified (chronic distress, delayed distress, recovery

and resilient), with 65-67% of the sample falling in the resilient category. Once again showing that the resilience trajectory is common among cancer patients.

So resilience is not similar to being invulnerable, it is rather about effectively working through difficulties in order to achieve a healthy psychological and interpersonal functioning. It does not equal not suffering, it is about struggling well and facing adversities with courage and motivation. It can be concluded that resilience exists because of adversities not in spite of them. A systematic review of the literature conducted by Domhardt, Munzer, Fegert, and Goldbeck (2015) and titled 'Resilience of survivors of child sexual abuse' indicated that the percentage of survivors who had normal level of functioning ranged between 10 to 53%. This review comprised a total of 37 articles publishes between 1995 and 2013 with a sample size of of at least 20 participants. The results of this review mean that even individuals who were victims of severe traumatic experience as children (such as sexual abuse) are not necessarily destined to a deterioration in their level of functioning or to the development of psychiatric disorders as adults. Humans have the capacity to endure, adapt and recover, and most of them at times do. Exposure to adversities and the capacity for psychological resilience are not mutually exclusive. The survival instinct innate in human beings provides them with the capacity to overcome and recover from trauma. All these findings challenge the previously prevailing deterministic assumption that early traumatic experiences are inevitably damaging. While many individuals previously exposed to trauma struggled in their life, many others overcame similar conditions and were able to lead functional, loving and productive lives.

Research on resilience can be traced back to the 1960s and 1970s. One of the first studies was conducted by Norman Garmsey who noticed that a group of children whose parents were diagnosed with schizophrenia exhibited healthy adaptive patterns. While scientists had dismissed these children as being atypical cases Norman was interested in identifying factors behind their high well-being. His focus on children who showed adaptive

patterns constituted a departure from the traditional medical model that is symptom based (S. S. Luthar, 2015). Since the time of Norman Garmsey drastic changes occurred to almost all aspects of life as the 21st century brought with it new challenges to the individuals as well as societies in general. Among these challenges we name the invention of social media as a revolutionized means of communication with problematic consequences like cyberbullying. Another challenge to the human race is the development of artificial intelligence with the potential of robots eventually replacing humans and the costs that this phenomenon might bring about. The widening gap between wealthy and impoverished people, the economic crises that have already hit different countries, the availability of nuclear weapons, the immigration and refugee issues and the spread of terrorism, all of these phenomena are worth being considered difficult challenges of the 21st century. In the face of all this chaos one might wonder whether and how individuals and societies are still able to survive and thrive!

Beside the big challenges on the global level, developing countries, in particular, face additional problems that are specific to each one of them. In Lebanon, for instance, Lebanese people are struggling on the financial level because the cost of living is gradually increasing whereas both income and job opportunities are very limited (Maloy, 2018). Fresh graduates are having great difficulty finding jobs and many of them end up leaving the country looking for a place where they can build a career and a future for themselves ("Lebanese Information Center," 2013). The Syrian crisis, which started in 2011, also had a worsening impact on the economic and social level of the country. In fact, it is estimated that as a result of the Syrian refugee influx in Lebanon, “some 200,000 additional Lebanese have been pushed into poverty, adding to the erstwhile 1 million poor. An additional 250,000 to 300,000 Lebanese citizens are estimated to have become unemployed, most of them unskilled youth” ("The World Bank," 2017). In addition to the economic problems, Lebanese suffer from many infrastructural and environmental problems such as the bad condition of roads and highways,

traffic, pollution, the high cost of health care, lack of water and electricity and most importantly the over 9 months that the country stayed without government(Kadi, 2018).

The stress that people are enduring everywhere around the globe and their constant worry about the present and future is being translated into physical and mental illnesses. Based on the 2016 National Survey on Drug Use and Health (NSDUH) approximately one in six US adults (which equals around 44.7 million American individuals aged 18 or older) in 2016 lived with a mental health disorder ("National Institute of Mental Health," 2017). Concerning Lebanon, in a study by Karam, Mneimneh, Dimassi, Fayad, Karam, Nasser, Chatterji, and Kessler (2008) it has been reported that the rate of mental health disorders among the Lebanese population is high with depression being the most common disorder. In fact, one in four Lebanese experience a mental health disorder at some point in their life. It is estimated that one third of the Lebanese would have had one or more psychiatric disorder by the time they reach the age of seventy. It is expected that the rates are even higher because some participants might have underreported their problems which are still considered taboo in the Lebanese society (Karam et al., 2008).

Therefore, with the growing number of people diagnosed with mental health disorders in Lebanon, it would be important to promote the development of resilience which serves as a protective factor against mental disorders and suicidality instead of solely focusing on implementing treatments after the detection of psychopathology. In a multi-institutional longitudinal study conducted on 1321 US medical students for the purpose of understanding the factors that protect against burnout, the results showed that resilient students (those who did not experience burnout at any point during the study) were less likely to have depression and had a higher quality of life (L. N. Dyrbye et al., 2010). That said, it certainly looks important to investigate the characteristics that boost the individual’s resilience in order to prevent psychopathology and ameliorate people’s quality of life and well-being.

Purpose of the Study

Based on the above, it can be concluded that the 21st century individual is being continually exposed to many different risk factors that jeopardize his/her physical and psychological functioning. In spite of that, however, existing literature reveals that resilience plays the role of a protective agent against the development of illnesses and suicidality and a booster in the context of well-being and quality of life (L. N. Dyrbye et al., 2010). Therefore, it is important to study individual characteristics that strengthen psychological resilience of people. The variables that have been chosen for this study build on previous research done in the field of resilience. While many studies have been conducted in an attempt to identify psychological factors associated with resilience among children, adolescents and war veterans (Lee, Sudom, & Zamorski, 2013; Pietrzak, Goldstein, et al., 2010; Yi-Frazier et al., 2015), this study addressed this subject within the context of the Lebanese general adult population. Among the main variables that have been found to be correlated with resilience were locus of control, optimism and social support (Diehl & Hay, 2010; Lopez-Fuentes & Calvete, 2015). So the purpose of this study was to investigate the role of these three main independent variables in predicting resilience (dependent variable) in the Lebanese adult population.

Rationale of the Study

To begin with, most studies on resilience were conducted on three main populations; children, adolescents and war veterans. Research on resilience in the adult non-clinical population however is still somehow limited. Clearly more studies are needed to widen our understanding of the process of resilience in the adult non-clinical population that is facing all kinds of everyday simple to complicated situations. Focusing on this type of population is

expected to provide a clearer picture of the qualities required for the person in order to be able to handle effectivelyeveryday challenges with resilience instead of vulnerability.

Moreover, very few studies have addressed the topic of resilience in Lebanon. In fact, one particular Lebanese study discussed aspects of personality that predict resilience. However, the chosen population was restricted to Lebanese university students. Results indicated that both positive and negative emotionality, achievement motivation, well-being, and stress reactions were found to promote everyday resilience among students (Daouk, 2016).

Finally, one of the main characteristics of this study is that it focused on the resilience of Lebanese adults. This is a population that has been exposed to major challenges including a series of wars, the most recent one in 2006 between Lebanon and Israel. Additionally, it is a population that faces all kinds of everyday struggles ranging from economic to social, political and environmental challenges. Hence, examining aspects of resilience in such a not very studied population carried with it obvious conceptual and practical rewards.

Background of the Study

Resilience

During the 1960s Norman Garmsey started exploring the concept of resilience when he noticed a group of children who exhibited healthy adaptive patterns despite the fact that their parents were diagnosed with schizophrenia. Since its introduction in the scientific literature, the concept of resilience has been approached from different perspectives. One theory conceptualized resilience as a trait while other theories conceptualized it as a process. The former described resilience as a personality trait that is fixed and stable over time. Thus specific individual differences determine why some people have a better performance in the face of adversity than others (Campbell-Sills, Cohan, & Stein, 2006). While the latter

described resilience as a dynamic process resulting from the combination of risk and protective factors (Rutter, 2007). In his writings, Rutter conceptualized that resilience is not stable across the lifespan, it can develop at any moment provided that the right resources exist. He added that personal, family and social resources play an essential role in the development of resilience as well as one's context and age. According to the literature, the theory of a dynamic process involving an interaction between vulnerability and protective factors is more acceptable to scholars and theoreticians nowadays. While risk factors exacerbate the negative impact of stressful experiences, protective factors reduce the negative impact of adversity and promote positive adjustment to stress (Herrenkohl, Lee, & Hawkins, 2012). At present recent research on resilience is heading in the direction of identifying the resources that help achieve resilience. For that reason many studies have been conducted in an attempt to identify different resources that foster positive adaption to stress and are associated with resilience (Ellingsen, Baker, Blacher, & Crnic, 2014; Phillips & Jones, 2014). Different studies were able to identify several factors that are related to one's ability to bounce back after hardships; some of the factors identified were hope and optimism (Bonney & Stickley, 2008), social support (Fredrickson & Branigan, 2005), self-esteem (Ong, Bergeman, Bisconti, & Wallace, 2006), personal control, spirituality (Jimenez, Montorio, & Izal, 2012) and other factors as well. Based on previous findings this study aimed at identifying specific predictors of resilience among Lebanese adult population.

Locus of Control and Resilience

The concept "locus of control" refers to an individual's belief about the cause of his or her experiences. There are two dimensions to the concept; internal and external locus of control. Someone with an internal locus of control believes that his or her actions can influence events and their outcomes. While a person with an external locus of control believes that outside forces (e.g. luck) determine what happens (Diehl & Hay, 2010).

In the literature many studies have addressed the locus of control concept in relation to resilience clearly indicating that someone with an internal locus of control is capable of more psychological resilience than a person with an external locus of control. In one of the studies, 286firefighters from the Washington Fire Districts participated in a project that was carried out by Sattler, Boyd, and Kirsch (2014) in order to determine what protective factors are associated with resilience and what risk factors are associated with posttraumatic stress.. The results of the 2014 study indicated that most firefighters (94% of them) did experience critical incidents during their career. Posttraumatic stress and posttraumatic growth (defined as resilience in this study) were negatively correlated once again showing how resilience can serve as a protective factor against developing stress reactions after exposure to trauma. Additionally, both internal locus of control and social support were negatively correlated with posttraumatic stress and positively correlated with posttraumatic growth (resilience). And finally two linear hierarchical regression analyses were performed and they showed that posttraumatic stress symptoms were negatively associated with 1) posttraumatic growth, 2) having an internal locus of control and 3) general social support (Sattler et al., 2014). Therefore the interest of this study was to examine locus of control as a predictor of resilience in the Lebanese adult population.

Optimism and Resilience

When it comes to the term optimism, it is defined by Segerstorm, Evans & Eisenlohr-Moul, 2011 as a "generalized positive outcome expectancy". Optimistic individuals tend to have favourable expectations for the future. They make positive cognitive appraisals of the circumstances and expect the best to happen (Segerstorm, Evans, & Eisenlohr-Moul, 2011). In the literature optimism has been linked to an attitude of hope that positively impacts a person's capability of dealing with stressors. In the face of adversity, optimism has been

associated with better psychological and physical well-being (Carver & Connor-Smith, 2010).

McGarry, Girdler, McDonald, Valentine, Lee, Blair, Wood, & Elliott (2013) sought to explore the influence of regular exposure to paediatric medical trauma on health care professionals and investigate factors associated with resilience in this population. The sample consisted of 54 health professionals. For this purpose symptoms of depression, anxiety, stress, burnout, post-traumatic stress disorder, secondary traumatic stress, compassion satisfaction, resilience and coping skills were measured and compared with published norms. In general, the participants in this study reported experiencing more symptoms of secondary traumatic stress than the comparative group. The results indicated that paediatric medical trauma can have negative impact on the well-being of professionals working in this field, particularly those under twenty-five years of age who used more non-productive coping strategies, and tended to have more symptoms of depression. The most relevant finding is that resilience in the population chosen for this study was strongly positively associated with the variable of optimism (McGarry et al., 2013). Therefore, based on previous studies (Fang et al., 2015; Lamond et al., 2008; Pieters, 2016) that have linked optimism to resilience, this study aimed to examine optimism as a predictor of resilience in the Lebanese adult population.

Social Support and Resilience

The presence of individuals or group of individuals who care and support in times of need, is known as social support. Emotional support is one of the many dimensions of social support, while others include informational assistance, physical kindness, intimacy and comfort. Social support can also be provided by different sources including family, friends, professionals and colleagues through social interactions (Hale, Hannum, & Espelage, 2005).

A systematic review and meta-analysis was conducted with the objective of estimating the prevalence of depression and suicidal ideation in medical students. It included 159 studies published before September 17, 2016 in 47 countries. It was concluded that this population experienced high rates of depression and suicidal ideation (Rotenstein et al., 2016). Recently, another study was conducted by Thompson, McBride, Hosford & Halaas, 2016 addressing the concept of resilience among medical students and the type of resources that help medical students show resiliency to mental health issues despite all the challenges they face during their college years. This was a cross-sectional study of students at the University of North Dakota 49%of the respondents had burnout and 17% had moderate to severe depression. Of depressed respondents81% were undiagnosed. In the results, poor social support from family, friends and fellow medical students was associated with significantly greater risk of depression whereas high social support was proven to be associated with psychological resilience (Thompson, McBride, Hosford, & Halaas, 2016). Therefore, it was the purpose of this study to inspect the impact of social support on the resiliency in a Lebanese non-clinical adult sample.

The three variables together

A cross-cultural study was carried out by Jimenez et al. (2012) for the purpose of examining the psychological and social variables that mediate the negative effect of stress on life satisfaction and hence fostering the process of positive adaptation in the adult life cycle. Life satisfaction is considered one of the different indicators of resilience (Maercker, Hilpert, & Burri, 2016). The authors believed that the best population that could be selected to study resilience was the population of older adults (both Mexicans and Spaniards) who have been exposed to severe traumatic events. The results of two multiple regressions specified five main psychological and two social predictors of life satisfaction: internal control, self-esteem,

optimism, acceptance coping, coping through seeking emotional support, social contacts and perceived economic difficulty (Maercker, Hilpert, & Burri, 2016).

Studies that combine locus of control, optimism and social support together in the context of adult resiliency are lacking except for the one study mentioned above. Clearly while there is a large number of studies examining the correlation between these variables and resilience, only a limited amount of studies have focused on examining these variables as predictors of resilience. Therefore, the contribution of this study was investigating whether these variables are predictors of resilience in an adult population that did not necessarily face extreme traumatic events. Moreover, resilience was measured directly using the Connor Davidson Resilience Scale instead of measuring its indicator (as Jimenez et al. did by measuring life satisfaction) and the methodology that was adopted and the scales that were used were different from those used by Jimenez et al.

Age and Resilience

Very few studies have investigated the relationship between age and resilience. The ones found in the literature indicate that older individuals are more resilient than the younger ones (Monin, Mota, Levy, Pachankis, & Pietrzak, 2017). By comparing resilience in those aged over 64 years and those aged less than 26 years, it was found that overall resilience was higher in the older adults (Gooding, Hurst, Johnson, & Tarrier, 2012). To be more specific, the authors found that the older adults were the more resilient with respect to problem solving and emotional regulation ability whereas the younger adults had more resilience related to social support. Therefore, this paper contributed to the literature by adding to the few studies a new study that examined the effect of age difference in the context of resilience.

The Problem Statement

Based on the various studies that have examined the concept of resilience in different populations, it was noticed that locus of control, optimism and social support have a significant impact on how resilient an individual can be in the face of adversities. In Lebanon, the living conditions have become difficult for the majority of the Lebanese population. Problems exist on many levels; economic, social, financial, political and environmental. Additionally the recurrent exposure to war situations has taken its toll on the Lebanese population. In parallel, it has been found that the rate of mental health disorders among the Lebanese population is high with one in four Lebanese experiencing a mental health disorder at some point in their life (Karam et al., 2008). Hence, it seemed essential to study factors that might contribute to enhancing the psychological resilience in the Lebanese adult population that has been undergoing recurrent stress, traumas, and difficulties. Therefore, and based on all the above discussed literature, the following hypotheses were tested:

Hypothesis 1: The more internal the person's score is on the Locus of Control scale, the higher the score is on the resilience scale.

Hypothesis 2: There is a positive correlation between optimism and resilience.

Hypothesis 3: There is a positive correlation between social support and resilience.

Hypothesis 4: There is a positive correlation between age and resilience.

Hypothesis 5: Locus of control, optimism and social support are significant predictors of resilience.

The Professional Significance of the Study

Given the limited number of studies addressing resilience in non-clinical adult samples, such a study would help clarify the process of resilience in this population. It would

show how individuals who have not necessarily experienced major traumatic events might experience resilience and what are thefactors that might contribute to their ability to show resilience in the face of daily stressors?. Moreover, studies on resilience in Lebanon are not numerous. Hence a study on the Lebanese individuals would help in determining if what applies to other populations in the context of resilience also applies to the Lebanese population.

The importance of studying resilience and its predictors is attributed to the fact that resilience is not fixed and it not either present or absent. It can be developed, learned and strengthened in different ways (Bakker, Lyons, & Conlon, 2017). Therefore, the results of this study could provide an opportunity for developing strategies to teach and enhance these psychological and social resources. On the community level awareness campaigns and training programs can be developed for the purpose of having a more resilient population. The same would apply to schools and universities because children and adolescents today will be the adults of the future and they need to be able to deal with the adversities of life especially in a country with so many challenges. On the individual level, the findings of this study could benefit mental health practitioners by allowing them to include in their therapeutic work with clients strategies that enhance positivity, internality and the skills for a better social life. Mache, Vitzthum, Klapp, and Groneberg (2015) showed that resilience training programs are feasible to develop and effective in improving post-intervention scores on measures of resilience.

That kind of studies opens the window for other researchers who are interested in studying resilience and encourages them to explore different aspects of it. There are certainly other factors that interact together in the process of resilience and that are still unexplored specifically in context of the Lebanese population. Hence the importance of conducting such studies in the future.

Overview of Methodology

The study was a quantitative one applying correlation, regression and t-test to test the stated hypotheses. A convenient sample of 292 Lebanese living in Lebanon was assessed through self-report measures over several factors: resilience, locus of control, optimism and social support. The age of the participants was 18 years and above. Both males and females were approached in individual or group settings by the researcher. Participants were sampled from some Lebanese universities (mainly Haigazian), work companies, coffee shops and other public places where the researcher had access to both young adults and older adults. Moreover, snowball sampling was used and therefore any Lebanese adult person that the researcher could have access to had the chance to be a participant in the study including family, friends, relatives and acquaintances. After explaining briefly the purpose of the study to the participants and reassuring them that their responses will be anonymous and confidential, they filled out a consent form as a form of accepting to participate in the study. They also filled out a demographic questionnaire and four scales: Connor-Davidson Resilience Scale (CD-RISC), Rotter's Locus of Control Scale (IE), Revised Life Orientation Test (LOT-R), Multidimensional Scale of Perceived Social Support (MSPSS). Since the scales were used in their English form, it was important to make sure that the participants understood the language level of the questions asked.

Limitations

One of the limitations of this study was that the study's scales were in the English language. This implied that only individuals who could understand English which is not the main language in Lebanon were able to participate in this study. One consequence might be that individuals belonging to low socioeconomic groups might not have been able to participate.

Chapter 2

Review of Literature

The purpose of this study was to investigate the relationship between different variables, mainly, age, locus of control, optimism and social support on one hand, and psychological resilience on the other hand among a sample of Lebanese adults residing in Lebanon. Therefore, in order to provide the needed context for the examined hypotheses in this paper, a review of literature is presented in this chapter.

Theoretical Background of "Resilience"

Many nuances exist for the term resilience however there is a general consensus of defining it as a process reflecting positive adaptation to stress, trauma and adversity (A. S. Masten & Powell, 2003). Some experts believe that after having undergone a difficult experience, especially in old age, resilience is considered as being able to maintain one's physical and cognitive functions (Greve & Staudinger, 2006). However, others believe that in order to consider a response as resilient, the individual must show a certain psychological growth (Bonanno, 2004). It is agreed upon now that resilience is considered the normal response to adverse events, instead of the development of psychopathological disorders, and therefore this complex process deserves more attention by the research community (A. S. Masten, 2007). This viewpoint is in line with the positive psychology movement that was initiated by P. Seligman and Csikszentmihalyi (2000) which stated that seeking factors to promote the adaptation of individuals who have experienced adverse events is of great importance.

There has been many perspectives for studying resilience since its introduction to the scientific literature. According to Masten (2007) some researchers believed it was best observed through an adequate psychological development despite the presence of risk factors

that pose a threat to such development. Others defined it as functioning well under adverse conditions. And others even believed it could be witnessed through recovering normal functioning after a trauma or adversity (A. S. Masten, 2007). Even the theoretical postures and ways of understanding resilience were divided between considering it as a personality trait or a dynamic process and both theories were accepted in the literature.

Over the past several decades the construct of resilience has been receiving increasing attention as a representation of positive adaptation to stress. Ever since it was introduced the construct has been considered of great importance from both the theoretical and applied perspective. From a theoretical point of view, resilience by definition is manifested as a positive adaptation to life's situations that usually lead to maladjustment. In other words resilience encompasses atypical processes (Cicchetti & Cohen, 1995). From an applied perspective, instead of the development of treatments to repair damages it is much more efficient to work on prevention when dealing with at-risk groups by promoting resilient functioning in the early course of development (S. Luthar, Cicchetti, & Becker, 2000).

Early Studies on Resilience

The roots of the research on resilience go back to the 1960's and 1970's when Norman Garmsey noticed among the children of parents diagnosed with schizophrenia a subset of children who actually exhibited adaptive patterns. He and his colleagues were interested in identifying factors behind the children's well-being when other researchers had considered them exceptional cases unworthy of being studied. His approach with its focus on factors that promote resilience in the context of adversity constituted a departure from the symptom-based medical models of that time. Moreover, E. James Anthony and Michael Rutter were two scientists who were interested in studying children of schizophrenic during the times of Garmsey. Anthony (1974) described a group of "invulnerable" children who

were able to resist becoming submerged in a parent's psychopathology while still maintaining compassion for this parent. Rutter as well, in 1979 described a group of resilient children in the same type of population characterized by competence, effectiveness and creativity.

Murphy and Moriarty (1976) targeted the population of children exposed to naturally occurring traumas (e.g. death of a family member). Their aim was to examine the vulnerability and coping patterns of these kids through rich clinical observations. They were able to identify several attributes in common between the children; they were able to relate well to others, experience a range of emotions and regulate the expression of their emotions. They had what they called social charisma. A landmark in the study of resilience was one conducted by Werner & Smith (1992) on infants at risk on a Hawaiian island. She longitudinally followed the lives of 700 multi-ethnic children of plantation workers. Due to early exposure to serious risk factors (e.g. familial alcoholism, mental illness, violence…etc.) one third of children were considered at risk. Around the age of 18, two third of those considered at high risk had done poorly having troubles in different areas of their life. However the remaining one third had developed into caring and competent adults. Even when followed up in their midlife they were still living well. Main protective factors that distinguished between children functioning well and those doing poorly were the following: active problem solving, having an ability to perceive difficult things in a constructive way, an ability to take in and make meaning of events through the use of faith, an ability to foster positive interactions with others, having good familial ties and a good support system outside home (Werner & Smith, 1992). This study constituted a new additional evidence that despite troubled childhood or teen years there is always potential for one to turn things upside down and develop resilience across adulthood.

One of the major studies in the 1980s on resilience was conducted by Micheal Rutter where he clarified important conceptual issues related to the concept. He presented examples

of a class of protective processes with interactive components. For instance he found that gender in a certain case affect the way an individual reacts to family discord where boys were found to react more severely to this kind of stressors than girls did. Therefore in this case being female is considered protective. Rutter had a key contribution in this field by providing one of the first discussions on the important significance of identifying processes in resilience and suggesting ways to reduce the risk effects. This could be achieved by altering exposure to risk, changing the experience of risk, raising self-esteem, and providing turning points and opportunities (S. S. Luthar, 2015).

In the 1990s there were two main particular changes in the conceptual approach to studying resilience. After the early studies on the construct had focused on identifying personal qualities of resilient children (e.g. autonomy), the work in this area evolved to target the locus of resilience. Initially resilience was considered innate in the child who is resistant to stress like a steel doll that would not break (Anthony & Cohler, 1987). Eventually, researchers began to believe that resilient adaptation could also derive from factors external to the child. It then results from an interaction between nature (internal) and nurture (external) and involves a dynamic interplay of multiple risk and protective processes. Risk factors usually increase the likelihood of encountering challenges across the lifespan whereas protective factors buffer the negative effects of adversity. Thus the theory developed into including three sets of factors that contribute to a child's resilience: attributes of the child, aspects of the family and characteristics of the wider social environment (Werner & Smith, 1992). So genetic vulnerabilities and life's stressful events could be counteracted by positive influences.

The second change consisted of conceptualizing resilience as fluctuating over time not fixed forever. The term "resilient" replaced the term "invulnerable" that was used in the early research and which implied an unchanging state. Gradually researchers began to

recognise that resilient/ positive adaptation to stress is not permanent. It is rather a developmental progression with different vulnerabilities and strengths developing as life's circumstances change (Garmezy & Masten, 1986). It was also considered that resilience shows some domain specificity instead of being an across the board phenomenon. An at-risk individual can show remarkable strength in some area of life but also display important deficits in other areas. (S. Luthar, Doernberger, & Zigler, 1993). Thus scientists started to refer to educational resilience, emotional resilience…etc.

With time the popularity of the concept of resilience increased and it was given more and more attention. This was reflected in the number of publications on this topic and also the diversity of at-risk situations examined. By the year 2000 resilience had been considered in the context of adversities ranging from parental mental illness, chronic illness, maltreatment, socioeconomic difficulties, community violence and catastrophic life events (Fitzpatrick, 2017; Robottom et al., 2012) .

Locus of Control vs. Resilience

As was mentioned in the previous chapter, Rotter's conceptualization of the locus of control stated that there are two dimensions to the concept; internal and external. Based on his conceptualization Julian Rotter developed in 1996 a scale measuring these two dimensions; The Rotter's Internal-External locus of control scale (Diehl & Hay, 2010). A few years after Rotter's theory, Levenson (1976) suggested that the locus of control is a multidimensional construct. On basis of factor analytic studies she differentiated between two types of external control: believing in Chance and in Powerful others while internal locus of control remained as it is. She proposed that people who believe in an unordered and chaotic world think differently than those who believe in an ordered world controlled by Powerful others (Kourmousi, Xythali, & Koutras, 2015). Consequently she created a new scale which

is the Levenson multidimensional locus of control scale. Levenson's theory was also accepted in the world of scientific research. For instance in Japan a study was carried out in 2011 investigating the predictors of a lifestyle to prevent or combat the metabolic syndrome among workers in a Japanese manufacturing plant.. For that purpose the researchers used the multidimensional health locus of control scale (MHLC) modelled after Levenson's 1973 internality, powerful others and chance scales. In addition to the positive correlation between internal locus of control and a lifestyle to prevent or combat metabolic syndrome, the results showed an interesting difference between the two subtypes of external locus of control. While the Powerful others health locus of control constituted a significant predictor of a lifestyle to prevent or combat metabolic syndrome, Chance health locus of control was found to be negatively correlated with that kind of lifestyle (Kudo, Okada, Tsunoda, Satoh, & Aizawa, 2011). And the difference between the two subscales of externality when it comes to leading a certain healthy lifestyle was proven significant.

However, most studies that addressed the relationship between locus of control and resilience mainly relied on the theory of uni-dimensionality of the locus of control. Results of those studies clearly indicated that psychological resilience was related to having an internal locus of control and that having an external locus of control makes the person more vulnerable to developing psychological problems (Sattler et al., 2014).

Based on the strength-based model which has introduced the concept of resilience in the rehabilitation literature, a study was conducted in 2013 in South Australia for the purpose of examining biopsychosocial factors that contribute to the process of resilience in an adult community sample after undergoing a spinal cord injury. . The results indicated that 58% of respondents reported moderate to high levels of resilience. When a Pearson correlation was calculated, it indicated a negative correlation between resilience and psychological distress. The results also indicated a negative correlation between resilience and the scores on the

Locus of Control of Behaviour Scale. This means that individuals high on resilience are also high on internal locus of control. Thus it can be concluded that most people adjust well to the trauma of a severe and permanent neurological injury. And also individuals who are resilient are more inclined to acknowledge personal responsibility for their behaviour than those who are not high on resiliency (Kilic, Dorstyn, & Guiver, 2013).

With the aim of exploring the relationship between resilience, self-perception, and locus of control a study was conducted by Cazan and Dumitrescu (2016), who approached psychological resilience from the perspective of its protective factors, i.e., characteristics of the individual that diminish the negative effect of adversity. This study included two protective factors: locus of control and self-esteem. The sample consisted of 156 adolescents from different high schools in Romania. Sixty-eight of them were girls and eighty-eight were boys with a mean age of 15 years. The results indicated that highly resilient adolescents are more internally oriented and have higher levels of self-esteem; however, there were no gender differences when it comes to the variable of resilience. When a mediation model was performed in order to determine the effects of traits like locus of control and self-perception on resilience, the path analysis showed significant direct and indirect effects between the variables leading to the conclusion that resilience is not an innate trait that stays stable during lifetime (Cazan & Dumitrescu, 2016). It can be concluded that internal locus of control and self-esteem are personal protective factors of the resilient individual (Fayombo, 2010). Other previous research in the field has also shown that an increase in the individual's self-esteem leads higher levels of resilience and that the more control the person perceives over a situation, the more he/she will be able to adapt (Karatas & Cakar, 2011)

Therefore, based on the discussed literature so far, the uni-dimensionality theory of locus of control was adopted in this study and the Rotter's was the scale chosen to measure this variable. Thus we hypothesized that having an internal locus of control is positively

correlated with resilience while having an external locus of control is negatively correlated with resilience.

Optimism vs. Resilience

A study was conducted by Sabouripour and Roslan (2015) in Malaysia on 291 international students of University Putra, Malaysia in order to address resilience and optimism. More than half of the participants were between 26 and 29 years old. Twenty-one percent were in the age group of 22-25 and thirteen were 30 and older. Pearson correlation was utilized and it illustrated a significant positive and strong relationship between optimism, social support and resilience. The results of a linear regression analysis showed that the two predictors explained about 52.8% of the variance in resilience. The conclusion was that optimism and resilience accompany each other in unfavourable situations and hence students should try to enhance their optimism levels as well as build a strong social support network; both optimism and social support serve to enhance their resiliency levels (Sabouripour & Roslan, 2015).

Resilience can be witnessed even in the most traumatic situations. Despite the considerable amount of studies that document the impact of PTSD after combat (Monson, Fredman, & Adair, 2008), not all people who experience traumatic events develop PTSD (Resnick, Kilpatrick, Dansky, & Best, 1993). To examine the relationship between resilience and optimism in extreme cases of trauma a study was conducted by Segovia et al., (2012). It was a 37-year longitudinal study that aimed to study resilience in repatriated prisoners of war (RWP); that is, those who have experienced prolonged captivity, malnourishment, physical and psychological torture. The study was guided by the hypothesis that demographic, psychological (such as optimism) and physical factors contribute to resilience and only data from the Vietnam era participants were included in this retrospective analysis in order to

ensure uniformity in the sample on many levels (e.g. war specific stressors). The sample consisted of 224 military service personnel. The results clearly indicated that optimism significantly predicts resilience. In fact optimism was the strongest predictor in the categorical approach. This means that the most optimistic were 5 times more likely to be resilient than the least optimistic. In fact with a 10-point decline in the optimism-pessimism score there was a 42% increase in the likelihood of resilience. The results indicated that what explains how one fared after a trauma was not merely the type of trauma, it was rather the type of person experiencing the trauma, even in the most horrific of circumstances (Segovia, Moore, Linnville, Hoyt, & Hain, 2012).

Another study that addressed the relationship between optimism and resilience was one conducted by Riolli & Savicki (2002) in the context of the Kosovo war.. The sample for this study consisted of 112 individuals; 57 were males and 55 were females. They belonged to three different groups; 38 were Kosovar refugees who had escaped Kosovo and were living in Albania, 41 Albanians who were providing help for refugees in Albania, and 33 Albanian who had migrated to the US before the refugee crisis. The age of the participants ranged from 17 to 65 with an average of 34 years. Post hoc analysis showed that Kosovar were higher than Albanians and immigrants on anxiety, hostility and phobic anxiety. They were also higher than immigrants but not than Albanians on depression. Interestingly, the overall psychological adjustment of all the three groups was not solely related to the number of stressful events they had been exposed to. It is only when Events was combined with optimism-pessimism, Coping and Big Five that significant relations with psychological adjustment were noticed. Briefly stated, the results designated that resilience was related to a combination of higher optimism, openness to experience, extraversion, conscientiousness and control coping (Riolli & Savicki, 2002).

In line with the above discussed literature, the study hypothesized that optimism is correlated with higher scores of resilience while pessimism was correlated with lower scores of resilience.

Social Support vs. Resilience

A systematic review of the literature was conducted in the year 2011 for the purpose of determining factors related to predicting and promoting resilience in the physically ill. The findings showed that social support was among the main psychological factors associated with resilience (D. E. Stewart & Yuen, 2011).

Before we tackle a specific study that addressed the concepts of resilience and social support in the context of medical students, it is important to give a brief description of this population. Previous studies on the population of medical students have shown that those students begin medical school with better mental health than their peers, but during medical school they have a higher prevalence of psychological distress. And those students often do not seek help for mental health concerns due to the fear of stigmatization. In fact one study in 2011 found that 82% of medical students experienced at least one form of psychological distress during their college years and 58% of students experienced greater than or equal to three forms of distress (L.N. Dyrbye et al., 2011). Burnout is prevalent among this population and predicts serious consequences like dropping out of medical school and suicidal ideation (Mazurkiewicz, Korenstein, & Fallar, 2012).

The following study by Dyrbye et al., (2010) aimed to examine the concept of resilience in medical education and understand how individual factors (including social support) and learning environment can protect against burnout and improve students ‘resilience. It was a longitudinal study with a total of 1321 medical students. The Connor Davidson Resilience scale and the Multi-dimensional Scale of Perceived Social Support were

used along with other standardised instruments that measure burnout, quality of life, fatigue and stress. Resilient students were compared to vulnerable students. Resilient were considered those who did not have burnout at any point. Vulnerable were those who reported burnout at one or both time points (2006-2007). They also examined the difference between students who recovered and those who were chronically burned out. They employed a logistic regression modelling and the results indicated that resilient students had a higher quality of life and were less likely to be depressed. They reported higher levels of social support and experienced their environment more positively than vulnerable students (L. N. Dyrbye et al., 2010).

Pietrzak, Johnson, et al. (2010) aimed to explore the relationship between resilience, social support (divided into two categories which are unit support and post-deployment social support), PTSD and depressive symptoms in a sample of war veterans 2 years after they returned from deployment. The importance of this study lies in the fact that a high rate of PTSD and depression had been previously found among war veterans (Tanelian & Jaycox, 2008). The sample size was 272 participants with a mean age of 35 years. In the results, there was a significant negative correlation between resilience and PTSD, depressive symptoms and psychosocial difficulties. And post-deployment social support (which refers to the emotional support and instrumental assistance provided by a soldier's family, friends and community in general) correlated positively with resilience. Resilience also fully mediated the relationship between unit support (the relationship between a soldier and hi/her unit) and both PTSD and depression. Interestingly as well, unit support predicted increased post-deployment social support (Pietrzak, Johnson, et al., 2010). Unit support may boost resilience by promoting feelings of self-efficacy and personal control, active coping styles and meaning making in the face of stressful experiences. Consequently it would lead to a decrease in

PTSD and depressive symptoms (Cole, Bruch, & Vogel, 2006; Sumer, Karanci, Berument, & Gunes, 2005).

Therefore, one aim of this study was to examine if social support buffers against stress of daily life not just traumatic experience in a sample of Lebanese adults.

The three variables together

Locus of control, optimism and social support were found to be related to psychological resilience in all the studies mentioned in this thesis. While most studies had focused on one of these variables in relation to resilience, some have combined two variables together. However studies that have addressed all three variable together are very rare.

For the purpose of examining the psychological and social variables that mediate the negative effect of stress on life satisfaction and hence foster the process of positive adaptation in the adult life cycle a study was conducted by Jimenez et al. (2012). In their study they focused on the concept of life satisfaction which is considered one of the different indicators of resilience (Maercker et al., 2016). Life satisfaction is the cognitive construct of subjective well-being. It includes competencies such as control beliefs, emotional regulation, autonomy, problem solving, and positive emotions (Gow, Pattie, Whiteman, Whalley, & Deary, 2007). The authors believed that the best population that could be selected to study resilience was the population of older adults (both Mexicans and Spaniards) who have been exposed to severe traumatic events. The reason they picked a population of older adults is that they believed that at advanced ages people would have been exposed to different stressful conditions which place them in situations of high risk. The data were collected individually through a self-applied paper-and-pencil form for participants aged between 18 and 64 years so the entire adult life cycle was addressed. For those above 65 years the questionnaires were administered in the form of an interview after conducting an MMSE. As a first step two

multiple regressions were performed which allowed the researchers to determine psychological and social variable that could predict life satisfaction. This calculation resulted in five psychological and two social variables that successfully predicted life satisfaction; internal control, optimism, self-esteem, acceptance coping, coping through seeking emotional support, perceived economic difficulties and social contact. The five psychological variables explained 50.8% of life satisfaction and 2.4% was explained by variables from the social domain. Another two regression analyses were performed. The first one confirmed that stress explained part of the variance in life satisfaction. And the second one indicated that the five psychological variables and 2 social variables in the model mediate the negative effect of stress on life satisfaction.

In health promotion resilience is an important factor. Thus a recent research contemplated publications conducted from June 1993 until June 2013 on resilience and chronic disease. Twelve articles met the inclusion criteria and they clearly pointed toward a negative relationship between resilience and mental health disorders (e.g. depression, anxiety…etc.) and a positive relationship between resilience and quality of life and health promoting behaviours (Cal, Ribeiro de Sá, Glustak, & Santiago, 2015).

Another systematic review of resilience and related concepts in the physically ill was conducted by D. E. Stewart and Yuen (2011) since physical illness is a common adversity throughout life. The purpose was to determine factors associated with, predicting or promoting resilience. So an electronic search of PsychInfo, Medline and CINAHL database between 1950 and 2009 was performed. The keywords used were related to resilience and physical illness. 475 articles were retrieved and only 52 met the inclusion/exclusion criteria. Forty one studies were quantitative, 10 qualitative and one mixed method. Most studies included participants of both sexes. Internal locus of control was among the psychological factors that were found to be associated with resilience, psychological adjustment and

positive life orientation (Becker & Newsom, 2005). Yet only one study (rated poor) found that in relation to resilience there was no significant difference between internal and external locus of control (Dalal, 2000). Optimism was also found to be a predictor of psychological and physical well-being (Sato, Yamazki, & Sakita, 2008). Some participants reported that anticipation of their healthy self in the future helps them to look past current difficulties (Haynes & Watt, 2008). In the studies that were retrieved and included in the review social support was also predictive of various aspects of resilience (Orbuch, Parry, & Chesler, 2005). Also qualitative studies found that social support was crucial to successful living with illness (Kralik, Loon, & Visentin, 2006). Moreover, some patients in these studies did not only report that they were able to maintain or regain their well-being after an illness, instead they emphasized personal growth and positive changes as a result.

Therefore, based on the literature review, this study aimed to investigate whether the variables presented in the literature (locus of control, optimism and social support) as being associated with resilience were also predictors of resilience in the sample chosen for this study. The need was to check whether they are predictors of resilience in an adult population that did not necessarily face extreme traumatic events. Moreover, resilience was measured directly using the Connor-Davidson Resilience scale instead of measuring its indicator (as Jimenez et al. did by measuring life satisfaction) and the methodology that is adopted and the scales that are used were different from those used by Jimenez et al.

Age vs. Resilience

Another purpose of our study was to find out whether or not resilience levels vary over the lifespan. More specifically the aim was to check if older adults were more resilient than younger adults or vice versa. Thus the variable of age was included in this study in order to examine its effect on resilience.

Many studies addressed the variable of age and its relationship to resilience. For instance, in order to examine whether there are age differences in the association between veterans' LGB status and mental health, a study was conducted by Monin, Mota, Levy, Pachankis, Pietrzak, (2017). According to the authors of this study sexual minority individuals are at a greater risk of developing mental health difficulties. While some argue that LGB adults are more protected from mental health difficulties because with time they have learned coping strategies to deal with the stigma associated with their status (Friend, 1991), others believe that LGB adults are at a greater risk for mental health problems because of repeated stigma-related stressors over the lifespan (Fredriksen-Golden & Muraco, 2010). Participants of this study were recruited through national random samples. The assessment included questions about the sexual status of participants, questions about socio-demographic and military characteristics, screens for depression, anxiety and PTSD. It also included items assessing lifetime suicide attempt, current suicidal ideation, structural and functional social support. The results showed that younger LGB veterans were more likely to experience lifetime depression, current depression, and PTSD than older LGB. Thus the younger LGB were more vulnerable to mental health disorders. Older LGB showed more resilience, they had low levels of mental health problems but they were at greater risk for social isolation (Monin et al., 2017). The findings of this study are consistent with others in literature which had indicated that younger LGB adults report greater physical health symptoms (Takayanagi et al., 2014). The finding that older LGB veterans had the smallest social support network is in line with past findings with older LGB civilians. It could be due to different factors (e.g. their peers are more likely to have died than younger ones). However, this does not necessarily imply that their network members are less emotionally close.

Another study was conducted by Gooding, Hurst, Johnson, Tarrier, (2012) in order to investigate psychological resilience in older adults compared with that of young adults.

Developing and maintaining psychological resilience in the years of late adulthood is challenging because this is a time associated with a greater incidence of chronic physical illnesses, neurological conditions and psychological stressors (Lamond et al., 2008; Nygren, Alex, & E., 2005). Geriatric depression is an enduring health concern. Thus it was important to examine the relationship between depression and resilience in the following study. The results of this study indicated that older adults were more resilient in general and especially for the emotional regulation and problem solving subscales of the resilience. On the other hand resilience related to social support was higher in the young adult group. Many other findings resulted from this study, however only those mentioned above were relevant to our study. To conclude, it is crucial to maintain resilience-related skills across the lifespan. However, it must be noted that different psychological processes underlie resilience in different stages of adulthood Gooding et al. (2012).

Another study conducted by Cohen et al., in 2011 and published in 2016 aimed to explore variations in the level of community resilience along the lifespan. Community resilience is defined as the community's capacity to overcome crises. Enhancing it in pre-emergency periods boosts the capability of communities in emergency situations (Dalal, 2000). According to Wild, Wlis, and Allen (2011) the percentage of older adults in the general population is increasing. There are two different approaches when it comes to the ageing population during times of change and crises. On the one hand it is considered as a vulnerable population. On the other hand, their presence is considered as a strength to the community's resilience. Thus Cohen's study aimed to explore the capacities of the ageing populations in the face of change.. It was conducted in 2011 in small to mid-size town in Israel using both door to door surveys and online questionnaires.. The sample consisted of 885 participants with an average age of 45.28 years. The results of this study showed a significant increase in the community resiliency scores in the age group of 61-75 years

compared with younger age groups (specifically in the mid-size communities) (Cohen et al., 2016). Therefore it can be concluded that older people in good health can have a positive contribution in building community resilience. So older age is not just about medical needs and years of dependency because older people young at heart" can be a valuable resource for their community. Based on those findings we hypothesized that age correlated with higher resiliency scores.

Therefore based on the above discussed literature, the study examined the following hypotheses:

Hypothesis 1: The lower the person's score is on the Locus of Control scale (the more internal), the higher his/her score is on the resilience scale.

Hypothesis 2: There is a positive correlation between optimism and resilience.

Hypothesis 3: There is a positive correlation between social support and resilience.

Hypothesis 4: There is a positive correlation between age and resilience.

Hypothesis 5: Locus of control, optimism and social support are significant predictors of resilience.

Chapter 3

Method

This chapter is a review of the research methodology that was used in this study. It comprises the description of the sample population, the procedure used to administer the tests, a detailed description of the instruments used, an explanation of the data analysis and finally, the ethical considerations that were taken into account.

Participants

The participants chosen for this study were all Lebanese adults (according to what they reported) living in Lebanon at the time the study was conducted; all of them spoke English, the language of the scales so the scales were not translated into Arabic. The sample was a convenient sample of Lebanese individuals above the age of 18. They were assessed on a set of demographic variables (Table 1) and through a set of self-report measures over several factors: resilience, locus of control, optimism and social support.

Table 1
Frequency and percentage of demographics (N=292)

Variable	f	%
Gender		
Male	97	33.2
Female	194	66.4
Education		
High school degree	46	15.8
Technical degree	21	7.2
BA	131	44.9
MA/MBA	69	23.6
PhD	13	4.5
Other	8	2.7
Student		
Yes	93	31.8
No	199	68.2
Work		
Yes	217	74.3
No	75	25.7
Marital status		
Single	178	61
Married	104	35.6
Divorced	1	0.3
Widowed	2	0.7
Other	7	2.4
Age groups		
Below 30	167	57.4
Above 30	124	42.6

Materials

The first section of the questionnaire package comprised an information letter and a consent form (see Appendix A). The information letter served to introduce the study to the participant and to clarify the participant's role and rights related to being part of the study. The consent form was used to make sure that the person is willingly participating in the study and has read and approved all the terms and conditions as well as to reassure the participant that the responses will remain anonymous and strictly confidential. This section was followed by a demographics questionnaire which covered the questions regarding age, gender, educational background, work and marital status. There was also one question which assessed

whether the participant was a student at the time the study was conducted or not (see Appendix B). A question about the participant's perceived level of religiosity was included at the end of the demographic section. Although no hypothesis was formulated based on this variable, it was added for possible tentative explanation (see Appendix C).

Four psychological tests namely, the Connor Davidson resilience scale (CD-RISC), the Life Orientation test- Revised (Lot-R), the Rotter's IE scale, and the Multidimensional Scale of Perceived Social Support (MSPSS) followed the demographic section in the questionnaire package (see Appendices D, E, F, and G). These tests are described in details in the section below. It is important to note that all the materials used in this study were in English, obviously one limitation of the study.

Connor Davidson – Resilience Scales (CD-RISC): It is a brief, self-rated measure of 25 items developed by Connor and Davidson in 2003 for use with the adult population as a measure of stress coping ability. For example: "I am able to adapt when changes occur", "I am not easily discouraged by failure". All items are answered using a 5-point Likert scale format (0=not true at all, 1-rarely true, 2=sometimes true, 3=often true and 4=true nearly all of the time). Scores my range between 0 and100. Higher scores indicate greater levels of resilience. Based on factor analytic studies the scale comprises five factors: personal competence, tolerance of negative affect, positive acceptance of change and secure relationships, control and spirituality. The scale was evaluated for reliability, validity and factor structure. Data from the original validation indicate that it has sound psychometric properties and it differentiates between individuals with greater or lesser resilience. It has good internal consistency (Cronbach's alpha 0.89) and test-retest reliability (r = 0.90) with the general population. The scale exhibited validity relative to other measures of stress and hardiness. It also differentiated between levels of resilience between populations that are thought to be different on that variable, for example the general population versus patients

with anxiety disorder (K. M. Connor & J. R. Davidson, 2003). The scale has been tested in general population as well as in clinical settings which suggests that there are many potential applications for its use (Ahern, Kiehl, Sole, & Byers, 2006). In fact, a recent review of nineteen resilience measurement scales ranked the CD-RISC among the top 3 for best psychometric properties (Windle, Bennett, & Noyes, 2011).

Life Orientation Test- Revised (LOT-R): The life orientation test was developed by Scheier and Carver in 1985, and revised in 1994. The LOT-R as it stands now is one of the most commonly used measure of optimism, both in medical and psychological research and this is the reason behind its use in this study (Schou-Bredal et al., 2017). The Lot-R is constituted of 10 items like "In uncertain times I usually expect the best", "I am always optimistic about my future". In accordance with Scheier and Carver's original theory (1985) the construct optimism-pessimism is unidimensional and bipolar. In other words an individual can either be optimistic or pessimistic but not both.. When it comes to the psychometric properties the LOT-R has an acceptable internal consistency with Cronbach alpha= 0.78. The LOT-R is fairly stable across time which indicates an acceptable test-retest reliability (ICC = 0.72) (Hirsch, Britton, & Conner, 2010).. It was found that the LOT-R distinguish well between people with different levels of optimism and adequately covered the spectrum of the trait. And it also appears to be gender and age invariant (Steca, Monzani, Greco, Chiesi, & Primi, 2015).

Rotter's Internal-External Locus of Control Scale: The Rotter's IE locus of control scale was developed by Julian Rotter in 1966. Rotter introduced the locus of control concept and he was largely influenced by the work of Albet Bendura on the social learning theory. According to Rotter people interpret events as either resulting from their own actions or being the result of some external factors. This belief regarding the locus of control in a certain situation will influence people's behaviours and reward expectancies. The scale that he

developed is a forced-choice paradigm where a person has to choose between a pair of items; one internally oriented and the other one externally oriented. For instance on the first item of the scale, the participant has to choose between option (**a**) "Children get into trouble because their parents punish them too much" and option (**b**) "The trouble with most children nowadays is that their parents are too easy with them". The Rotter's scale was designed to provide some predictability of a person's interpretation across all domains unlike other scales that were developed later all to investigate locus of control in specific domains (e.g. health, academics etc.). Rotter believed that the locus of control could vary based on the circumstances yet he also believed that people tend to have a certain pattern in the way they explain situations. They have a tendency to trend toward internality or externality as a personality trait. Tis scale was therefore designed to assess this more general across-tendency situations. Since its development this scale has been used extensively and validated in different situations (Lange & Tiggemann, 1981; Tong & Wang, 2006). The Rotter's IE consists of 29 forced-choice items including six fillers to make the purpose of the test more ambiguous. It still remains the most widely used measurement of locus of control. Higher scores are indicative of externality while lower scores are indicative of internality (Wang & Lv, 2017). Concerning the psychometric properties of the scale, it has demonstrated satisfactory alpha coefficients and test-retest reliability for a one month period in the original study. And recently a meta-analysis was conducted on 120 studies that had used the scale and it showed a good average reliability of 0.70 (H. Ng, L. Sorensen, & T. Eby, 2006). Rotter's also reported a correlation between this scale and other measures used to assess locus of control (e.g. Likert scale, questionnaires, interview assessments, etc.). The construct validity of the Rotter's IE comes from predicted differences in behaviour for individuals and Its discriminant validity is indicated by the low levels of relationships with variables such as

social desirability, need for approval, political liberalness, and adjustment (Tong & Wang, 2006).

Multi-dimensional Scale of Perceived Social Support (MSPSS): This scale is a brief self-report measure that assesses social support subjectively. In other words it measures a person's perception of the support that he/she gets from a significant other, family and friends (subscales of the MSPSS). It was first published in the Journal of Personality Assessment in 1988. It is composed of 12 items that are answered using a 7-point Likert-type scale ranging from very strongly disagree (1) to very strongly agree (7). The following are some items included in the MSPSS scale: "There is a special person who is around when I am in need", "I can count on my friends when things go wrong". Mean scores are calculated for each subscale as well as the whole scale. Higher scores indicate greater perceived social support. The scale has good internal reliability with Cronbach's alpha for the scale as a whole ranging from 0.84 to 0.92. For the Significant Other Subscale Coefficient alpha ranges from 0.83 to 0.98, for the Family Subscale it ranges from 0.81 to 0.90 and for the Friends Subscale form 0.90 to 0.94. The MSPSS is a psychometrically sound assessment tool across different subject groups (Zimet, Powell, Farley, Werkman, & Berkoff, 1990). This scale has originally been validated in Western countries yet later on it was also validated in non-western settings. The majority of the studies showed that MSPSS has good construct validity. The scores correlated with measures of anxiety and depression in the expected direction. They also showed that the scale has good internal consistency for the subscales and the whole scale. When factor analysis was used scores loaded onto the expected three factors (Canty-Mitchell & Zimet, 2000; Eker & Arkar, 1995; Nakigudde, Musisi, Ehnvall, Airaksinen, & Agren, 2009; R. C. Stewart, Umar, Tomenson, & Creed, 2014)

Procedure

The participants were approached in different contexts (e.g. social gatherings, university campuses, work companies, gyms…etc. and invited to participate in the study by the investigator. The sample was a convenient one and snowball sampling technique was used for purposes of practicality. Most of the people approached agreed to participate in the study though a few declined. The sample only included Lebanese above the age of 18, who were living in Lebanon at the time of the study and who could understand English. Each participant was briefed on the purpose of the study after which they chose either to participate or not. Those who gave their written consent, were then asked to fill a self-report demographics sheet that also included one question about religiosity, as well as four psychological tests; Connor Davidson resilience scale, Life orientation test- revised, Rotter's Internal-External Locus of control scale and the Multidimensional Scale of Perceived Social Support. The participants were able to fill out the questionnaire themselves, but few requested help in understanding some items of the scales

The efficacy of the questionnaire was tested through a pilot study that was performed included 35 participants. Based on the pilot study results all the scales and subscales used showed acceptable to very good internal consistency except for the Lot-R scale which showed a relatively low Cronbach alpha of 0.470. Consequently item number 3 was removed from the scale for the purpose of improving its internal consistency 0.567. The 35 questionnaires used for the pilot study were not used later on in the actual study. Following the pilot study, the data collection process began. 292 questionnaires were obtained to be used in the analysis. This process took around one month of work. Participants approached were from different Lebanese regions, different ages, and different educational backgrounds in order to be able to have a sample that is as representative as possible of the Lebanese population.

Data Analysis

After discarding 2 filled out questionnaires which seemed to be non-homogeneous, the papers were numbered from 1 to 292 and the data were analysed using SPSS version 20.

Ethical considerations

Before administering the study, the researcher applied for Institutional Review Board clearance from the Ethics Committee at Haigazian University and was granted approval to proceed. Moreover, prior to handing the questionnaire to the participants, the researcher explained to them the purpose of the study, orally as well as through an information letter attached to the questionnaire, the significance of their role in participating in it, and finally emphasized their rights and clarified all their concerns. After the researcher made sure that the participants were clear on all the necessary details of the study, she asked them to sign a consent form before filling out the questionnaires. The questionnaire was anonymous in order to ensure privacy and confidentiality.

Chapter 4

Results

The purpose of this study was to examine a set of independent variables, namely locus of control, optimism and social support in relation to a dependent variable which is psychological resilience among the Lebanese adult population. This study constituted an attempt to identify some predictors of psychological resilience in this sample of Lebanese adults. In this chapter, the reliabilities of the scales will be presented followed by the results of testing the proposed hypotheses using the SPSS version 20, for data analyses.

Reliability Testing

The reliability coefficients were calculated for each scale and subscale. For the Life Orientation Test-Revised LOT-R, the analysis yielded a Cronbach alpha of 0.567 after item number 3 (if something can go wrong for me, it will) was eliminated (see Table 2). However, in the literature, the LOT-R was found to have a better internal consistency with a Cronbach alpha of 0.78 (Marshall, Wortman, Kuslas, Hervig, & Vickers, 1992). Therefore, the Cronbach of the LOT-R of this study was taken into consideration while interpreting the data.

The Multidimensional Scale of Perceived Social Support MSPSS was found to have a good internal consistency with a reliability coefficient of 0.885 (see Table 2). This result is in line with findings from the literature where the Cronbach alpha was reported to be around 0.84. The reliability coefficients for the three subscales were; 0.906 for the significant other subscale, 0.854 for the family subscale, and 0.892 for the friends subscale (Zimet et al., 1990).

Rotter's scale of locus of control yielded a reliability coefficient equal to 0.651 (see Table 2). The result is close to what had been published in the literature where the reliability

coefficient of the Rotter's IE scale was reported to be 0.70 (T. Ng, K. Sorensen, & L. Eby, 2006).

And finally, the reliability coefficient of the Connor Davidson Resilience Scale was found to be 0.850. Findings from the literature had indicated a good internal consistency for this scale with a Cronbach alpha equal to 0.89 (K. M. Connor & J. R. Davidson, 2003).

Table 2

Previous and Current Cronbach's Alphas of the Various Scales and Subscales

Scale or Sub-Scale	Previous Cronbach's Alpha	Current Conbach's Alpha
LOT-R	0.780	0.567
MSPSS_Total	0.84	0.885
MSPSS_Family	0.81	0.854
MSPSS_Friends	0.90	0.892
MSPSS_Significant Other	0.83	0.906
ROTTER'S	0.700	0.651
CD-RISC	0.890	0.850

Hypotheses Testing

Hypothesis 1: The more internal the person's score is on the Locus of Control scale, the higher the score is on the resilience scale.

A Pearson correlation coefficient was calculated to examine the relationship between locus of control and psychological resilience. A negative correlation was found between the two variables ($r = -0.194$; $p=0.002$) since the scale is keyed toward the external locus of control pole. This finding suggested that the more the person tends toward the internal locus of control the more resilient the person is. Therefore, the predicted relationship is confirmed as seen in Table 3 below.

Table 3

Correlation Matrix Between the Various Independent Variables and the Dependent Variable: Locus of Control, Optimism, Social Support, Age & Resilience

		Age	LOT_R_ TOTAL	Significant _other_ subscale	Family_ Subscale	Friends_ Subscale	MSPSS_ TOTAL	LOCUS_ TOTAL	CD_ RISC_ TOTAL
Age	Pearson Correlation	1	0.076	.156**	0.092	-.116*	0.048	-0.12	.188**
	Sig. (2-tailed)		0.195	0.008	0.119	0.049	0.421	0.056	0.002
	N	291	289	291	287	288	284	255	273
LOT_R_ TOTAL	Pearson Correlation		1	0.106	.219**	.218**	.233**	-.216**	.319**
	Sig. (2-tailed)			0.072	0	0	0	0.001	0
	N		290	290	286	287	283	255	273
Significant _other_ subscale	Pearson Correlation			1	.491**	.370**	.803**	-0.034	.276**
	Sig. (2-tailed)				0	0	0	0.587	0
	N			292	288	289	285	256	274
Family_ Subscale	Pearson Correlation				1	.308**	.768**	-0.071	.271**
	Sig. (2-tailed)					0	0	0.258	0
	N				288	285	285	252	272
Friends_ Subscale	Pearson Correlation					1	.735**	-0.064	.148*
	Sig. (2-tailed)						0	0.308	0.015
	N					289	285	253	271
MSPSS_ TOTAL	Pearson Correlation						1	-0.064	.298**
	Sig. (2-tailed)							0.313	0
	N						285	249	269
LOCUS_ TOTAL	Pearson Correlation							1	-.194**
	Sig. (2-tailed)								0.002
	N							256	242
CD_RISC _TOTAL	Pearson Correlation								1
	Sig. (2-tailed)								
	N								274

*. Correlation is significant at the 0.05 level (2-tailed).

**.Correlation is significant at the 0.01 level (2-tailed)

Hypothesis 2: There is a positive correlation between optimism and resilience.

A Pearson correlation was computed to test for the relationship between optimism and resilience. Results showed a strong positive correlation between the two variables (r =0.319; p= 0.000). This shows that the second hypothesis is confirmed as seen in Table 3.

Hypothesis 3: There is a positive correlation between social support and resilience.

A Pearson correlation was computed to check the relationship between social support and resilience. The results indicated a positive correlation between the two variables with an (r =0.298; p=0.000) and therefore the hypothesis was confirmed (Table 3). Moreover, Table 3 shows the correlation between each of the three subscales of MSPSS with the total score of resilience. The results indicated as would be expected a positive correlation between the total score of resilience with the friends subscale (r = 0.148; p = 0.015). the family subscale (r = 0.271; p = 0.000). and the significant other subscale (r = 0.276; p = 0.000).

Hypothesis 4: There is a positive correlation between age and resilience.

A Pearson correlation was computed to check the relationship between age and resilience. Results showed a positive correlation between the two variables (r = 0.188; p=0.002). Therefore, the hypothesis is confirmed as seen in table 3 above.

Hypothesis 5: Locus of control, optimism and social support are significant predictors of resilience.

In order to test this hypothesis a multivariate regression analysis was conducted in which resilience was regressed on locus on control, optimism and social support while controlling for other variables as shown in table 4 below.

Table 4

Regression Coefficients of Psychological Resilience as the Dependent Variable

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	65.002	15.597		4.168	0.000
LOT_R_TOTAL	0.822	0.253	**0.217**	3.249	**0.001**
Significiant_Other_Subscale	2.005	0.738	**0.194**	2.717	**0.007**
Family_Subscale	0.956	0.723	0.093	1.323	0.188
Friends_Subscale	0.727	0.672	0.079	1.081	0.281
LOCUS_TOTAL	-0.343	0.214	-0.101	-1.604	0.110
Age	0.144	0.101	0.140	1.426	0.156
Gender	-2.359	1.632	-0.093	-1.446	0.150
Student	-1.304	2.276	-0.051	-0.573	0.567
Work (worker=1, not worker=2)	-5.020	1.989	**-0.181**	-2.524	**0.012**
Marital_Status	-1.787	2.292	-0.070	-0.780	0.437
Religiosity	0.586	0.337	0.110	1.737	0.084
Technical Degree	-0.114	4.202	-0.002	-0.027	0.978
BA (BA=1, NO BA=2)	-5.054	2.274	**-0.165**	-2.222	**0.027**
MA or MBA	3.254	1.964	0.121	1.657	0.099
PhD	-7.102	4.046	-0.118	-1.755	0.081

Model Summary of the Regression Analysis of Psychological Resilience as the Dependent Variable

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.566 [a]	0.321	0.267	10.52185

Looking at the regression table one concludes that both optimism and having the social support of a significant other constitute predictors of resilience. According to the B values, an increase of one unit in optimism leads to a 0.822 unit increase in resilience. Similarly, an increase of one unit in the significant other subscale leads to a 2.005 increase in resilience. Table 4 also shows that being a worker and having a BA significantly contribute to resilience. Looking at the Beta values, one concludes that optimism constitutes the greatest predictor of resilience among all other variables included in this study. The values of significance in the table indicate that the family subscale, friends subscale and the locus of control were not found to be significant predictors of resilience. Although age has been found to be positively correlated with resilience (hypothesis 4) however the regression analysis indicates that it does constitute a significant predictor of resilience nor do gender, marital status or being a student. Yet religiosity can be considered predictive of resilience at the 0.084 level which is very close to 0.05. Concerning the education section, in addition to BA being a significant predictor of resilience, having a PhD was also found to be significant at the 0.081 level. However, one must be cautious while interpreting this finding since participants with a PhD constituted only 13 out of 292 participants. And finally, not having an MA or MBA is close to significance with p= 0.099. The items chosen in the regression analysis contribute by 26.7 % of the variance in adults' psychological resilience. So hypothesis 5 is partially confirmed.

Additional Findings

Some significant additional findings were calculated and reported here in order to be studied more accurately in future studies (Table5).

An independent t-test was conducted to examine the mean difference in resilience between males and females, married and single, students and non-students and finally workers and non-workers. The results showed a significant difference between males and females when it comes to resilience were males attained higher levels of resilience (M= 73.29; SD= 12.91) than the females (M= 70.02; SD= 12.54). The results also indicated that non-students scored higher on resilience (M=72.58; DS=12.34) than students (M=67.79; SD= 13.06). Finally, the results of the t-test showed that workers are more resilient (M=73.26; 11.55) than non-workers (M=64.62; SD= 13.99).

Table 5

Independent Sample t-Test Comparing the Difference in Resilience as a Function of: Gender, Marital Status, Student & Work

		t-test for Equality of Means						
		T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Gender	Equal variances assumed	2.019	271	**0.044**	3.2593	1.61414	0.08145	6.43715
Marital Status	Equal variances assumed	-1.641	262	0.102	-2.67458	1.62936	-5.88287	0.53372
Student	Equal variances assumed	-2.904	272	**0.004**	-4.78133	1.64636	-8.02256	-1.54010
Work	Equal variances assumed	5.065	272	**0.000**	8.63963	1.70574	5.28151	11.99776

Chapter 5

Discussion

The purpose of this chapter was to study the impact of age, locus of control, optimism and social support on psychological resilience among Lebanese adults living in Lebanon. In this chapter, we discuss the results presented in Chapter 4 and how they connect to previous studies.

The first hypothesis of this study stated that the lower the person scores on the Locus of Control scale, meaning the more internal he or she is, the higher his/her score would be on the resilience scale. This hypothesis was confirmed and it is in line with previous research. For instance, Joop and Rott (2006) conducted a study were they explored psychological resilience in old age. The results indicated that high levels of happiness, one of the many aspects of resilience, found in centenarians were due to the perception of internal control which activates cognitive strategies that are useful in challenging situations, such as, intervening in a balanced appraisal of problems. Another study showed that the core component of coping by resilient youth was their belief of being in control of their fate; the resilient ones were significantly more likely than the none resilient to have an inner locus of control (Werner & Smith, 2001). In the Lebanese adult population, according to this study, having an internal locus of control was found to be correlated with resilience. In a developing country like Lebanon, citizens have to rely on themselves to get their work done or to achieve whatever they need to achieve as it is becoming more and more difficult to depend on a socio-political system that has proven incompetent to secure their basic needs. That said, it is important to note here that, similar to what was stated by Joop and Rott (2006), the perception of an internal locus of triggers cognitive strategies that are useful in difficult situations; hence it becomes understandable to see why those adults who are faced on a daily

basis with challenging situations do better in their life and show more resilience when their locus of control is more internal.

The second hypothesis stated that there would be a positive correlation between optimism and resilience. The results of our study confirmed this hypothesis which is in line with previous research. Early studies on resilience identified optimism as a main factor among the intrapersonal factors that helped individuals overcome adversities (Tusaie, 2001). For instance, according to Murphy (1987) resilient children are characterized with an optimistic bias. Also Taylor (1989) found that individuals who have positive illusions are able to remain hopeful in the face of adversity which enables them to overcome it more easily than others. More recent studies have also argued that optimism is a personal trait of people considered resilient (K. Connor & J. Davidson, 2003; Waugh, Frederickson, & Taylor, 2008). Moreover, other researchers found an association between optimism and resilience especially among students (Carver & Connor-Smith, 2010; Dawson & Pooley, 2013). We can then conclude that when it comes to the strong relationship between optimism and resilience, the Lebanese adult population is not different than all those samples on whom previous research was conducted. The result of our study of this specific population showed how strong of a weapon optimism can be in the face of daily struggles and the usual challenges of life in a developing country like Lebanon.

The third hypothesis stated that there would be a positive correlation between social support and resilience. This hypothesis was also confirmed and is in line with previous research. In recent studies, resilience was found to be related to social support among students specifically the support systems of their friends, family, relatives and special people in their lives (Dawson & Pooley, 2013; Weidong et al., 2012). Moreover, according to Wilks and Spivey (2010) social support systems have a significant impact on resilience. Hsieh, Chang, and Wang (2017) found that both family support and peer support were positively

associated with resilience scores in resilience among abused nurses at emergency rooms and psychiatric wards in Taiwan. Previous research on resilience in military samples also found that social support is associated with increased resilience and lower risk of PTSD (Bonanno, Galea, Bucciarelli, & Vlahov, 2007; Oliver, Harman, Hoover, Hayes, & Pandhi, 1999). It was concluded that protective factors that help individuals (mainly children) buffer the negative effects of hardships were social support, mainly the presence of at least one significant adult who cared for and accepted them (S. Luthar, 1991). Moreover, previous research concluded that resilient individuals tend to be skilled at constructing social networks and seeking out social support in time of need (Sharkansky et al., 2000), which is the case of the Lebanese people. In fact, one of the characteristics of our Lebanese society is that it is a social one where individuals give a lot of importance to social interactions and hence they invest time, money and effort in these interactions (Antonucci, Ajrouch, & Abdulrahim, 2015). The family, friends and neighbours play an important role in the individual's life. Lebanese celebrate in groups and they grieve in groups. Thus, relating to our study, we can conclude that having a strong social support constitutes a part of the Lebanese community's resilience and the individual's resilience. Based on Sumer et al. (2005), Benight and Harper (2002), Southwick, Vythilingam, and Charney (2005) social support bolsters feelings of self-efficacy and personal control. This may foster the development of effective coping strategies and an increased ability to reappraise stressful situations. Social support also promotes meaning-making in the face of difficult experiences (Cole et al., 2006). Additionally, it reduces involvement in high risk behaviours (Muris, Schmidt, Lambrichs, & Meesters, 2001) and reduces loneliness (Bisschop, Kriegsman, Beekman, & Deeg, 2004).

The fourth hypothesis stated that there would be a positive correlation between age and resilience. This hypothesis was also confirmed by the results of our study. Not many empirical studies have focused on the variation of psychological resilience as a function of

age. However, those that exist have found that age and resilience are positively correlated. For instance Kimhi, Goroshit, and Eshel (2013) stated that a higher level of community resilience was found among older individuals who had been exposed to security threats as compared with younger participants. Lahad and Fanaras (2012) presented a paper to the European parliament concerning the economic crisis that hit Greece in which they reported that Greek individuals aged 55 years and above felt that they were doing much better than in the past. Whereas the younger ones felt worse; unable to cope with the crisis. The authors explained this phenomena by the fact that the older generations have already went through so many crises in the contemporary history of Greece that the recent one is not so alarming to them. Moreover, according to Charles (2010) older adults develop strategies that moderate negative emotions more efficiently than younger adults. Despite the fact that the elderly are considered by some as a vulnerable population or one with a special needs (Pekovic, Seff, & Rothman, 2007) others strongly argue that this description applies to only a certain proportion of the older adult population. Some features of old age actually constitute an asset and a resource. For example, in his book "the six ages of man" Rabinovici (1985) argues that what defines old age is not chronology. It is rather the accumulation of different components, most importantly including the internal perception of the individual. In Lebanon the older adult population is one that has suffered many wars starting 1975. Many of those adults have participated in these wars which exposed them to different kinds of adversities. It is then normal that a number of them grew to develop different kinds of psychological disorders. However it seems that those who did not face this fate have actually developed to become more resilient. It seems that the famous proverb "what doesn't kill you makes you stronger" applies to the non-clinical sample of our study.

The fifth and final hypothesis stated that locus of control, optimism and social support would be significant predictors of resilience. This hypothesis combined the three variables

together which few studies in the literature have done. The results indicated that both optimism and the significant other subscale of the social support scale were significant predictors of resilience. That said, however, optimism was the strongest predictor of resilience. Segovia et al., (2012) discussed optimism as a protective factor for confronting trauma and among six variables that were studied optimism was the strongest variable predicting resilience. The results of their study indicated that what explained how an individual fared after exposure to a trauma is not merely the type of trauma but mainly the type of person who experienced the trauma. In this case the more optimistic a person is the more likely he/she is to recover even from the most horrific of circumstances. In another study, Jimenez et al., (2012) were able to identify certain resources that decreased the effects of stress on life satisfaction. Optimism and social support were among the variables identified as predictors of life satisfaction. Greve and Staudinger (2006) wrote that these resources form a sort of armor that protects people and enables them to adapt in the face of ongoing significant life stressors as well as traumas or adversities. The findings of our study fit this line of logic by showing how certain psychological factors, optimism and social support) actually determine the way a Lebanese adult person will deal with stress and adversity.

In conclusion, this study shed the light on some important predictors of resilience in an adult non-clinical sample that consists of Lebanese individuals. It has become clearer that resilience does not solely develop as a reaction to extreme traumas or adversities. For instance our sample consisted of mainstream individuals that face everyday hustles and stressors of the Lebanese society. And the results proved that those individuals were able to develop a resilient response provided that the right resources exist. Going back to the literature, different factors played a role in boosting the psychological resilience of people. However in this study we only focused on three of them. And it turned out that the strongest predictor of resilience in the Lebanese population was optimism followed by social support

from a significant other. Additionally it was found that the older Lebanese adults were capable of more resilience than the younger Lebanese adults.

Additional Findings

The additional results, which were not hypothesized upon, showed that being a worker and having a BA were both significant predictors of resilience. In the literature having a meaningful work was found to be highly relevant for resilience of employees (Kim, Kim, Newman, Ferris, & Perrewé, 2018) The North West Mental Well-being survey- Employment and resilience was conducted in 2009 in response to an increasing need to understand the positive mental wellbeing of people in the region. The survey included questions covering a range of indicators, including the seven-item Warwick and Edinburgh Mental Wellbeing Scale (WEMWBS) and questions relating to factors which may influence mental well-being. The survey found that adults with higher mental wellbeing levels were significantly more likely to be in full-time or part-time work than those with lower levels of mental wellbeing. Being out of work can be detrimental to both physical and mental health while being in work can have many positive impacts on wellbeing (Carlin, Chmabers, Knuckey, Prekins, & Bellis, 2009).

Concerning the education part, in November, 2017 a study was published titled "Assessing the contribution of higher education to graduates' wellbeing in the UK". It found that graduates (Graduates in the sample have a wide range of higher education qualifications, from Level 4 qualifications such as Higher National Certificates to doctoral degrees) are, on average, happier over their lifetime than non-graduates and they reported a better sense of well-being. The analysis also showed that graduates' were more resilient in the face of difficult and very stressful circumstances such as divorce, unemployment and ill-health than non-graduates. Across three measures of wellbeing – life satisfaction, happiness and

worthwhileness – graduates report greater wellbeing even when confronting challenging life events. However, other recent studies are talking about a considerable prevalence of mental health problems in the graduate population. In fact, according to Evans, Bira, Gastelum, Weiss, and Vanderford (2018)graduates students are more than six times as likely to experience depression and anxiety as compared to the general population. This contradiction opens the door for future studies to focus more on the contribution of education to resilience.

When it comes to the relationship between religiosity and resilience Brewer-Smyth K. and G. (2014) found that spirituality and religion can promote stress resilience in survivors of childhood trauma. While religion can sometimes be related to guilt it can also be a powerful source of hope thus boosting a person's resiliency levels. Although in this study we did not differentiate between different aspects of religiosity (intrinsic and extrinsic), however our findings can be built on for future research considering the importance of religion to the individual in the Arab world in general and in Lebanon in particular.

The results of our study also showed that males attained higher levels of resilience. In the literature there is lack of studies addressing resilience in relation to gender and there are contradictory findings. For instance, Sabouripour and Roslan (2015) found no difference in the resilience level across gender among international students. Johnson (2011) obtained similar results on the relationship between gender and resilience among college students. The same applies to the study of Splan, Brooks, Porr, and Broyles (2011) which indicated that gender differences are not significant on the levels of resilience. However, those results are contrary to a few studies by Weidong et al. (2012) and Bonanno et al. (2007) who found that women were less than half as likely to be resilient as men. Although both studies did not offer insights into the reason why female gender was associated with a reduced likelihood of resilience they suggest the possibility of different factors interacting with gender in predicting resilienceIt is then possible that different results are obtained in different circumstances and

more studies are needed in this field to have clarifications. It could be that some environmental factors (including age, marital status, financial status, etc.) have an effect on the relation between resilience and gender. These factors could be considered in further research.

The t-test results of this study indicated that non-students scored higher on resilience than students. According to the literature it appears that students have a worse mental well-being during the period of their studies than non-students. Students report greater anxiety and less happiness than young people outside the higher education system (Neves & Hillman, 2017). It has been found that 8 in 10 students have experienced stress or anxiety while at university. These findings are not surprising considering that starting university can be a challenging time for students. Many students leave home, and start to live independently for the first time. For many the transition might not be easy leading to stress and anxiety. For those without effective coping tools, basic day-to-day challenges such as learning to cook healthy meals or managing deadlines can become triggers to some mental health problems.

Clinical Implications

The results of this study guided us toward having a holistic view of the concept of resilience, and not just focus on resilience in relation to extreme traumatic events. Even dealing with life's daily hustles requires some level of resilience. It has been shown so far that both bouncing back after a trauma or overcoming daily challenges are not specifically related to the type of trauma or challenge or even to their severity. It is rather about the person experiencing those hardships; it has to do with certain characteristics that differentiate between resilient and vulnerable individuals. In our study, we focused on locus of control, optimism and social support. Therefore, in order to increase the person's resiliency levels clinicians need to focus on strengthening those three characteristics. In order to boost

resilience clinicians need to focus on developing its predictors. According to P. Seligman (2002) optimism is driven by patterns of thoughts and thus it can be learned. Using cognitive behavioural techniques the clinician can help clients reshape their ways of interpreting events. To go from a pessimist to an optimist, it entails changing the ways of thinking that involve a variety of domains; personalization, permanence and pervasiveness. In the 1990's Seligman's research on learned helplessness found that a person can be conditioned to become passive and stop trying to solve the problem when their actions were not linked to rewards. Then Seligman showed that optimism can be learned through experience of mastery. It is strengthened every time an individual comes to believe that his/her efforts can yield success. Seligman believed that learned optimism can help us maintain better health and achieve more.

Moreover, clinicians can also help their clients establish more effective social support systems. For instance, Scott (2018), focused on how to create good social support in one's life where she described key skills that can help one to build relationships with people that are truly supportive. One main step was meeting new people by getting involved in a hobby, joining a gym, volunteering, getting a pet…etc. Another important skill was time management because good relationships need to be nurtured. So one needs to manage their time in a way that they can be present for other people. Being a good listener is also crucial in social interactions where giving is as important as receiving supportive listening. Scott also focused on assertiveness as a skill that strengthens relationships, makes them more mutually supportive and opening the lines of communication. However, not everyone is an appropriate match. One needs to be able to put an end to a relationship if he/she feels that the other person makes them feel bad about themselves or just doesn't share their interest or values. Cultivating a circle of truly supportive friendships needs time and effort, yet it can make a considerable difference in the way one handles the stress of life (Scott, 2018a).

When it comes to the locus of control McKay and McKay (2010, wrote that while upbringing shapes the locus of control of a person, it is always possible to change and become more internal than external. A resilient person understands that the only thing onecan control is one's self. Circumstances don't dictate a person's life. It is that person who dictates his/her own life. So the main key to taking control over your life is strengthening your problem-solving abilities (McKay & McKay, 2010), which are skills that clinicians can help their clients with. By being aware that you have a choice, by reviewing your options when you feel trapped in a situation, by brainstorming, asking for ideas and choosing what's best for you, you can develop a stronger internal locus of control (Scott, 2018b).

Future Research Recommendations

First we recommend the translation of the scales used in this study to the Arabic language so that in future research a wider portion of the Lebanese or any other Arab community can be accessed.

Due to the lack of studies addressing the concept of resilience in non-clinical populations it would be interesting to have more studies going in that direction especially that in the modern world the levels of stress that individuals are undergoing on a daily basis is becoming pathological. This can be noticed by the increasing amount of medical disorders that are being linked to stress.

Further studies can be done that address other factors that could be possible predictors of resilience. In this study we only focused on three. However, there are certainly other factors that contribute to the development and maintenance of psychological resilience (e.g. religiosity, self-esteem, coping strategies…etc.). It would also be important to address the interactions of different variables together and their impact on resilience. For instance Lachman, Neupert, and Agrigoroaei (2011) had suggested that perceived control can vary

over the lifespan where older people may experience a reduction of control in comparison to younger adults. So a possible research area in this context would the interaction between locus of control, age and resilience knowing that previous research has concluded that age and resilience correlate positively.

Limitations of the Study

One limitation to be mentioned relates to the moderately low reliability of the life orientation test that was used in this study to measure optimism. Second, it should be noted that this study was limited to the Lebanese adults who could read and understand the English language which makes it imprudent to generalize the results to the whole community.

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Appendix A

Information Letter and Participant Consent Form

Participant information letter

Dear Ms./Mr.

I am Rita Maydaa, a student at Haigazian University from the Department of Social and Behavioral Sciences. I am currently carrying out a research study titled: Locus of Control, Optimism and Social Support as Predictors of Resilience in an Adult Lebanese Sample, advised by Dr. Hanine Hout.

You are being asked to take part in this study since you are a Lebanese adult living in Lebanon and you might be facing different kinds of challenges and difficulties on a daily basis. Therefore, your contribution would be beneficial for the results of this study, and eventually for all adults around the world more specifically the Lebanese adults.

Kindly read the below information to decide whether you would like to participate in this research study.

Purpose of the Research Project:

This research study aims at investigating the psychological and social factors enhance psychological resilience of adults. This study will contribute towards the partial fulfillment of my academic study requirements at Haigazian University.

What will I be asked to do?

- If you choose to participate in this research study, you will be asked to fill in a demographic form and complete four questionnaires. Your participation will extend for approximately 20 minutes.
  Participation in this project is voluntary. You are free to withdraw anytime without having to give any reason for your withdrawal.

What are my rights?

- Participation in this study is completely voluntary, anonymous and confidential. Your name or any other identifying information will not be asked.
- Data you provide along with data from all participants in the present research will be stored in Haigazian university. The data will then be analysed. Only the principle investigators of this study will have access to the compiled data which will be stored

for a period of 10 years post data. During this time, you have the right to inspect the data.

- You have the right to withdraw your consent or discontinue participation at any time for any reason. Your decision to refuse participation or withdraw will not involve any penalty or loss of benefits to which you are entitled. Discontinuing participation in no way affects your relationship with Haigazian University.
- This research study has been reviewed and has received clearance from the Haigazian University ethics committee. If you have any further concerns about your rights as a research participant, please, do not hesitate to contact:

  Dr. Hanine Hout:
  HANINE.HOUT@haigazian.edu.lb
  01349230 Ext.206

What are the risks and benefits of participation?

- Participation in this study does not involve any physical risk or emotional risk to you beyond the risks of daily life.
- You will receive no direct benefits from participating in this research; however, your participation does help researchers better understand the factors that help adults in general and Lebanese adults in particular develop and maintain psychological resilience.

Contact information

If you have any questions or concerns about the research you may contact:

Rita Maydaa

Ritamaydaa@hotmail.com

03958714

Advisor:

Dr. Hanine Hout

HANINE.HOUT@haigazian.edu.lb

01349230 Ext.206

Participant consent form

Locus of Control, Optimism and Social Support as Predictors of Resilience in an Adult Lebanese Sample

Please read the following statements and place a check mark in the boxes adjacent to them.

- ☐ I agree to participate in this research project conducted for purposes of study. My decision is voluntary and does not involve payment of any kind.
- ☐ I know that I can choose to withdraw from participation any time without any penalties or consequences whatsoever. I also hold the right to decline to respond to any question(s) that I may feel uncomfortable with.
- ☐ My participation involves answering a questionnaire and taking a test for approximately 20 minutes.
- ☐ I have been assured that the researcher will maintain my identity confidential.
- ☐ I have been assured that the information from this survey will be used for the purpose of academic study only and educational use.
- ☐ I have received the assurance that this research study has been duly reviewed and approved by the Haigazian University ethics committee.
- ☐ I agree that the data gathered be kept in a secure location under the care of the study investigators for a period of 10 years.
- ☐ I have been assured that I can access my data (if identified) at any time.
- ☐ I have read, listened and fully understood the explanation given to me. All my questions have been satisfactorily answered.
- ☐ I, therefore, choose to voluntarily participate in this research study.
- ☐ I have received a copy of this consent form co-signed by the researcher.

Participant consent	Investigator
Date: _____	Date: _____
Name: _____	Name: _____
Signature: _____	Signature: _____

Appendix B

Demographics questionnaire

Age: ____

Gender: ☐ Male ☐ Female

Education: ☐ High school degree ☐ Technical degree ☐ BA ☐ MA / MBA
☐ PhD ☐ Other, specify:

Are you currently a student? ☐ Yes ☐ No

If yes, what is your major: _____

Work: ☐ Yes ☐ No If yes, specify: _____

Marital status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed
☐ Other, specify: _____

On a scale of 0 -10, I rate the importance of my personal religious beliefs as: _____

(0 = Not at all, 10 = very high)

Appendix C

The Connor-Davidson Resilience Scale

For each item, please mark an 'X' in the box below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

	Not true at all (0)	Rarely true (1)	Sometimes true (Fortmann et al.)	Often True (3)	True nearly all the Time (4)
1. I am able to adapt when changes occur					
2. I have at least one close and secure relationship that helps me when I am stressed					
3. When there are no clear solutions to my problems, sometimes fate or God can help					
4. I can deal with whatever comes my way					
5. Past successes give me confidence in dealing with new challenges and difficulties					
6. I try to see the humorous side of things when I am faced with problems					
7. Having to cope with stress can make me stronger					
8. I tend to bounce back after illness, injury or other hardship					
9. Good or bad, I believe that most things happen for a reason					
10. I give my best effort no matter what the outcome may be					

11. I believe I can achieve my goals, even if there are obstacles					
12. Even when things look hopeless I don't give up					
13. During times of stress/crisis, I know where to turn for help					
14. Under pressure, I stay focused and think clearly					
15. I prefer to take the lead in solving problems rather than letting others make all the decisions					
16. I am not easily discouraged by failure					
17. I think of myself as a strong person when dealing with life's challenges and difficulties					
18. I can make unpopular or difficult decisions that affect other people if it is necessary					
19. I am able to handle unpleasant or painful feelings like sadness fear, and anger					
20. In dealing with life's problems, sometimes you have to act on a hunch without knowing why					
21. I have a strong sense of purpose in life					
22. I feel in control of my life					
23. I like challenges					
24. I work to attain my goals no matter what roadblocks I encounter along the way					
25. I take pride in my achievements					

Appendix D

The Rotter's IE Scale

For each question select the statement that you agree with the most (either a or b):

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.
   b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality
   b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b. Many times exam questions tend to be so unrelated to course work that studying in really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
    b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
b. It is not always wise to plan too far ahead because many things turn out to- be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.
b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
b. Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
b. By taking an active part in political and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
b. There really is no such thing as "luck."

19. a. One should always be willing to admit mistakes.
b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
b. There is a direct connection between how hard 1 study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.

b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.
b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.
b. In the long run the people are responsible for bad government on a national as well as on a local level.

Appendix E

The Life Orientation Test- Revised

Please answer the following questions about yourself by indicating the extent of your agreement using the following scale:

0 = strongly disagree 1 = disagree 2 = neutral 3 = agree 4 = strongly agree

_____ 1. In uncertain times, I usually expect the best.

_____ 2. It's easy for me to relax.

_____ 4. I'm always optimistic about my future.

_____ 5. I enjoy my friends a lot.

_____ 6. It's important for me to keep busy.

_____ 7. I hardly ever expect things to go my way.

_____ 8. I don't get upset too easily.

_____ 9. I rarely count on good things happening to me.

_____ 10. Overall, I expect more good things to happen to me than bad.

Appendix F

The Multidimentional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

1 = very strongly disagree
2 = strongly disagree
3 = mildly disagree
4 = neutral
5 = mildly agree
6 = strongly agree
7 = very strongly agree

1. There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2. There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
3. My family really tries to help me.	1	2	3	4	5	6	7
4. I get the emotional help and support I need from my family.	1	2	3	4	5	6	7
5. I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6. My friends really try to help me.	1	2	3	4	5	6	7
7. I can count on my friends when things go wrong	1	2	3	4	5	6	7
8. I can talk about my problems with my family.	1	2	3	4	5	6	7
9. I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
10. There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11. My family is willing to help me make decisions.	1	2	3	4	5	6	7
12. I can talk about my problems with my friends.	1	2	3	4	5	6	7