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Urbanization and Urbanicity Association with Mental Health and Psychological Well-being. A Case Study in Lebanon

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Dedication

I would like to dedicate this work to my parents who have supported me in all my decisions and stood by me in my bad times. My father whose sacrificial care enabled me to get to where I am now and my mother love who pushed me forward whenever I felt like quitting. And also to my sister and brother who have supported me and gave me encouragement through the entire journey.

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Your help has been the light at the end of my tunnel.

ABSTRACT

In times of rapid urbanization, the mental health and the psychological wellbeing of the citizens are recognized as a challenge. Much research has been conducted on the mental health and psychological well-being of the people, but none about the Lebanese population. To get an insight about the urbanization (urban growth, moving to cities) and urbanicity (different settlement sizes) association with mental health and psychological well-being of the Lebanese people, a questionnaire to 515 Lebanese citizens was conducted. The study showed large city dwellers being more nervous, less excited, but more hopeful about the future, less worried and with less suicidal thoughts than small cities and rural dwellers; while rural dwellers are, in average, more sad, depressed and lonely than those in large and small cities, however ,urban dwellers being "always/most of the time" sad or depressed are in percentage higher than rural dwellers. Males move from small city or rural area to large city more than females and people with a master's degree are the most ones who move from small city or rural area to large city.

Keywords: urbanization, urbanicity, Lebanese citizens, large city, rural area, small city.

Contents

Chapter 1 Introduction

The United Nations defined urbanization as the movement of people from rural to urban areas with population growth equating to urban migration. It occurs naturally from corporate efforts and individuals to reduce expense and time in transportation while improving opportunities for housing, education, jobs, and transportation. It is measured by the proportion of change in a city's population from year to year (United Nations, 2010). Definitions of urban area differ between nations. United States define "urbanized areas" based on population size and density, while European countries define it on the basis of urban type land use. In less developed countries, many requirements are used such as: most of the population, typically 75%, should not be engaged in agriculture and fishing, in addition to density requirement and land use (United Nations, 2010).

1.1 Background

Savrun defined urbanization as the increase in the number of cities and urban population. It is not only a demographic movement since it is related to social, economic, and psychological changes. Thus, urbanization is the process that leads to the growth of cities due to economic development and industrialization, which leads to urban specific changes in human behaviors, labor division, and specialization (Savrun & Balcioglu, 2000). In a moving population, the process of obtaining urban characteristics and isolation from rural life in terms of social and economic aspects starts with urbanization (Savrun & Balcioglu, 2000).

The world went through a period of remarkable and quick urbanization over the past six decades and humanity is facing a health-relevant change because of it. Currently, more than 50% of the global population is living in cities, and this rate will increase to approximately 70% with more than 50% of the urban population living in cities of over 500,000 citizens in 2050 (Savas & Mehmet, 2016).

In developed countries, urbanization is an old and continuous process that is formed in parallel with infrastructure services, technological reforms, and industrialization. In underdeveloped and developing countries, this process is more recent and has been practiced rapidly in a short period of time (Turan & Besirli, 2008). Developing countries are facing a rapid increase in population and rapid urbanization in the last 30-35 years (Turan & Besirli, 2008).

More and more people are exposed to risk factors in cities such as unplanned urbanization, traffic noise, pollution, increase in crime rates, environmental degradation, increase in the number of people living in substandard conditions, and unequal opportunities. This situation leads to negative impacts on economic, psychological, and social characteristics of people and groups living in cities (Turan & Besirli, 2008).

In contrast, cities provide better personal development, participation, education, wealth, health care and social stimulation. City residents live in a setting where medical care is usually better, and the distance to the nearest pharmacy or hospital is shorter facilitating access to adequate care compared with rural areas (Gruebner et al, 2017).

Urban and rural life has been a primary focus of research and debate in the social sciences for years. The debate has centered around the question of whether living in an urban area has a

negative, positive, or no effect on people's mental and psychological health (Adams 1992). Urban sociology has suggested that ecological factors such as heterogeneity, high population mobility, and density result in a society of people who suffer from social isolation and disorganization and psychological problems (Adams, 1992).

Social, political, and economic factors are key variables of the relationship between mental health and urbanization process. Some people seem to prefer living in a small countryside, while working in cities to reduce the negative impacts of rapid urbanization (Ludermir & Harpham, 1998).

Urbanization involves social residue and social drift concepts that might explain the occurrence of urban mental disorder. Social drift is the tendency of certain people to migrate to certain areas, while social residue expresses residual groups remaining at certain regions after migration of the people. The forces that make people leave their original areas and move to cities are defined as push and pull effects. The impacts of these concepts depend on pushing, which is a result of poverty in rural areas or pulling because of better job opportunities in urban areas. Reasons for push to cities are separated into two factors: the stagnation and change factors (Reichenheim, 1988). An example of change factor that make people move to the city is the technical unemployment, while the reduction in useful land areas due to rapid population is an example of the stagnation factor. In addition, the reasons that pull people from rural areas to urban areas are higher life standards (Tayfun & Asli, 2008).

The factors that push people from rural areas to cities do not depend on the individual's own preference. Instead, they affect and threaten the individual mental health more negatively when

compared to pull factors. Thus, the impacts of such urbanization are often dangerous to the mental health (Tayfun & Asli, 2008).

In Lebanon, it is estimated that 64% of the population live in large agglomerations mostly in Beirut and its surrounding suburbs along with Zahle, Tyr, Saida, and Tripoli. The increase in population size in the last 30 years took place mostly in urban areas, where urban population augmented from 2052000 in 1980 to 3712000 in 2010. In contrast, the rural population decreased from 733000 in 1980 to 543000 in 2010 (UN HABITAT, 2010).

Many rural areas suffer some material disadvantages such as fewer occupational opportunities, lower income, and limited access to health, transport services and education (Gilbert et al., 2016). In contrast, rural residents enjoy the supportive communities and social environments and as well as the environmental externalities such as green spaces, more security, and lower rates of pollution and environmental hazards (Gilbert et al, 2016). Residents in urban areas enjoy better access to employment and health care system but suffer from overcrowding and increase in population. They also experience a below standard way of life, crime, pollution, conflict, isolation, child employment, disintegration of families, uncertainty of future, and anxiety. Thus, all these factors might affect their mental health and psychological well-being (Gilbert et al, 2016).

This thesis aims at contributing to the empirical literature on the mental health and psychological well-being by examining their differences in rural and urban determinants in the case of Lebanon.

1.2 Problem Statement

The United Nations Human Settlements Program (UNHABITAT) projected Lebanon's urban population as a share of its total population at 88,6% in 2020 (Srivastava, 2009). Unfortunately, this urbanization is unplanned and chaotic. Urbanization influences the percentage of increased stressors such as polluted and overcrowded environment, high levels of violence and decreases the level of social support and is related to mental disorders (Savas & Mehmet, 2016).

The reason is that people moving to urban areas needs more facilities to be made available and an increase in infrastructure facilities. Living in cities has many advantages over living in small villages such as better access to jobs, services, and education but it is related to a higher mental disorders rate (D'Acci, 2020).

In addition, higher pollution rates (water and air), noise pollution (traffic), specific urban designs (huge buildings that are considered as oppressive) and more physical threats (violence and accidents) are also influential reasons at the basis of higher mental disorders in bigger urban settlements. All these influential reasons will be discussed in the literature review.

1.3 Definitions

According to the World Health Organization, mental health refers to our emotional, behavioral, and cognitive well-being. The term is used to see how we think, feel, and behave, and it is sometimes used to mean an absence of a mental disorder (World Health Organization, 2019).

In addition, mental health can affect our relationships, our daily life, and our physical health. It also includes the individual ability to enjoy life by attaining a balance between life activities and the efforts to achieve psychological resilience (World Health Organization, 2019).

Mental health is a level of psychological wellbeing. It is when a person lacks mental disorders, meaning the person is functioning at a proper level of emotional and behavioral reconciliation.

Psychological wellbeing refers to the positive mental states, such as satisfaction and the feeling of content. Psychological well-being is high when the person is happy or satisfied with his life (Robertson, 2018). In addition, it is also referring to inter- and intra-individual levels of positive working that can include a person's understanding to others and self-referent attitudes that include one's sense personal development (Burns, 2016).

Happiness is defined as "a state, permanent feature or personality trait, but a more fleeting and changeable state". It is also a feeling or showing, meaning that happiness is not essentially an internal or external experience, but can be both (Ackerman, 2020). It is equated with feeling contentment or pleasure, meaning that happiness is not to be confused with other intense feelings, ecstasy, bliss, and joy.

Life satisfaction is an overall assessment of attitudes and feelings about a person's life at a particular point in time ranging from negative to positive. It is also defined as the degree to

which a person evaluates positively the quality of his/her life. In addition, it can be defined as how much the person likes the life that she or he leads (Ackerman, 2020). Life satisfaction is also defined as "the cognitive assessment of an underlying state thought to be consistent and influenced by social factors" (Ackerman, 2020).

Urbanicity is the degree to which an area is urban. It is how much an area can be characterized as an urban area.

All these terms are defined to ensure a common understanding of the concepts that will be discussed in depth in the literature review and in the methodology. The questionnaire will include questions related to happiness and life satisfaction to see if they are influential reasons at the basis of higher mental disorders and lower psychological wellbeing.

1.4 Research Questions

RQ1: How does urbanicity affect the mental health of Lebanese citizens?

The questions in the survey intend to check the mental health of the participants. Since mental health refers to one's emotions and behavior, the questions include checking how happy or sad the participants feel in relation to the environment they live in. The results should the how much a person's life such as relations, work and leisure time can be affected by Urbanicity.

RQ2: How does urbanicity affect the psychological well-being of Lebanese citizens?

The questions also check for the effect on psychological well-being caused by Urbanicity. The feeling of nervousness and worrying and in some extreme cases suicidal thoughts are a representation of a person's psychological well-being. The questions cross references these feeling and thoughts with the environment one is living in to determine how it is affected by the environment.

CHAPTER 2: LITERATURE REVIEW

2.1 Problems resulting from Immigration from rural to urban areas.

The threats of urbanicity on humans were debated many times. The percentage of people who think that big cities bring happiness rapidly decreased, while the percentage of people who worry and fear about developments in cities regularly increases (Balcioglu, 2001). The relationships between small and large groups in cities bear the traces of tension, displeasure, and disagreement. It has been known that interpersonal relationships are quieter both in small rural areas and villages (Balcioglu, 2001).

In cities, people live on their own in accordance with their own rules. People who come from rural areas ignore the traditional culture and values and are influenced by urban way of life. This may include selfish, egoistic, and unhealthy tendencies (Balcioglu, 2000). So, immigrants may experience identity problems.

Because of the urbanization process, urban residents have difficulty accepting immigrants, which make the adaptation of immigrants to urban life more difficult. When people feel refused in the city life, the feeling of failure increases their violent behavior through externalization and isolation (Balcioglu, 2000). In contrast, the small number of populations, the close relationships between neighbors and the same social status among people provide a social solidarity for citizens. Therefore, aggressive behaviors, crime rates and violent events decrease (Balcioglu, 2000).

Slum problem is one of the main problems resulting from immigration from rural areas to urban districts. Slum leads to important problems since they form an inadequate environment for

people. These negative conditions may affect people and may provide basis for personalities that are more likely to commit crime. Some people might imitate bad role models and may join groups that are liable to crime (Gokcen, 1997). Therefore, these people may show behavioral disorders such as aggressiveness. The houses with inadequate housing environment in slums, and problems of traffic and unemployment may result in disharmony (Gokcen, 1997).

The disturbed lifestyle and the conflicting structure may cause revenge feelings and intense hate. Such individuals may express their hate by violence. Burglary, fraud, aggressiveness, fighting, sexual behavior disorders, alcohol and drug addiction may be seen in aggressive people. Factors such as unemployment and decline in economic status play an important role in violent behavior. The characteristic of social changes, demographic movements have roles in psychosocial aspects of violence (Balcioglu, 2000).

The lack of family support, the unemployment, the social class difference, and the prevalent crime factors in cities may expose an attack against the social identity and welfare of individuals and may make appropriate environment for crime. Hence, the low level of economic status in the community affects the adaptation to city life negatively (Balcioglu, 2000).

The relationship between unemployment and mental disorder cannot be well understood. Though, unemployment may activate mental disorder in predisposed people. Immigrant people are subject to mental stress. Therefore, there is an opportunity that the balance which the individual made in his/her originally adapted environment, may slightly or deeply, endlessly or mildly worsen in the new environment (Ozbek, 1983). The balance formed in the life of a rural person comes under the risk of moving through the immigration process to town. A rural individual who tries to express his personality in town mostly fails to obtain what he wants and

becomes sad. Such a failure causes both economic and psychosocial distress. The isolated lifestyle in town causes behavioral problems since rural people consider their identity as very important. Additional factors such as humidity and noise are also reported to affect mental health negatively (Ewans et al, 2000).

2.2 The Relationship between Living Environment and Mental Health

Annette Chu's model explains the relationship between immigration to towns and mental health (Chu et al, 2004). The five components that affect mental health status are the control over internal environment, the care quality and home design, the important escape opportunities, the crime and the fear of crime, and the social participation.

In addition, Guite et al stated that there are five factors that affect mental health. The factors range from noise stemming from neighbors, feeling of overcrowding at home, perception of crime, failure in joining public activities to lack of satisfying green areas. It is seen that walking in the daytime in green areas affect the mental health of people positively (Guite et al, 2006). Researchers stated that together with urbanization, security problems, and the increase in the number of drug addicted persons made urban citizens more suspicious with the feeling of fear about fellows who threaten their security (Guite et al, 2006).

Other researchers stated that the relationship between mental health and immigration to town is explained by three models. The cultural transformation resulting from shift from a traditional rural area to a modern industrial society is seen as the main reason for psychological disorder. According to that model, the transition from rural area to urban area is very stressful. The second

model is related to psychiatric symptoms due to urban life (Guite et al, 2006). That theory accepts modernization as the source of personal stress and highlights two points. The first point is that industrialization and urbanization lead to social derangement. The second point is that traditional lifestyle of village is healthier from a psychological point of view. According to these researchers, development is regressing and urban life limits people freedom and destroy human's feelings (Guite et al, 2006).

The third model is related with the view that stress results from the changes in economic system, which removes labor without providing enough chances for the workers who are in the modern manufacture site (Guite et al, 2006).

2.3 The negative impact of urbanization on mental health

Poor social support systems and highly stressful ways of life are more prominent in cities than in rural areas (Pedersen & Mortensen, 2001). They may underlie the negative impacts of urbanization on mental health. Researchers suggested that urban environment affects mental health during the early periods of life and increases the general tendency to schizophrenia in later periods (Marcelis, Takei, & Van, 1999). The immigration, the increase in unemployment, the increased encounter with stress and the decline in economic status lead to poor feeding and viral diseases. Poor feeding and viral infections during prenatal period are among the early risk factors related to schizophrenia. It is also considered that there may be a biologic relation between participation in urban life and genetic tendency (Sundquist, Frank, & Sunquist, 2004). Furthermore, familial tendency (describing hallucinations or delusions in family history) and urbanization increase the risk of psychiatric disorder. Another study showed that being born in

city or living in town during childhood period increases the risk of developing psychotic disorders in the future (Marcelis, Takei &Van, 1999). In another study, an increased relationship was shown between depression, psychosis, and rapid urbanization rate both in women and men (Sundquist, Frank, Sunquist, 2004). It is also confirmed that not only schizophrenia but also other psychotic disorders like bipolar disorder are more common in urban life. It is also reported that increase in the impacts of urban environmental factors increases the harshness of psychotic symptoms.

Rural citizens use primary health care services like specialist physicians, health and social services, health relate technologies less often than urban citizens (Coburn, 2002). Some studies reported that suicide attempts and affective disorders are more spread in urban areas in which social support systems are poorer. The reasons are related to economic regression and unemployment which may reveal suicide tendency (Hirschfeld et al, 2000).

Many studies demonstrated that rapid urbanization and urban life have a negative impact on people mental health especially because of abandoning traditions, slum life, estrangement, unemployment, uncertainty of future, social isolation, and incomplete social support (Hirschfeld et al, 2000).

Moreover, the total rate of psychiatric disorders in many countries tends to be higher in urban areas than in rural areas. Thus, the Netherlands Mental Health Survey and Incidence Study (NEMESIS) used the Composite International Diagnostic Interview (CIDI) to control the prevalence of DSM-III-R disorders in a sample of 7076 citizens aged between 18-64 years old. The sample was illustrative of the population, and the study population was assigned to five urbanization groups defined at the level of municipalities (Peen et al, 2007).

The link between 12-month prevalence rates of psychiatric disorders and urbanization was studied using logistic regression taking several confounders into consideration. The results of the study showed that the occurrence of psychiatric disorders gradually increased over five levels of urbanization and the pattern remained after change for a range of confounders. Also, the comorbidity rates increased with level of urbanization. The findings of this study suggest that psychiatric disorders are more complex and more common in more urbanized areas (Peen et al, 2007).

Health authorities in Camberwell, London conducted a study on the mental health of the citizens between 1965 and 1997. They kept case records for every person who was diagnosed with depression, bipolar disorder, psychiatric condition, and schizophrenia over the years. They saw that the incidence of schizophrenia doubled from 11 per 100000 citizens in 1965 to 23 per 100000 citizens in 1997. In 1950, only less than one third of the world's population lived in cities. Currently, more than half of the population lived in cities because of the work opportunities there (Abbott, 2012). Jane Boydell, who led the Camberwell study, stated that the cities are making people sick. The study showed that there is a link between cities, stress, and mental health. Psychiatrists stated that stress can trigger mental disorders, and city life is perceived as stressful. City inhabitants face more crime, more slums, and more noise than those living in rural areas (Abbott, 2012). In Germany, the number of sick days taken for psychiatric illnesses doubled between 2000 and 2010. In North America, 40% of sick days are related to depression (Abbott, 2012).

In addition, a few scientists used functional brain imaging and digital monitoring to see how people living in urban and rural areas differ in the way their brains process stressful conditions (Abbott, 2012). The problem starts when the stress hormone levels remains too high for too

long, which causes high blood pressure and suppress' the immune system. Scientists agree that prolonged or severe stress also increase the risk of psychiatric disease. In theory, the city continual challenges could produce this kind of damaging stress. Some scientists even fear that they could increase the mental illness rate around the world (Abbott, 2012).

Furthermore, a study showed that people who grow up in urban areas process negative emotions such as stress differently from those who moved to the city as adults. The social stress activates two brain areas, but the pattern depended on the patient's histories of urban living. The amygdala, that processes emotion, showed more activity in people who were currently living in a city (Abbott, 2012). The cingulate cortex, which processes negative emotion and helps to regulate the amygdala, responded more strongly in those brought up in big cities than in those brought up in the countryside, regardless of where they live now. Thus, scientists concluded that this over-responsiveness to stress could make city inhabitants more subject to psychiatric conditions such as schizophrenia. In addition, stress in childhood or adolescence can have a huge effect on the brain development and increase the exposure to psychiatric disease (Abbott, 2012).

In addition, researchers linked urbanization with increased incidence of schizophrenia in Ireland. Researchers compared the incidence of schizophrenia in rural and urban areas over 4 years and 7 years respectively using DSM-III-R diagnostic and face to face interviews (Kelly et al, 2010).

The result of the research showed that the rate of schizophrenia in males was higher in urban than rural areas. The incidence of affective psychosis is lower in urban compared to rural areas for males and females. The findings of the study provide persuasive evidence that risk for schizophrenia increases with urban birth and upbringing, especially among man. The association

is unclear, but it may be related to biological, social, and environmental factors such as air pollution, social exclusion, and cannabis (Kelly et al, 2010).

Besides, Daniel Weinberger, director of Lieber Institute for Brain Development in Maryland, conducted a long-term project to study risk factors for schizophrenia in China, where urbanization is happening fast. The percentage of people living in cities has doubled to more than half in the past two decades. Researchers suspect that the city stress leads to psychiatric disease mainly in people who are already at risk because they carry risk genes or because of other environmental stresses (Abbott, 2012). They found that people carrying that one particular gene variant activate the cingulate cortex when they process social stress, like those who were raised in cities. In addition, the mutual urban experience of feeling different from your neighbors because of ethnicity or socioeconomic status could be one factor. Immigrant groups who often experience isolation may be processing stress in the same way to city inhabitants (Abbott, 2012).

Furthermore, early researchers stated that living in urban environment had a negative consequence on people social relationships, quality of life and mental health. This assessment on the impact of urban life on the quality of people lives are reflected in two general perspectives: the linear development and the systemic model first explicated by Kasarda and Janowitz (Adams, 1992).

The linear development model suggests that the increase in population size, density and heterogeneity are the main factors affecting psychological well-being, social integration, and satisfaction with local community. Small and rural towns are characterized by informal social control mechanism, clear social norms, low levels of social disorganization and stable, homogenous populations. Such ecological conditions facilitate extensive social networks, good

psychological wellbeing, and participation in local activities. The environment of urban areas is described as densely populated with heterogeneous culture (Haddad et al, 2015). These ecological conditions lead to conflicting social norms, high level of social disorganization, formal social control mechanisms, and a mobile and heterogonous population. Kasarda and Janowitz refer to this perspective as linear development model because it suggests that as population instability, density and heterogeneity increase, community satisfaction, social integration, and mental health decrease in a linear way (Haddad et al, 2015).

The systemic model argues that urbanization has indirect effects on psychological well-being and interpersonal relationships. Neighborhood is context so people meet and interact with each other's. The neighborhood stability affects the social integration of residents. Therefore, the more stable the neighborhood, the more likely people develop social networks which influence positively the quality of their lives (Haddad et al, 2015).

Besides, suburban residents tend to be younger, more educated, and of higher socioeconomic status than urbanites. These social factors are very important to the quality of people lives. In addition, the linear development and the systemic models have implications for people psychological well-being. The linear development predicts that as the diversity and size of an area population increases, people become more individualistic and apart from others. Furthermore, people develop an increase fear of strangers, lack of control over their daily lives, and a sense of isolation (Glaeser et al, 2014).

The systemic model suggests that neighborhoods of high number of residents provide fewer opportunities for neighbors to meet and develop friendships when compared with stable neighborhood. Therefore, stable neighborhood is associated with high level of social integration

and greater psychological well-being. Research shows that areas characterized by high number of residents have more crime and mental illness than do stable areas (Glaeser et al, 2014). Thus, the urban or suburban location of neighborhood is less important for psychological wellbeing than is neighborhood stability (Glaeser et al, 2014).

In addition, the contact with a high percentage of strangers makes the neighborhood less predictable, less satisfying to residents and more stressful. Neighborhoods characterized by high density and heterogonous population make residents ignore individuals, participate less in social activities, and engage in artificial form of social interaction. The results of adaptive strategies to the city life are transitory, anonymity, and exploitative social relationships, as well as low psychological well-being. Urbanites adopt these defensive behaviors to preserve their psychological well-being (Glass & Singer, 1972).

Moreover, perceptions of crime have a huge effect on the level of social networks, perceived quality of life and participation in local activities. Thus, criminal activity and the fear engendered by that activity constitute one of the most important forces that govern the lives of urban and suburban residents. Some researchers argue that the concern of personal and family safety, and the safety of one's and family possessions is a key component of dissatisfaction with the local area and a major reason that drives people to move from urban to suburban neighborhoods. The fear of crime and crime activities can affect the psychological well-being of the person both indirectly and directly. Many studies showed that the fear of crime and the crime can have a negative impact on participation on local activities and social interaction among neighbors. The result is an increase in psychological problems and isolation. In contrast, safety and fear of crimes directly affect psychological wellbeing because they have a strong effect on the perceived quality of people lives (Adams, 1992).

Moreover, a study made to show the rural-urban differences in mental health argued that the risk for some major mental illnesses such as addictive disorders, mood, anxiety and psychotic is generally higher in cities (Adli, Berger, Brakemeier et al, 2016). Studies related to anxiety disorders such as distress, paranoia and anger found higher rates in urban than rural areas in many Latin American and Asian countries. The same was true for psychotic disorders (such as schizophrenia) in large urban areas in Germany and in China. The risk for schizophrenia in a Danish study was more than double for people who had spent their first 15 years in a big city versus those who had grown up in rural areas (Adli, Berger, Brakemeier et al, 2016).

People are more likely to suffer from schizophrenia as an adult, if they had spent more time in an urban environment. Similarly, mood disorders were observed more often among inhabitants of large cities in Germany (Adli, Berger, Brakemeier, et al, 2016).

Furthermore, social risk factors for mental health in cities include low social capital (such as social support), social segregation (such as perceived minority status) and concentrations of low socio-economic status (income and education levels). Socio economic status is the most studied risk factor that has been associated with mental health. For example: living in poor neighborhood is associated with greater risk of poor mental health (depression, schizophrenia) versus living in richer neighborhoods (Adli, Berger, Brakemeier, et al, 2016).

People with disadvantaged areas may have more problems building and maintaining supportive social relationships which may increase susceptibility to mental illness. The same applies for socially disorganized neighborhoods in which people feel insecure or experience violence, contributing to increased trauma experience with related consequences for mental health (Adli, Berger, Brakemeier, et al, 2016).

Research also indicated that people who had a poor health or experienced difficult life events such as unemployment were more likely to move to more deprived areas due to low and affordable rents. For example, the risk of schizophrenia was reported in urban areas much more than inner cities because growing up in cities influences illness risk (Adli, Berger, Brakemeier, et al, 2016).

Furthermore, rates and prevalence of schizophrenia are higher in most modern industrialized cities, and in urban areas compared with rural areas. The study investigated the link between place of upbringing and schizophrenia with data from 49,191 Swedish man linked to the Swedish National Register of Psychiatric Care. The percentage of schizophrenia was 1.65 times higher among men brought up in cities than in those who lived in rural areas. The researchers concluded that undetermined environmental factors found in cities increase the risk of schizophrenia (Lewis et al, 1992).

In addition, the urban physical environment has higher pollution rates (water and air), noise pollution (traffic), specific urban designs (huge buildings that me considered as oppressive) and more physical threats (violence and accidents), thus likely increasing stress levels with negative effects on mental health. Researchers show that urban noise pollution, air and water can have considerable effects on the mental health of urban populations (Adli, Berger, Brakemeier, et al, 2016). For example: living close to airports or major streets increases exposure to pollution and traffic noise and is linked to higher levels of aggression and stress. A study in Germany found stat people who were annoyed by road traffic had increased risk for impaired mental health. Urban light exposure may change sleeping patterns and may impact the circadian rhythm with known consequences for mental well-being (Adli, Berger, Brakemeier, et al, 2016).

Urban design shows relations with population mental health. For example: greater access to better walkability and green spaces was associated with enhanced physical activity and less depression that may promote mental health (Adli, Berger, Brakemeier, et al, 2016). In addition, the blue spaces and the recreational aspects of urban green are seemingly associated with the mental health of urban populations. Urban blue and green features could buffer heat island effects and minimize heat stress. Additionally, urban street canopy can minimize the oppressive effects of huge buildings (Adli, Berger, Brakemeier, et al, 2016).

Also, urban density has been linked with better mental health since it gives citizens access to resources (such as social care, health, parks, and playgrounds). In contrast, less green space may designate worse access to neighborhood resources and more traffic noise, which may lead to low housing rents that attract low social economic status (Adli, Berger, Brakemeier, et al, 2016).

In addition, another study was made to compare the rates for schizophrenia over 12 years (1979-1984 and 1992-1997) in rural Dumfries and Galloway in South west Scotland with urban Camberwell in South east London. The results showed that the incidence was 61% higher in urban Camberwell than in rural Dumfries and Galloway. In addition, the increased risk in Urban Camberwell is greater in males than females (Allardyce, et al, 2001).

Besides, some UK studies have reported an urban excess in the occurrence of the most common mental disorders of anxiety and depression. A one-year study of 7659 participants aged 16-74 years old living in 4338 private homes in England, Scotland and Wales assessed the Common mental disorders of the citizens by the General Health Questionnaire and multilevel statistical modeling. The results of the study showed that rural residents had somewhat better mental health than non-rural residents. The effects of geographical location on the mental health of the

residents were neither modified nor confused by household income, employment status and socio-economic status (Weigh et al, 2006).

Furthermore, some researchers introduced Neurourbanism, a new field of research that focus on the independencies between urbanization and mental health with the purpose to offer planning and health disciplines with the necessary tools and knowledge to meet this challenge (Adli et al, 2017). Neurourbanism aims to examine the effect of social environments of cities on resident's mental health. The results showed that apart from the person income, inhabitants of Berlin, Germany showed an increasing mental health burden with increasing neighborhood poverty (Adli et al, 2017).

A study published by Coid, Zhang, and Li in Oxford Academic showed that the urban birth and upbringing are constantly linked with schizophrenia and other mental illnesses, but the main urban exposures remain unknown. The main aim of the study is to investigate the effects of exposure to urban birth and upbringing on psychosis in large undergraduate sample in china. Cross sectional surveys were conducted annually during 2014-2018, n=39446. Self-reported categorical measures of psychosis included paranoid ideation, schizotypal symptoms and psychoticism using SCL-90-R, depressive symptoms using PHQ 9, putative etiological risk factors of childhood maltreatment and family history, lifetime clinical diagnosis of schizophrenia, length of residence during these years, length of residence in urban location, urbanicity measured according to birth place in a major city (level 5 of a 5-level rural-urban scale), and birth - 15 years. The study investigated the effects on the four psychosis phenotypes of urban living, urban birth, and critical times of exposure to urban environment and putative etiological risk factors before and after adjusting to depression. The study examined the associations between etiological risk factors and urban exposures. The results showed that 5,4%

of the participants have psychoticism, 5,3% have paranoia and 1,9% has schizotypal symptoms while only 1,9% has schizophrenia. The study revealed that urban birth was linked to paranoia, schizophrenia, schizotypal symptoms, but not psychoticism. All these phenotypes were not related to periods less than 10–15 years of exposure to urban living. In addition, schizophrenia was related to critical timings of total exposures of 1-3 years and 4-5 years during the first five years in an urban environment. There were negative associations between urban exposures and putative etiological factors. The study concluded that urban birth and living were linked to schizophrenia in the large sample of Chinese university students (Coid, Zhang & Li, 2020).

Furthermore, depression is more predominant in rural Chinese samples. There was also an association between paranoia, schizotypal symptoms, and schizophrenia. Schizophrenia is strongly related to urban exposures of birth and length of time in an urban environment. It also showed effects of critical timing of exposure to urban environment during infancy. There was no indication that urban effects were related to increased risk from lower family income, increased genetic risk, or child maltreatment among Sichuan students (Coid, Zhang & Li, 2020).

Adolescents are sensitive to their social environment. Neighborhood effects such as urbanicity, exposure to violence, social norms and institutional resources and socioeconomic conditions may be relevant to their development. Living in urban area seems to be associated with an increased risk of mental health problems than rural area (Peen et al, 2010). This effect is independent of other known risk factors such as ethnicity, drug use, socioeconomic status, and sex. Studies exist on the effect of urbanicity on mental health as well as for the migration of individuals at risk for mental health problems toward more urban areas. Therefore, the urbanicity and mental health association is a combination of reciprocal influences between the wider social environment and individuals (Evans et al, 2020).

Studies showed that adults inhabitants of urban areas are more likely to suffer from psychiatric disorder compared to those living in rural areas. This risk for mental health problems is greater to those who grew up in a city. This suggests that the effect of urban environment on mental health may be influential during youth. A few studies in children demonstrated that children living in urban areas were more likely to suffer from autism, attention deficit disorder, psychosis, and behavioral and emotional problems compared to those living in rural areas (Evans et al, 2020).

Several studies showed that urbanicity may affect teenager's mental health. The rate of juvenile delinquency was higher in urban areas than rural areas. Thus, researchers reported that teenagers living in urban areas were more likely to be diagnosed with depression, psychiatric disorder, and aggression compared to those living in rural areas. Social stress is one of the influential reasons since it is greater in cities. It is elicited by a crowded environment, perceived isolation, greater anonymity, competition for resources and encounter with unclear dominance order and strangers, all of which are more common in urban areas than rural areas. Thus, the threat of defeat and social evaluation increases. These social stress factors are strongly predictive for mental health problems (Evans et al, 2020).

Humans process social stress by activating the biological stress system. Thus, the biological stress system has been related to urbanicity and mental health. Humans are equipped with two biological stress systems: the automatic nervous system (ANS) and the hypothalamic-pituitary-adrenal (HPA) axis. They are activated when an individual encounters a stressor which makes the person respond adaptively. Catecholaminergic activation of the ANS is fast and serves the 'fight or flight' response which can be detected by an increase in heart rate. The HPA axis responds more gradually and can be perceived by increased levels of cortisol 20 minutes after the start of the stressor. Most individuals respond biologically to a stressor in different ways. Hyper-

responsivity which is an exaggerated responding to a stressor, and hypo-responsivity which is a blunted response to a stressor, are both related to mental health problems (Evans et al, 2020).

Living in a stressful environment disrupts the normal development and functioning of the stress systems. Urban environments are more stressful than rural environments because of the increase social stress in these places. There is some evidence that living in urban areas is related to dysregulated stress system functioning. Studies showed that adults who currently live and grew up in urban areas showed different limbic brain area responsivity to psychosocial stress compared to those who lived and grew up in rural areas. In addition, studies showed a strong association between living in urban areas and heart rate reactivity in adolescents (Evans et al, 2020).

Researchers aimed to examine whether urbanicity was related to sub clinical mental health problems directly and indirectly, via biological stress system functioning from Dutch general population using cross sectional data. 323 participants were randomly chosen from 35 municipalities in Netherlands. 54% were female and 46% were male, 86% were of Dutch or other western background and 64% were from high socioeconomic background. Participants were asked to fill out a questionnaire and to do a psychosocial stress procedure at the Erasmus University Medical Center in Rotterdam. The tasks consisted of a mental arithmetic task (mental serial subtraction), a computer mathematics task (numerical ordering), and a public speaking task (speech). The session ended with a recovery period and a relaxing nature documentary. The perceived stress was reported five times during this procedure and used to see if the procedure was stressful (Evans et al, 2020).

The results showed that urbanicity was related to two indices of stress system functioning. Adolescents who were from more urban areas showed weaker acute ANS and HPA axis reactivity. The study did not show a direct association between urbanicity and mental health problems. There was an evidence for an indirect effect of urbanicity on mother reported behavioral problems via acute ANS reactivity. Researchers observed some evidence for relations between urbanicity, biological stress system functioning and behavioral problems (Evans et al, 2020).

Researchers suggest that the lack of association between mental health problems and urbanicity in adolescents has to do with socio economic status. Most of the sample comes from families with high social economic status. High socio-economic status may act as a protective factor for mental health problems. For example: higher quality housing (less noise, more green areas in the neighborhood, less crowding in the house). In conclusion, the high socioeconomic status of most adolescents in the sample buffered the effects of urbanicity on mental health and the biological stress system functioning (Evans et al, 2020).

Depression, anxiety, schizophrenia, dysthymia, and bipolar disorder are among the five mental illness known worldwide. There are many studies that showed an association between mental health and urbanicity especially for those who lived in cities during their early life. It seems that the rate of incidence of psychiatric disorders is 1.6 times higher in the urban areas than rural areas (Vassos et al. 2016). In addition, schizophrenia and related disorders are higher in urban areas than rural areas. Urban residents have a greater risk of mood disorders than non-urban (Penn et al. 2010).

2.4 Effect of Green Spaces on Citizens

The presence of green spaces found in rural areas is viewed as a healthy promoting characteristic of housing environment, and has been linked to many benefits such as stress reduction, reductions in crime, aggression and violence, neighborhood social cohesion, better self-reported health, reduced morbidity in multiple disease categories, and recovery from mental fatigue (Hartig et al, 2014).

Some studies have shown that there is a relationship between mental health and green space, and that the effect of local green space on health is related to the amount of an individual's exposure to the local environment (Beyer et al, 2014).

Green spaces in rural areas can have direct protective effects against health dangers posed by noise pollution, air pollution, and extreme temperature. It has been associated with increased health promoting behaviors such as increased levels of social support, physical activity, and sense of community. In addition, it has mental health benefits such as stress reduction and attention restoration that minimize mental fatigue (Beyer et al, 2014). Attention Restoration Theory suggests that experiences in natural environment can minimize mental fatigue and reestablish the capability for directed attention (Lederbogen et al, 2011).

Directed attention is active when something does not attract attention to itself but holds attention, nonetheless. Mental effort is required to maintain this focus, which can lead to mental fatigue. Individuals must have the chance to relax directed attention to recover from mental fatigue. One way to achieve this is to engage in another kind of attention called fascination attention, which happens unwillingly and does not require the same mental effort as directed attention.

Researchers argue that nature has the capacity to fascinate, thus providing a healing experience that allows recovery from mental fatigue (Beyer et al, 2014).

Researchers analyzed the data of 2479 US individuals to assess the symptoms of depression, anxiety, and stress according to the three scales of 42 items Depression Anxiety and Stress Scales Instrument. The symptoms of depression range from being convinced that life has no meaning or value, feeling blue, gloomy, self-disparaging, dispirited, being unable to experience satisfaction or enjoyment, being pessimistic about the future, and being unable to become involved or interested in something. The symptoms of anxiety ranges from suffering a dryness of the mouth, sweatiness of the palms, pounding of the heart, being worried about performance and possible loss of control, and being apprehensive, panicky, shaky and tremble. Also, the symptoms of stress range from being unable to relax, tense, easily upset and startled, nervy, jumpy, touchy, and fidgety (Beyer et al, 2014).

The results of the study showed that higher proportions of people between 55-64 years old lived in environments with green spaces, where people under 44 years old lived in environments with minimum green spaces (Beyer et al, 2014). The results also indicated that the high level of environment green space is associated with better mental health outcomes. The findings also showed that old people had lower levels of stress, anxiety, and depression. Females were also less likely to report depression than males. People with less than a high school education reported more anxiety than individuals with postgraduate education. Also, people making less than $20000 per year had poor mental health than those making $75000 or more per year. Also, individuals living in cities reported higher levels of depression and stress. Neighborhood green space was constantly linked with lower levels of stress, depression, and anxiety. The study showed that a high level of neighborhood green space is related to better mental health. The link

between green space in rural areas and mental health is important and sizeable (Beyer et al, 2014).

In UK, researchers conducted a longitudinal survey of over 5000 UK households from 1991 to 2008 to explore the longitudinal effects of changes in green space on the mental health of residents. The study examined the impact of home relocation to a less green or greener urban area (Alcock et al, 2014). Previous studies suggested that mental health is better in greener urban areas, and that mental health improved during years of residence in greener areas. Researchers stated that it may take time to accumulate the mental health benefits from moving to a greener area and so the first years will show little immediate impact. The study showed that mental health improved within a year and remained almost the same for the following two years. Results also showed that for movers to fewer green areas, there was a decline in mental health (Alcock et al, 2014).

Researchers studied whether the effect of walking in nature may be useful for individuals with major depressive disorder (Berman et al, 2012). Twenty adults diagnosed with major depressive disorder participated in this study. They were asked to think about an uncertain negative autobiographical event prior to taking a 50-minute walk in both an urban and natural setting. Mood and short-term memory span were reviewed again after the walk. Participants returned to the lab and repeated the entire procedure after one week but walked in a different location. The results showed that participants showed affective and cognitive improvements after walking in nature. The findings suggest that interacting with nature, even while thinking about a painful memory, is useful for people suffering from mental disorders. In addition, the effect sizes for individuals with mental disorders were almost five times more than the effect sizes observed in

another study with healthy individuals. These results suggest that people with depression benefit even more from such interactions (Berman et al, 2012).

Marc Berman and his colleagues conducted a research in Michigan on 23 females and 15 males, who were assigned to walk for 50-55 min in a park or in downtown (Berman et al, 2008). After the walk, participants returned to the laboratory and performed a PANAS, a backwards digit-span task, and responded to questions related to their walk. After one week, participants returned to the laboratory and repeated the procedure, walking in a different location. The results showed that the digit span considerably improved when participants walked in nature, but not when they walked downtown. The findings found that participant's improvement when walking in nature was highly reliable (Berman et al, 2008).

In addition, the researchers performed a second experiment where the participants viewed 50 pictures of nature or urban areas. Picture viewing lasted for 10 minutes, during which participants rated on a scale of 1 to 3 how much they enjoyed each picture. The pictures were displayed for 7 seconds. After that, participants performed a second time the backwards digit-span task, the PANAS and the ANT. Participants returned to the lab after one week and performed the same procedure but viewed complementary set of pictures. The results of the study showed improvement only after viewing picture of nature compared to urban areas (Berman et al, 2008).

Both studies showed that nature have a restorative value to improve cognitive functioning. Nature may be more peaceful than other environments which help in restoring directed-attention abilities. Therefore, these studies showed that a brief and simple interaction with nature can produce an increase in cognitive control (Berman et al, 2008).

Furthermore, researchers suggested that there is strong evidence for positive relations between mental health and experiences of natural environments (Ward Thompson et al, 2012). It seems that contact with natural environments in rural areas promotes psychological restoration (Kaplan & Kaplan, 1989), improved attention and mood (Barton and Pretty, 2010, Hartig et al., 2003, Roe and Aspinall, 2011) (Ottosson & Grahn, 2005) and minimized anxiety and stress (Grahn & Stigsdotter, 2003, Maas et al., 2009a, Ulrich et al., 1991). Research has constantly shown the benefit of green space on self-discipline and cognitive restoration (Faber Taylor et al., 2002, Kuo, 2001), reduced crime and aggression (Kuo & Sullivan, 2001a) (Kuo & Sullivan, 2001b).

Rural areas give people the opportunity to engage in a physical activity as an essential part of experiencing natural environments such as walking in a garden or park. The positive effects of physical activity on mood and stress are well established. Also, people have the opportunity for some informal or unplanned social contact when they experience green space since they might engage or see someone there. Therefore, social contact is known to have positive effects on stress level and mood (Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003). People often intentionally seek natural environments because these places are appropriate for relaxing and allow them to recover from demanding tasks and situations (Grahn et al., 2010). Experimental studies have confirmed that viewing or being in green space has reduced physiological measures of stress including blood pressure, muscle tension and skin conductance. A Japanese study showed that the effect of a green space intervention can promote lower concentrations of cortisol, lower blood pressure and pulse rate, lower sympathetic nerve activity and greater parasympathetic nerve activity when compared to urban environments (Park et al., 2007, Park et al., 2010).

Furthermore, a UK study recruited a sample of 25 men and women aged 35-55 years old in January 2010. Participants were asked to complete a questionnaire to measure their mental health. The self-report mental health was measured using the Warwick and Edinburgh Mental Wellbeing Scale (Stewart-Brown et al., 2009). The questions ranged from asking participants how they feel over the last month to 7 items measuring aspects of mental health (feeling useful, feeling relaxed…) with responses rated on a 5 item scale from all the time to none of the time. The final scores can range from low mental health (7) to high wellbeing (35). The participants' residential environment that was green space was measured using the data based on each participant's postcode at Centre for research on environment society and health (Mitchell et al., 2011, Richardson and Mitchell, 2010). The results of the study showed that there is an opposite relationship between percentage of neighborhood green space and self-reported stress (PSS) (marginally significant at $P = 0.051$), showing that participants perceived stress levels increased as the amount of green space in their neighborhood decreased, thus the level of mental health decreased also.

Recently, people are more interested in building ecological architecture, green fields, and natural parks to get eco-friendly and cheerful surroundings in urban centers (Chiesura, 2004). The ecofriendly factors improve our quality of life, which made people prefer the comfortable living environment free of physiological fatigue (Bolund & Hunhammar, 1999). Kaplan and Kaplan declared that nature beauty improves the concentration and the interest and reduces the stress and the fatigue in our daily life (Kaplan & Kaplan, 1989).

Past researchers suggested that natural environments help in reducing stress and lead to psychological stability such as a calm mood. Physiological indices such as heart rate and the blood pressure tend to normalize when people look at natural scenic views (Laumann, Gärling &

Stormark, 2003). Therefore, living in a nature friendly environment is a primer for improvement in self-control and crime prevention (Taylor, Kuo & Sullivan, 2002).

Researchers wanted to determine how natural environments can lead to beneficial influences on the emotional status in terms of the neural mechanism. They used the BOLD-based fMRI technique to identify the brain centers associated with urban and natural scenic viewing in humans and the compare the activation patterns. A total of 28 participants, consisting of 16 males and 12 females from 25 to 38 years old were included in the study. All the subjects had no history of neurological or psychiatric illness. Each participant was asked to rate their emotional status while viewing the urban and natural scenes on a 3-point scale (suffocating, accustomed, and comfortable). The urban and natural scenes were presented for 3 seconds each and repeated two times during the activation condition. The natural scenes ranged from forest, natural parks, and mountains to natural landscapes. Urban scenes included themes such as tall buildings, city landscapes and so on. The functional images were analyzed using the SPM99 software. The questionnaire results evaluating the participant's status while viewing the natural scenes were as follows: 93% were comfortable, 4% were accustomed and 4% were suffocating. In contrast, the results of the participants who were exposed to urban scenes were as follow: none of them were comfortable, 50% were accustomed and 50% were suffocating (Gwang et al, 2010).

The predominant brain activation areas following exposure to urban scenes in contrast to natural scenes were observed in the middle and inferior occipital gyri, inferior frontal gyrus, anterior temporal pole, amygdala, parahippocampal gyrus, and hippocampus. Participant's unpleasant emotion was linked to a significant increase in the occipito-temporal cortex, parahippocampal gyrus, amygdala, and hippocampus (Gwang et al, 2010). The study showed that the primary visual cortex and its adjacent areas, which consist of the middle and inferior occipital gyri,

showed higher activities in urban scenes compared to natural scenes. Though, the superior occipital gyrus showed a higher degree of activity in viewing the natural scenes. The findings suggest that the brain activation may be due to an underlying original nature related to unpleasant emotion, while viewing urban scenes. The findings also showed that the differential functional neuroanatomies for each scene are apparently related to subjects' emotional responses to the natural and urban environment (Gwang et al, 2010).

In fact, Jolanda Maas stated that many European cities have experienced a recent decline in the quantity and quality of green space. Economic considerations often succeed in spatial planning at the expense of green space. To know about the health consequences of this development, Jolanda et al, investigated the relationship between the perceived general health and the amount of green space in people's living environment. This relationship was analyzed for rural and urban areas separately because the strength of this relationship would vary according to urbanity. The study included a sample of 274000 person aged 24 years old and above. Participants were asked to fill a one-page self-administered form on perceived general health and socio demographic background. The percentage of green space (agricultural space, real nature, and urban green space) in a 1 and 3 km radius was calculated for each individual. Multilevel logistic regression analyses were performed to control the socio demographic characteristics. The results of the study showed that the percentage of green space has a significant positive effect on perceived general health (Lecic-Tosevski, 2019). The strongest effect was found in the percentage of agricultural space. The percentage of built spaces negatively affected people's health in all degrees of urbanity. Thus, green space appeared to be more than a luxury good, which means that the development of green space should get a more central position in planning policy and healthy planning should definitely include a place for green spaces (Lecic-Tosevski, 2019).

Besides, to test experimentally the theory that urban living and upbringing moderate neural processing of acute social stress, researchers studied the neural responses of German participants experiencing such stress during functional magnetic resonance imaging (fMRI). The results were confirmed in a second study using a different social stress example and then tested for cognitive specificity by determining the consequence of urbanization on brain activation through cognitive processing without stress. All the participants did not have a mental disorder.

The Montreal imaging stress task was used in the first study, a social stress example where individuals resolve arithmetic tasks under time pressure. The stress levels were measured before and after each session using a visual analogue scale, and effects of MIST on blood pressure, heart rate and salivary cortisol were recorded frequently. Urbanicity was quantified by city with more than 100,000 inhabitants, rural area, and town with more than 10,000 inhabitants (LeDoux, 2000).

The results of the study showed that in the amygdala the activity during stress was related to city living. The amygdala has been strongly involved in depression, anxiety disorders and other behaviors that are increased in cities, like violence (Meyer, 2006).

On the other hand, urban upbringing showed a different, but equally regionally effect on the major part of the limbic stress regulation system that reveals high neuronal glucocorticoid receptor expression during stress, and is associated in processing chronic social stressors like social defeat (Herman et al,2005). Thus, any of the factors related to urban living such as noise, toxins, pollution, crowding could be responsible for the observed associations. This confirms that urbanization is causal for mental disorders (Peen et al, 2010).

2.5 Urbanization effect on Lebanese people

In Lebanon, the causes of urbanization are due to the increase in population and the migration of people and their settlements in urban areas. Lebanon suffered extensive displacement of people during and after the civil war, which was followed by unplanned and unprecedented urban growth. The lack of appropriate transportation system connecting the various parts of the country and the centralization of services has led people to settle at the proximity of urban centers searching for better life conditions, which increased urban agglomerations (Khamis, 2018).

The concentration of people in one area leads to uncontrolled increase in real estate prices. Rents in Beirut are four times higher than the minimum wage, which makes them unaffordable to most employees and increase the demand on accommodations in peripheral areas of the city. This increase in demand had led to an uncontrolled development of construction projects in green areas outside the city too. The situation led to urban slums offering very bad living conditions, with restricted access to basic services and sanitation (Khamis, 2018).

This pressure caused by extreme urbanization has increased social problems and social inequalities. In addition, urbanization poses risks on the environment since it increases the pressure on natural resources and affects the availability of green spaces. For example: many areas in Lebanon like Hazmieh, Antelias, Jiyeh, Mansrourieh and Zouk Mikael have lost their green spaces and are now occupied by commercial and residential developments. The unplanned urban sprawl has caused an underdevelopment of well-organized infrastructure systems. The poorly defined national planning authorities, the lack of coastal, national, and regional land use plans, and urbanization have led to the decline of the environment, as well as many social and economic problems (Khamis, 2018).

2.6 Urban areas' effect on psychological well-being of Lebanese people

A Lebanese study was conducted to measure the urban area's effect on the psychological wellbeing of citizens in Tripoli City. Tripoli, which is located 85 kilometers North of Beirut, is considered as the second largest city in Lebanon. The study included both a questionnaire survey and an observation (Harb, 2016).

According to Harb, Lebanese cities lack public spaces such as gardens and parks. Tripoli is considered as the most active and dynamic city in North Lebanon, it also has famous landmark, public garden, a clock tower, and many other colonial and Ottoman buildings.

The study analyzed the different types of spaces, the vehicle and pedestrian movement, the water and green areas, and the noise and activities of people in the city. People activities ranged from walking, shopping, sitting, standing, watching others, and talking to other people.

The study used an online questionnaire survey based on Google form targeted to local residents to measure their psychological well-being. The sampling technique was a random sample determined by a sampling calculation related to Tripoli population size. A total of 65 respondents completed the survey during June and July 2018. The questionnaire was divided into three main sectors and the analysis was done using IBM SPSS statistic (Elsamahy & Abd el Fattah, 2018).

The results of the study showed that the main stressors that increase the psychological stress level are traffic jam, the visual pollution, the space cleanness, the noise, and the overcrowding.

Other stressors were also reported like the absence of parking area, the lack of safety, the overcrowded roads, the disorganization of shops and street vendors. The only factors that reduce

the psychological stress were the movement flow, the architectural heritage, and the green area (Elsamahy & Abd el Fattah, 2018).

The findings of this study showed that there is relation between public space user's activities and their psychological wellbeing through sensory experience. The external stressors that decreased the psychological wellbeing of Lebanese people are the noise produced from traffic jam and street vendors and its annoyance effect, the status of permanent attention produced by vehicle movement flow and pedestrian, the lack of safety and overcrowding, and the pollution that lead to sickness and loathing. The green area and water feature were the only factors that can increase the psychological well-being of the citizens (Elsamahy & Abd el Fattah, 2018).

Chapter 3: Methodology

A survey will be used to measure the data, and it includes the gender, relationship status, number of children, level of education, and average monthly income of the participants. The questionnaire will also determine where the participants were born, and their current residence.

The population that will be studied will include participants from different Lebanese regions (small city, rural area, and large city). To remain unbiased, a snowball sampling technique will be used. A Snowball sampling is a non-probability sampling technique used when characteristics to be possessed by samples are difficult to find. This technique will be used because it is cost effective and sampling can be completed in a short period of time (Dudovskiy, 2008). A link to the survey will be sent on the phone https://forms.gle/knjuvQ2JmaWHwCME7

Furthermore, mobile phone was chosen as an effective way to reach this large number of people who might respond within minimum time. I have sent the link to my friends in Lebanon, whom they have sent the link to their relatives, friends, and neighbors. Thus, the link was sent to friends of friends. All the 515 replies were by phone, and they were exported to an excel sheet to be analyzed.

This method was also used because of the COVID-19 global crisis. The survey includes an introduction explaining the purpose of the survey and asking for people agreement in order to be part of this research. Google doc online survey software was used to create and distribute the questionnaire. After the person agrees to participate in the survey, he/she will be asked to answer the questions with total anonymity. The survey includes multiple choice questions only.

Chapter 4: Results

In this section, I will analyze the answers of the respondents by using the Cross tabulations (crosstabs) technique. Cross tabulations technique is a quantitative research method used to analyze the relationship between two or more variables where the data is recorded in a table or matrix (Devault, 2019). In addition, data collection in cross tabulation is the count of the occurrences of the variables which is referred to as frequency. The table is used to show the frequency of the occurrences of the variables that are being studied. Cross tabulation technique is also used to analyze frequencies for a designation or for a particular group (Devault, 2019).

We intended to target 1000 respondents but because of the Beirut explosion that occurred on August 4, only 515 people filled the questionnaire.

4.1 Descriptive Statistics

We will start by analyzing the data of the first six questions that were related to the participant's gender, relationship status, place, income, education, and number of children to get a general idea about the participants' background.

Q1 What is your gender?	*N*	*%*
Male	198	39%
Female	310	61%
Total	508	100%

Table 1 Gender of the participants

Table 1 shows that 61 % of respondents are women, while 39% of them are men.

Q2 Which of the following best describes your current relationship status?	*N*	*%*
Single	324	64,16%
Married	173	34,24%
Divorced	8	1,6%
Widowed	0	0%
Total	505	99,8%

Table 2 Table 2 Relationship status

Table 2 shows that of the total sample size, 64,16% of the respondents are single, 34,24% of them are married, while only 1,6% are divorced. In addition, none of the respondents were widowed.

Q3-What is your number of children?	*N*	*%*
0	347	69,1%
1	36	7,2%
2	65	13%
3	39	7,8%
4	13	2,6%
More than 4	2	04%
Total	502	100%

Table 3 Number of children

Table 3 shows that, out of 515 subjects who participated in this survey, most of them (69,1%) do not have children, while 7,2% only have 1 child. In addition, 13% of the participants have two children, and 7,8% have three. Also, 2,6% of the subjects have 4 children while only 0,4% has more than 4

Q4- What is your level of education	*N*	*%*
Less than high school diploma	10	2%
High school graduate	48	9,5%
Bachelor's degree	214	42,2%
Master's degree	219	42,8%
PhD degree	18	3,6%

Table 4 Level of education

From table 4 one realizes that 42,8% of the respondents have a master's degree, while 42,2% hold a bachelor's degree. In addition, 9,5% are high school graduate while 2% have less than high school diploma. Only 3,6% of the participants have a PHD degree.

Q5 What is your average monthly income?	*N*	*%*
Below 1.000.000 L.L	44	8,7%
1.000.000-1.500.000 L.L	62	12,3%
1.500.000-2.000.000	65	12,9%
More than 2.000.000	202	39,7%
Unemployed	135	26,8%
Total	504	100%

Table 5 Average Income

Table 5 shows that 39,7% of the respondents earn more than 2.000.000 L.L per month, whereas 26,8% are unemployed. In addition, 12,9 % of respondents earn between 1.500.000-2.000.000 L.L and 12,3% earn between 1.000.000-1.500.000 L.L per month. The results also show that 8,7% of respondents earn less than 1.000.000 L. L per month.

Q6 Where was you born?	*N*	*%*
Rural area	124	24,8%
Small city	230	45,6%
Large city	148	29,7%
Total	502	100%

Table 6 Place of Birth

Table 6 shows that a high percentage of respondents 45,6% were born in a small city while 29,7% were born in a large city. In addition, 24,8% of subjects were born in rural areas.

Q7 What type of community do you currently live in?	*N*	*%*
Rural area	111	22,9%
Small city	222	43,8%
Large city	174	34,3%
Total	507	100%

Table 7 Current place of residence

Table 7 shows that of the total sample size, 44% of the respondents are currently living in a small city. In addition, 33,9% are currently living in a large city while 22,1% are currently living in a rural area.

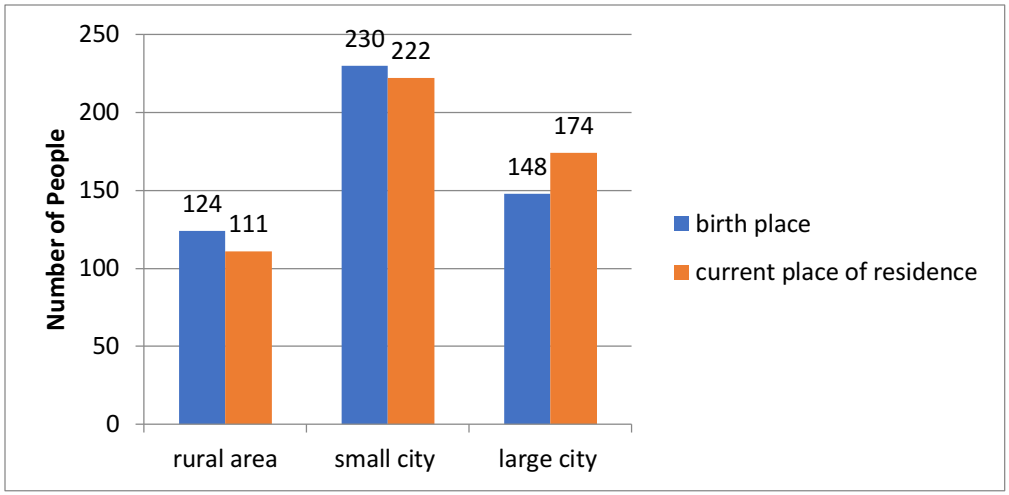

Chart 1 Birthplace VS Current Place of Residence

Chart 1 shows that the number of people currently living in a large city increased from 148 to 174, while the number of people living in rural area decreased from 124 to 111 and the number of people living in small city decreased from 230 to 222. Thus, the bar chart (1) shows that people moved from rural area and small city to a large city.

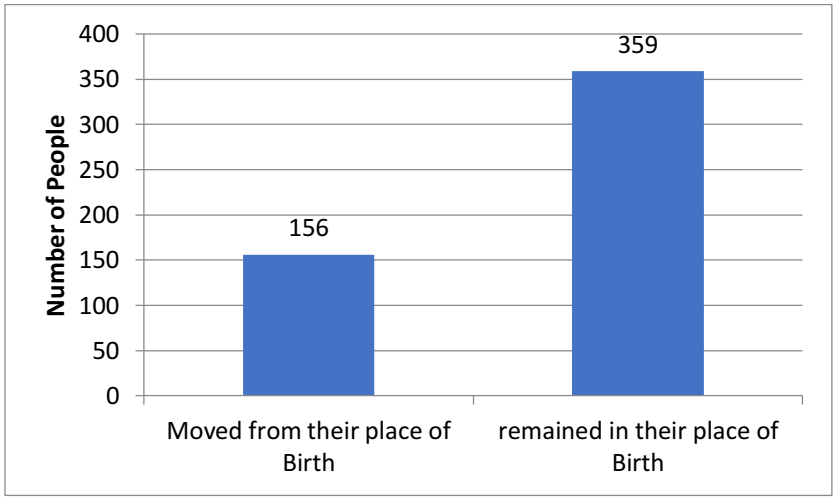

Chart 2 Moved vs Remained

Chart 2 shows that from 515 participants, 156 persons moved from their place of Birth while 359 persons remained in the same place

Q8/Q7 How long have you been living there?	*Rural area*	*Small city*	*Large city*
Less than 5 years	9 (1,8%)	13 (2,5%)	24 (4,7%)
5-10 years	8 (1,6%)	19 (3,7%)	35 (6,8%)
11-15 years	1 (0,2%)	6 (1,2%)	11 (2,1%)
More than 15 years	93 (18%)	184 (35,7%)	105 (20,3%)
Blank responses	7		
Total	515		

Table 8 Length of Residency

Table 8 shows that the majority of people (35,7%) have been living in a small city for more than 15 years, while 20,3% have been living in a large city for more than 15 years and 18% have been living in a rural area for more than 15 years.

Q9 What were the reasons for moving	*N*	*%*
I was born here	272	58,1%
Unemployment	24	5,1%
Access to better services (schools, shops, hospitals, restaurants)	82	17,3%
Access to better infrastructure (internet, mobile signals, better roads)	16	3,4%
Unemployment, access to better services and infrastructure	76	16,1%
Total	*470*	*99,9%*

Table 9 Reasons for Moving

Table 9 shows that the majority of the participants 58,1% were born in a large city. 17,3% of the participants moved from small city and rural area to a large city to get access to better services, while 16,1% moved to have access to better services and infrastructure and because they were unemployed. In addition, 5,1% moved from a rural area, small city to large city due to unemployment only and 3,4% to get better infrastructure. Thus, the majority of people moved to a large city to get better services.

4.2 Mental Health and feelings

In order to answer the research question: "How does urbanicity affect the mental health of Lebanese citizens?" I then asked the participants questions related to their feelings and state of mind to quantify the answers and get an average; I used the values shown in table 10 below:

Answer	Value
Never	1
Rarely	2
Sometimes	3
Most of the times	4
Always	5

Table 10 Values assigned to Answers

For the participants who answered "Never" for questions 10 through 18, I used the Value "1" to represent the answers. As for the participants who answered "Rarely", I used the value "2" to represent their answers. I used the value "3" to represent the answer of participants who replied "Sometimes". For the answer " Most of the time", I used the value "4" to represent the participants' answers. Finally, for the participants who answered "Always", I used the value "5" to represent their answer.

Q10 Do you feel sad or depressed?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	7 (4%)	5 (2,25%)	4 (3,60%)	16(3,2%)
Most of the time	24(13,71%)	35(15,77%)	14(12.61%)	73(14,3%)
Sometimes	81(46,29%)	98(44,14%)	56(50,45%)	235(45,7%)
Rarely	43(24,58%)	63 (28,4%)	31(27,92%)	137(26,7%)
Never	20(11,42%)	21 (9,45%)	6 (5,40%)	47(9,1%)
Average	2.7	2.7	2.8	
Total (%)	175 (33,9%)	222 (43,1%)	111 (21,5%)	515(100%)

Table 11 Sad and Depressed Feeling

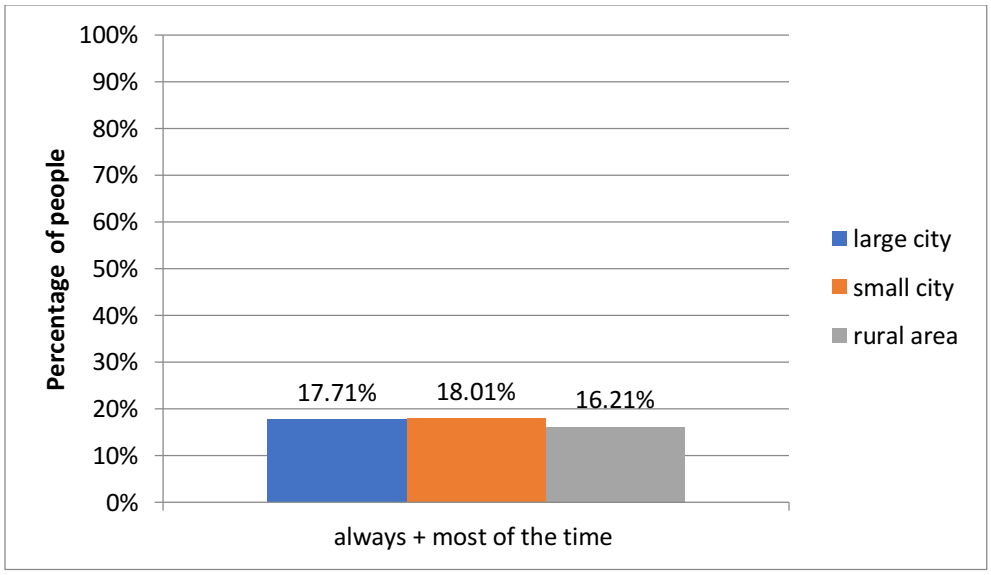

Chart 3 Sad and Depressed Feeling VS Current Place of Residency

Q11 Do you feel shakiness and nervousness inside?	Large city	Small city	Rural area	Total (%)
Always	6 (3,42%)	12(5,4%)	7 (6,3%)	25(4,85%)
Most of the time	30(17,1%)	26(11,7%)	14(12,6%)	70(13,59%)
Sometimes	78(44,6%)	94(42,3%)	44(39,6%)	218(42,3%)
Rarely	44(25,1%)	72(32,4%)	35(31,5%)	152(29,51%)
Never	17(9,70%)	18 (8,1%)	11 (9,9%)	46(8,93%)
Average	2.8	2.7	2.7	
Total (%)	175(33,9%)	222(43,1%)	111(21,5%)	515(100%)

Table 12 Shakiness and Nervousness Feeling

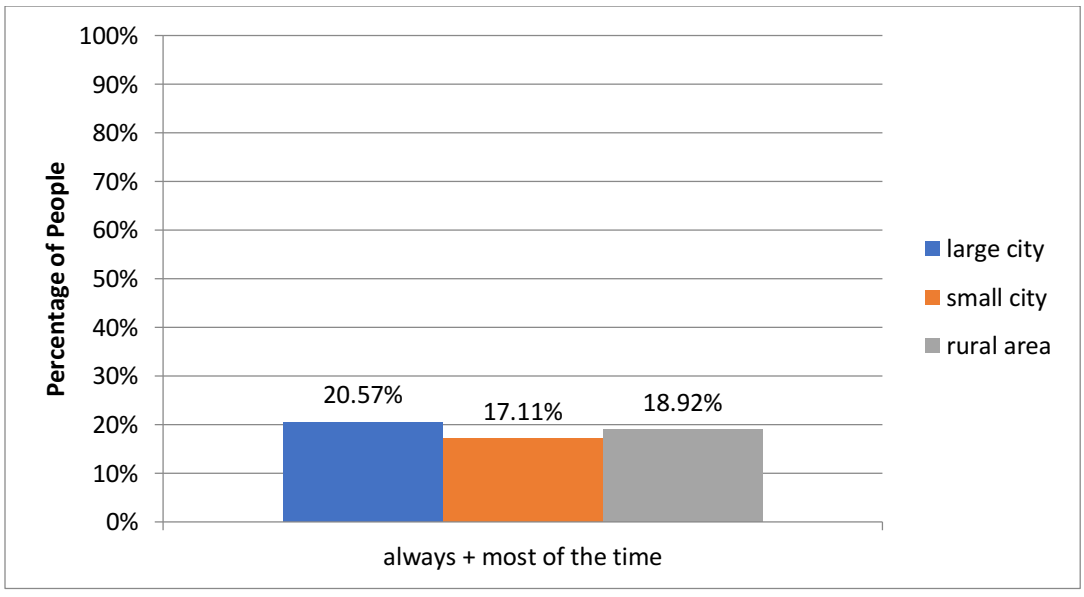

Chart 4 Shakiness and Nervousness Feeling vs Current Place of Residency

Q12 Do you worry too much or panic too much?	Large city	Small city	Rural area	Total (%)
Always	10(5,75%)	10(4,5%)	7 (6,36%)	28(5,34%)
Most of the time	21(12,06%)	48(21,62%)	27(24,54%)	96(18,6%)
Sometimes	70(40,22%)	89(40,09%)	36(32,72%)	196(38%)
Rarely	51(29,32%)	55(24,77%)	31(28,18%)	138(26,8%)
never	22(12,64%)	20(9%)	9(8,18%)	52(10,1%)
Average	2.7	2.9	2.9	
Total (%)	175(33,7%)	222(43,1%)	111(21,3%)	515(100%)

Table 13 Worry or Panic Feeling

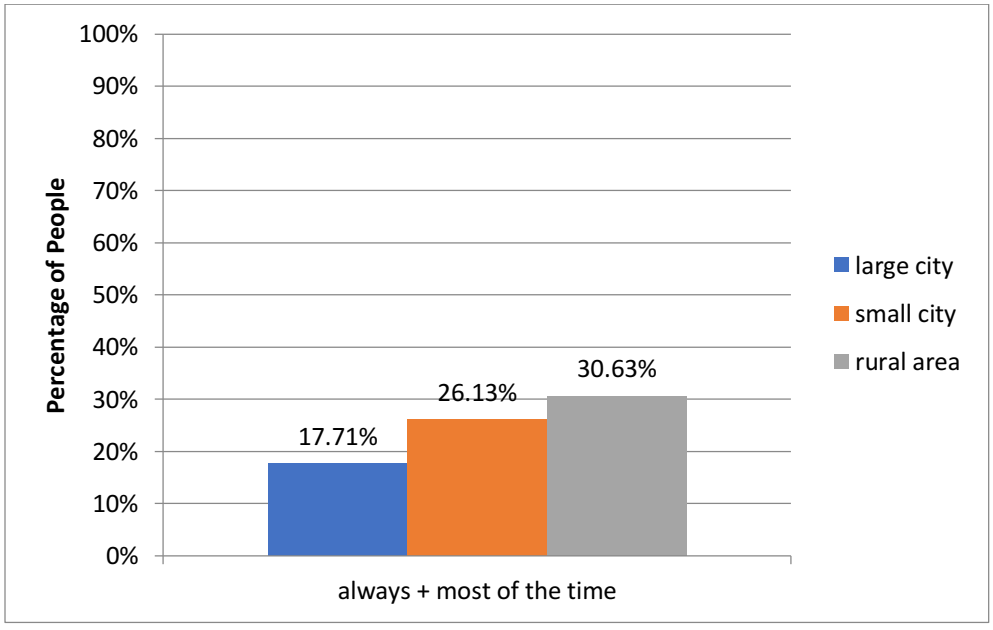

Chart 5 Worry or Panic Feeling VS Current Place of Residence

Q13-Q7 Do you feel fearful or hopeless about the future?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	13(7,42%)	47 (21,17%)	22 (20%)	83(16,11%)
Most of the time	43(24,57%)	49 (22,07%)	33 (30%)	126(24,46%)
sometimes	72(41,14%)	71 (31,98%)	33 (30%)	177(34,36%)
Rarely	26(14,86%)	38 (17,11%)	15(13,64%)	80(15,53%)
Never	21 (12%)	17 (7,65%)	7 (6,36%)	45(8,74%)
Average	3.0	3.3	3.4	
Total (%)	175(33,98%)	222(43,1%)	111(21,35%)	515(100%)

Table 14 Fearful or Hopeless Feeling

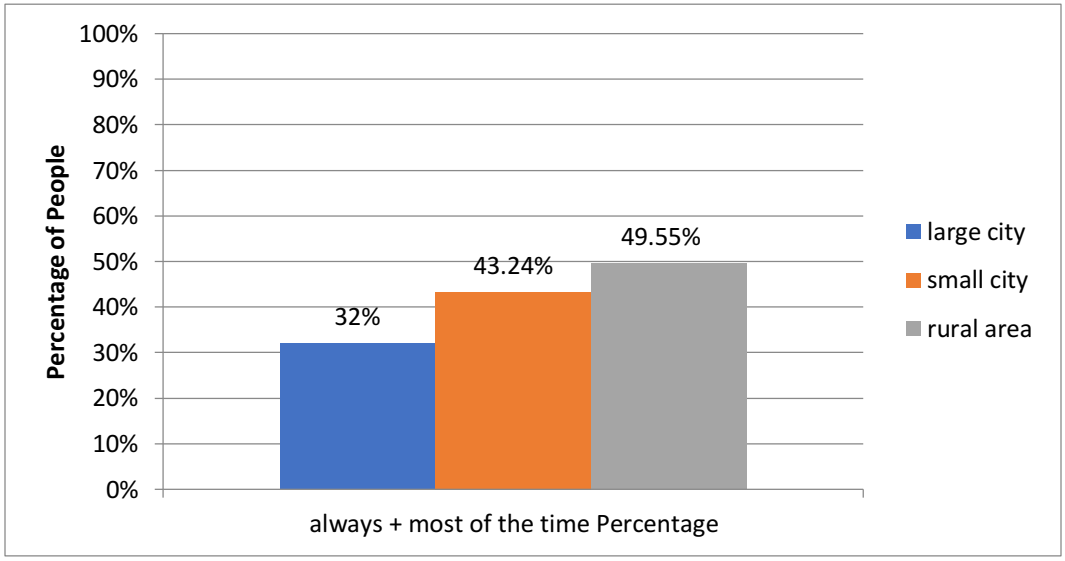

Chart 6 Fearful or Hopeless Feeling VS Current Place of Residence

Q14 Have you thought of ending your life?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	3(1,72%)	3(1,35%)	4 (3,63%)	10(1,94%)
Most of the time	2(1,13%)	4 (1,8%)	4 (3,63%)	10(1,94%)
Sometimes	19(10,80%)	21(9,5%)	4 (3,63%)	44(8,54%)
Rarely	12 (6,82%)	24(14,45%)	17(15,45%)	53(10,29%)
Never	138(78,31%)	169(76,47%)	82(74,54%)	393(76,3%)
Average	1.4	1.5	1.5	
Total (%)	175(33,78%)	222(42,9%)	111(21,35%)	515(100%)

Table 15 Ending Life Thoughts

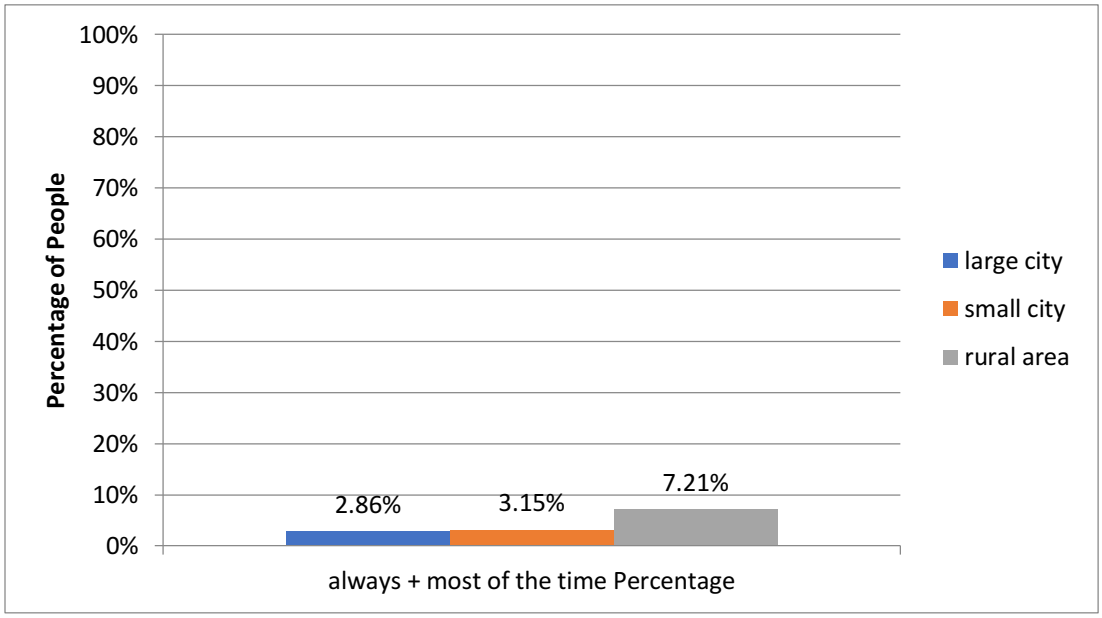

Chart 7 Ending Life Thoughts VS Current Place of Residency

Q15 Do you feel excited or interested in something?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	46(26,3%)	63(28,4%)	34(30,6%)	144(27,9%)
Most of the time	48(27,4%)	64(28,8%)	37(33,3%)	149(28,9%)
sometimes	62(35,4%)	78(35,1%)	33(29,7%)	175(33,9%)
Rarely	13(7,4%)	13(5,8%)	6(5,4%)	33(6,04%)
Never	6(3,4%)	3(1,35%)	-	9(1,74%)
Average	3.7	3.9	3.8	
Total (%)	175(33,9%)	222(43,01%)	111(21,5%)	515(100%)

Table 16 Excitement or Interest Feeling

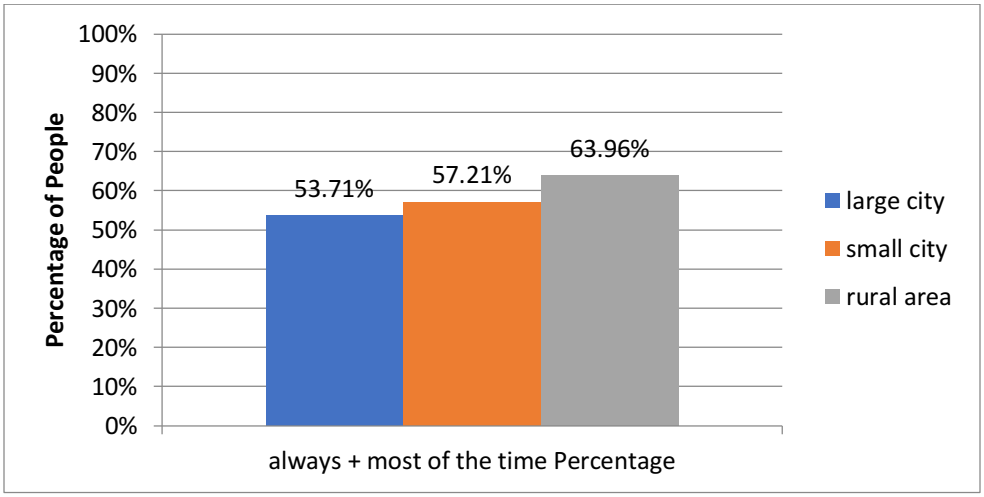

Chart 8 Excitement or Interest Feeling VS Current Place of Residency

Q16 Do you feel proud when someone compliments you on something you had done?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	84(48%)	104(46,8%)	56(50,4%)	246(47,7%)
Most of the time	46(26,3%)	61 (27,5%)	33(29,7%)	141(27,37%)
Sometimes	37(21,1%)	42 (18,9%)	18(16,2%)	97(18,83%)
Rarely	3 (1,7%)	5 (2,25%)	3 (2,7%)	12(2,33%)
Never	5 (2,8%)	9 (4%)	-	14(2,71%)
Average	4.1	4.1	4.3	
Total (%)	175(33,9%)	222(43,01%)	111(21,5%)	515(100%)

Table 17 Proud Feeling

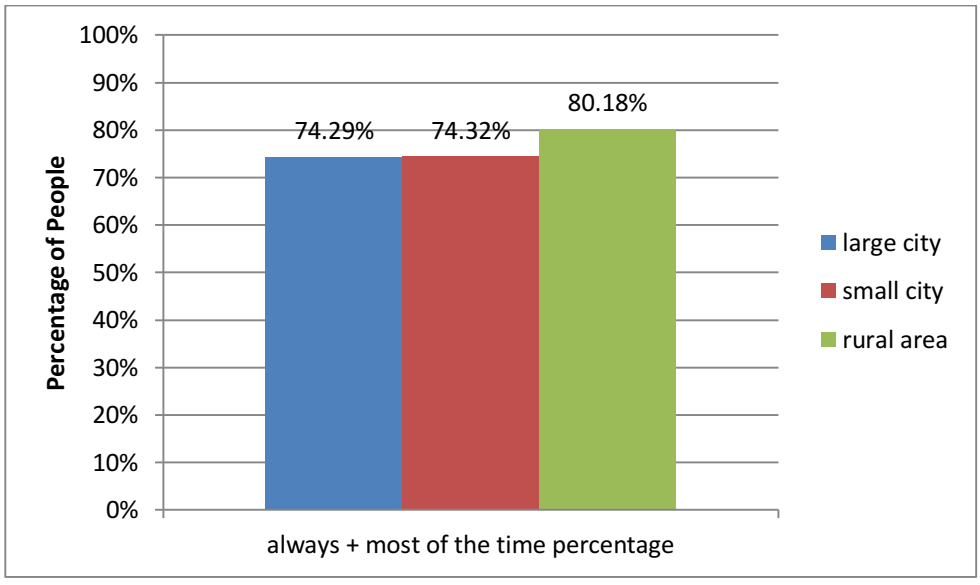

Chart 9 Proud Feeling VS Current Place of Residency

Q17 Are you pleased about having accomplished something?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	85(48,6%)	98(44,1%)	45(40,5%)	231(44,85%)
Most of the time	52(29,7%)	68(30,6%)	37(33,3%)	158(30,67%)
Sometimes	28 (16%)	40 (18%)	24(21,6%)	92(17,86%)
Rarely	5 (2,85%)	9 (4%)	3 (2,7%)	17(3,3%)
Never	5 (2,85%)	7 (3,1%)	2 (1,8%)	14(2,71%)
Average	4.1	4.1	4.1	
Total (%)	175(33,9%)	222(43,01%)	111(21,5%)	515(100%)

Table 18 Accomplishment Feeling

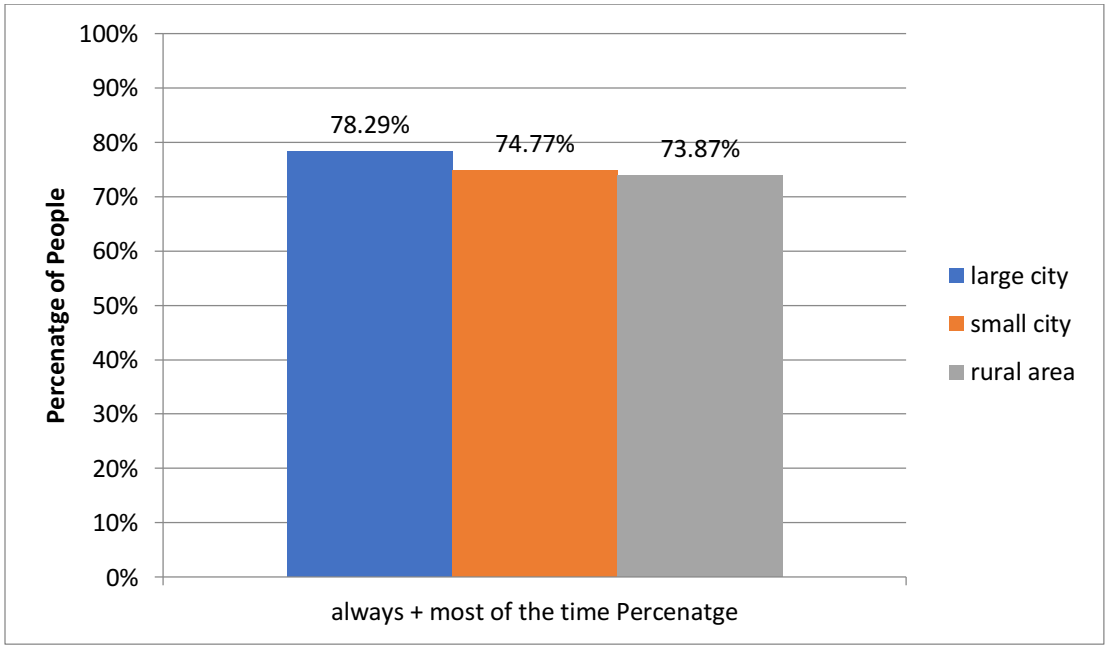

Chart 10 Accomplished Something VS Current Place of Residency

Q18 Do you feel lonely or remote from other people?	*Large city*	*Small city*	*Rural area*	*Total (%)*
Always	2(1.14%)	6(2,7%)	3 (2,7%)	11(2,13%)
Most of the time	24(13,7%)	23(10,3%)	21(18,9%)	68(13,2%)
Sometimes	59(33,7%)	78(35,1%)	36(32,4%)	175(33,9%)
Rarely	47(26,8%)	63(28,4%)	26(23,4%)	137(26,6%)
Never	42 (24%)	52(23,4%)	25(22,5%)	120(23,3%)
Average	2.4	2.4	2.6	
Total (%)	175(33,9%)	222(43,01%)	111(21,5%)	515(100%)

Table 19 Loneliness or Remote Feeling

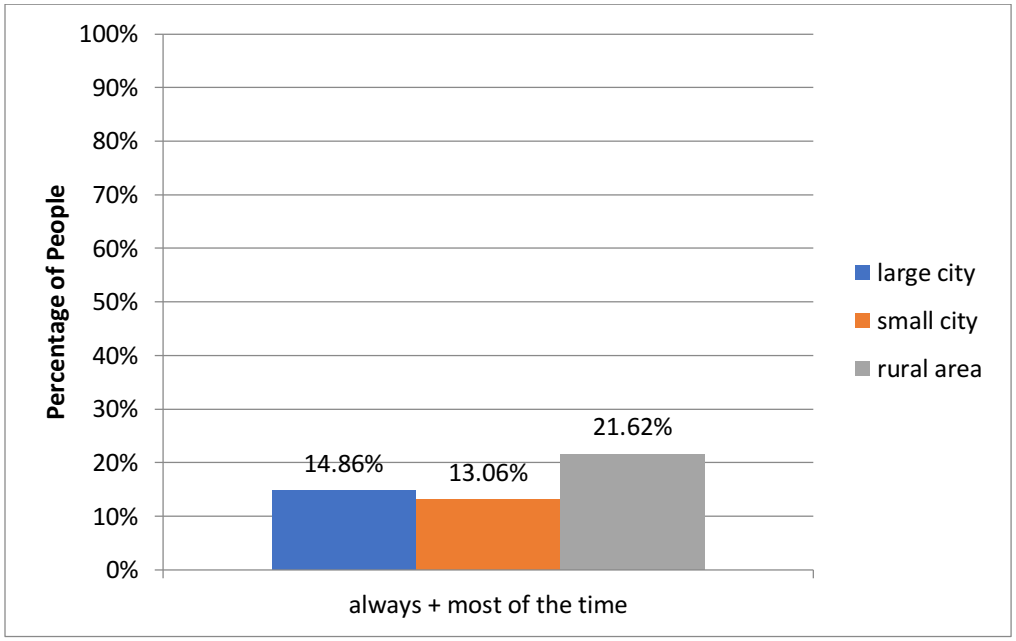

Chart 11 Loneliness or Remote Feeling VS Current Place of Residency

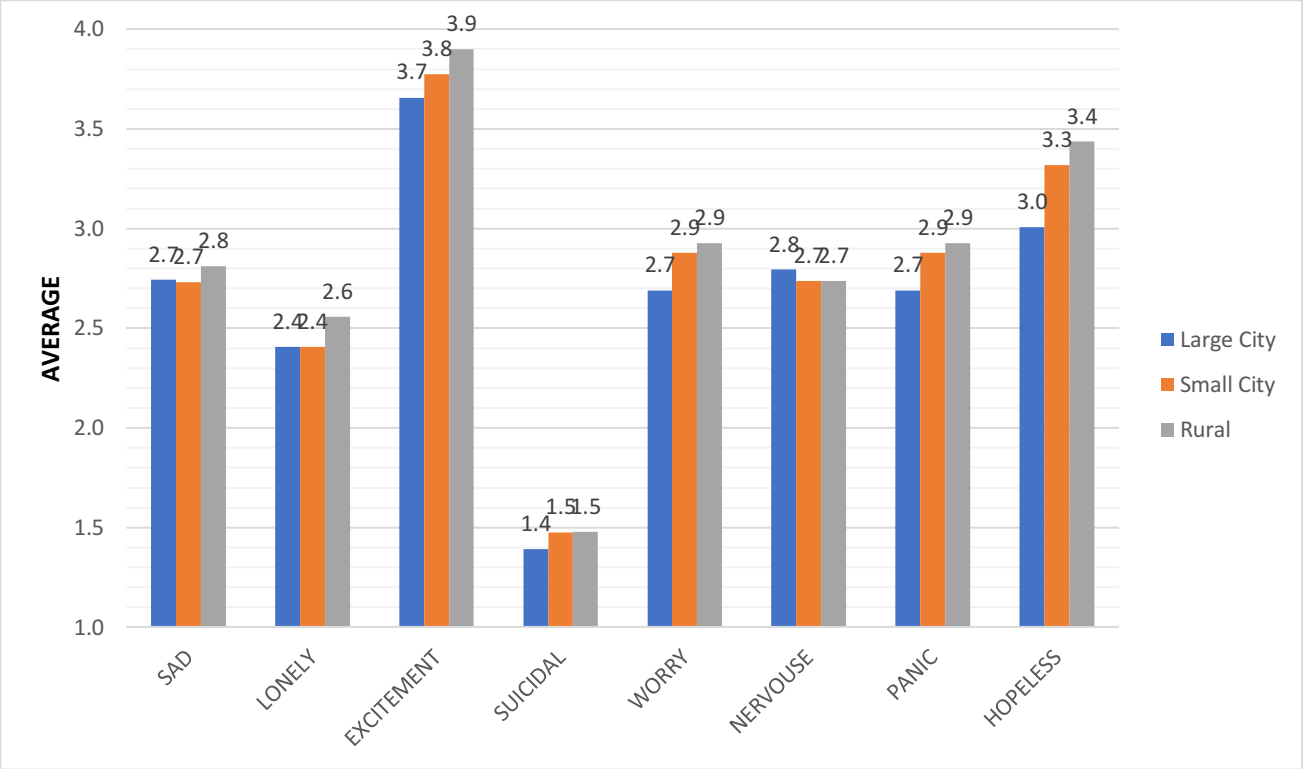

Chart 12 Averages for each factor

Analysis of Mental Health and Feeling in Response to Current Place of Residency

In Response to the question "Do you feel sad or depressed?" the total number of answers was 515, with 7 participants not giving an answer. The table shows that people in large cities are the most to always feel sad or depressed with 4% compared to 2,25% for those living in small cities and 3,6% for those living in rural areas. In contrast, people living in small cities are the most to feel sad or depressed most of the time with 15,77% compared to 13,71% to those living in large cities and 12,61% for those living in rural areas. Thus, the results show that people in a large city are the most to always feel sad or depressed while people living in a small city feel sad or depressed most of the time.

The question “Do you feel shakiness and nervousness inside?” has been cross tabulated with current place of residence. The total number of answers in 515, but 7 participants did not answer the question. The table shows that people living in rural areas were the most to always feel shakiness and nervousness inside with 6,3% compared to 5,4% for small cities and 3,42% for large cities. In addition, people living in a large city felt shakiness and nervousness inside most of the time with 17,14% compared to 11,71% for a small city and 12,61% for a rural area. Thus, people living in a rural area always feel shakiness and nervousness inside, while people living in a large city feel shakiness and nervousness inside most of the time.

The question “Do you worry too much or panic too much?” has been cross tabulated with “current place of residency”. The total number of responses is 515, with 7 blank responses. Data shows that people living in a rural area were the most to always worry or panic too much with 6,36% compared to 4,5% for those living in a small city and 5,75% in a large city. Furthermore, data shows that people living in a rural area were the most to worry or panic too much most of the time with 24,54%% compared to those living in a small city with 21,62% and 12,06% for those living in a large city. Thus, results show that people living in rural area were the most ones who always and most of the time worry or panic too much.

The question “Do you feel fearful or hopeless about the future?” has been cross tabulated with current place of residency. The total number of responses is 515, with 7 blank responses. Data shows that people living in small city were the most ones who always feel fearful or hopeless about the future with 21,17% comparing to 7,42% for those living in large city and 20% for those living in rural area. In addition, people living in rural area were the ones who feel fearful or hopeless about the future most of the time with 30% comparing to those who live in large city with 24,5% and 22% for those living in small city. Thus, results show that people living in small

city were the most ones who always feel fearful or hopeless about the future, and people living in rural area were the ones who feel fearful or hopeless about the future most of the time.

The question “Have you thought of ending your life?” have been cross tabulated by current place of residence. The total number of answers is 515, with 7 blank responses. Data shows that the percentage of people who always thought of ending their life were the ones living in rural area with 3,63% comparing to 1,72% for those living in large city and 1,35% for those living in small city. It seems that people living in rural area thought of ending their life most of the time with 3,63% comparing to 1,1% for those living in large city and 1,8% for those living in small city. Thus, results show that people living in rural area were the ones who always and most of the time thinking about ending their life.

In order to answer the research question: How does urbanicity affect the psychological well-being of Lebanese citizens, we need to analyze the answers to the questions 15/16/17/18.

The question “Do you feel excited or interested in something?” has been cross tabulated with current place of residency from another question. The total number of answers is 515 responses, but 7 participants didn’t answer the question. The table shows that people living in rural area are the most ones who always feel excited or interested in something with 30,6% comparing to 26,3% for large city and 28,4% for small city. In addition, people living in rural area were also the most ones who feel excited or interested in something most of the time with 33,3% comparing to 28,8% for those living in small city and 27,4% for those living in large city. Thus, results show that people living in rural area were the ones who always and most of the time feel excited or interested in something.

The question “Do you feel proud when someone compliments you on something you had done” has been cross tabulated with current place of residency. The total responses are 515, while 7 responses are blank. Data shows that people living in rural area are the most ones who always feel proud when someone compliments them with 50,4% comparing to 48% for those living in large city and 46,8% for those living in small city. In addition, people living in rural area felt proud most of the time with 29,7% comparing to 26,3% for those living in large city and 27,5% for those living in small city. Thus, results show that people living in rural area were the most ones who always and most of the time feel proud when someone compliments them.

The question in our example, “Are you pleased about having accomplished something? has been cross tabulated, with current place of residence from another question. In the table, the total compared responses are 515 but 7 participants did not answer the question. The data shows that people who are always feel pleased about having accomplished something are the ones who live in a large city with (48,6%) comparing to the ones living in small city with (44,1%) and (40,5%) for those living in rural area. In addition, people living in rural area were the most ones who feel pleased about accomplishing something most of the time with 33,3% comparing to 30,6% for those living in small city and 29,7% for those living in large city. Thus, results show that people living in large city always feel pleased about accomplishing something, while people living in rural area feel pleased most of the time.

The question in our example, “Do you feel lonely or remote from other people? has been cross tabulated, with current place of residence from another question. In the table, the total compared responses are 515 but 7 participants did not answer the question. People living in Rural areas and small cities always feel lonely or remote from other people with 2.7% comparing to 1.14% for those living in Large cities. In addition, people living in rural areas feel lonely most of the time

with (18,9%) compared to 10,3% for those living in small city and 13,7% for those living in large cities. Thus, results show that people living in Urban areas tend to feel loneliness and remoteness from people always and most of the time in a larger percentage (21,62%) more than people living in Large cities (15,43%).

Finally, Chart 12 shows the average answers compared to their respective living environment. It is noticed that people feel most sad, lonely, and excited in Rural areas. Rural area dwellers seem to feel more worried, panic, and hopelessness as well. Large city residents on the other hand seem to have less suicidal thoughts but experience more nervous feelings than small city and Rural area residents. It is clear that Lebanese Large city residents have better mental health and psychological well-being than Lebanese residing in small cities or rural areas.

4.3 Urbanicity in relation with Gender Factor

Gender	*Male*			
	Birthplace			
Current residency	*Large city*	*Small city*	Rural *area*	*Total (%)*
Large city	35 (67,3%)	23(24,4%)	13(26,5%)	71(36,4%)
Rural area	8 (15,4%)	6(6,4%)	31(63,2%)	45(23,07%)
Small City	9 (17,3%)	65(69,2%)	5(10,2%)	79(40,5%)
Total (%)	52(26,67%)	94(48,2)	49(25,12%)	195(100%)

Table 20 Urbanicity VS Male

By performing cross tabulation technique, Table 20 shows that 67,3% of males who were born in a large city stayed there. In addition, 69,2% of those who were born in small city remained and 24,4% of them moved to large city. 63,2% of those who were born in rural area stayed there also while 26,5% moved to large city.

Gender	*Female*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total*
Large city	67(71,3%)	21(15,5%)	11(14,9%)	99(32,6%)
Rural area	6(6,4%)	9(6,8%)	49(66,1%)	64(21,12%)
Small city	21(22,3%)	105(77,7%)	14(19%)	140(46,2%)
Total	94(31,02%)	135(44,55%)	74(24,42%)	303(100%)

Table 21 Urbanicity VS Female

Using cross tabulation technique, Table 21 shows that the majority of females who were born in large city with 71,3% stayed there. In addition, the majority of females 77,7% who were born in small city remained there while 15,5% moved to large city. 66,1% of females who were born in rural area stayed there while 14,9% moved to large city.

Thus, results show that the percentages of male who moved from small city or rural area to large city is higher than the percentage of females who moved from small city or rural area to a large city.

4.4 Urbanicity in relation with number of children

Number of children (0)				
	Birthplace			
	Large city	*Small city*	*Rural area*	*Total (%)*
Large city	76 (68,5%)	32(20,5%)	16(21,3%)	124(36,25%)
Rural area	12 (10,8%)	11(7 %)	52(69,3%)	75(21,92%)
Small city	23 (20,7%)	113(72,5%)	7(9,3%)	143(41,81%)
Total (%)	111(32,4%)	156(45,6%)	75(21,9%)	342(100%)

Table 22 Urbanicity vs Number of Children (0)

The data has been cross tabulated, table 22 shows that the majority of participants who do not have children remained in their place of origin. Only 20,5% of those who were born in small city and do not have kids moved to large city, and 21,3% of those who were born in rural area and do not have kids moved to large city.

Number of children (1)				
	Birthplace			
Row Labels	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	7(70%)	4 (30,8%)	4 (30,8%)	15(41,67%)
Rural area	-	-	4(30,8%)	4(11,11%)
Small city	3(30%)	9 (69,23%)	5(38,5%)	17(47,2%)
Total (%)	10(27,7%)	13(36,1)	13(36,1%)	36(100%)

Table 23 Urbanicity vs Number of Children (1)

Using cross tabulation technique, table 23 shows that only 30,8% of the participants who have one child moved from small city or rural area to large city. The majority of the participants who have one child (70%) stayed in large city.

Number of children (2)				
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	13(76,5%)	5(15,1%)	2(13,3%)	20(30,76%)
Rural area	1(5,9%)	3(9,1%)	9(60%)	13(20%)
Small city	3(17,7%)	25(75,7%)	3(20%)	31(47,69%)
Blank	-	-	1(6,67%)	1(1,53%)
Total (%)	17(47,2%)	33(50,77%)	15(23,07%)	65(100%)

Table 24 Urbanicity VS Number of Children (2)

The data has been cross tabulated, the table 24 shows that only 15,1% of those who were born in small city and have two children moved to a large city, while 13,3% of those who were born in rural area and have two children moved to large city. In addition, 76,5% of the participants who were born in large city and have two children remained there.

Number of children (3-4)				
	Birthplace			
Row Labels	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	2(100%)	1(17%)	-	3(23,07%)
Rural area	-	-	4(80%)	4(30,76%)
Small city	-	5(83%)	1(20%)	6(46,15%)
Total (%)	2(15,38%)	6(46,15%)	5(38,46%)	13(100%)

Table 25 Urbanicity VS Number of Children (3-4)

Table 25 shows that people with three children and were born in large city or a rural area remained there. In addition, only 17% of the participants who were born in small city and have three children moved to large city while the others remained there.

Number of children (> 4)			
	Birthplace		
Current residency	*Large city*	*Rural area*	*Total (%)*
Large city	1(100%)	-	1(50%)
Rural area	-	1(100%)	1(50%)
Total (%)	1(50%)	1(50%)	2(100%)

Table 26 Urbanicity VS Number of Children (>4)

Table 26 shows that only participant who were born in large city with more than 4 children remained there. In addition, one participant who was born in rural area with more than 4 children also remained there.

When comparing all the percentages with altogether, we can see that people with one child are the most ones who move from small city or rural area to large city.

4.5 Urbanicity In Relation to Level of Education

Level of education	*Less than high school diploma*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	2 (66,7%)	1 (20%)	1 (100%)	4(44,5%)
Rural area	-	1 (20%)	-	1(11%)
Small city	1 (33,3%)	3 (60%)	-	4(44,5%)
Total (%)	3(33,4%)	5(55,6%)	1(11%)	9(100%)

Table 27 Urbanicity VS Less Than High School Diploma

Table 27 shows that 20% of people with less than high school diploma moved from a small city to large one, while all the people with less than high school diploma moved from a rural area to large city.

Level of education	*High school graduate*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	6 (46%)	2 (7,4%)	-	8(17,1%)
Rural area	4 (30%)	3 (11,1%)	7 (100%)	14(29,7%)
Small city	3 (23%)	22 (81,5%)	-	25(53,2%)
Total (%)	13(27,7%)	27(57,4%)	7(14,9%)	47(100%)

Table 28 Urbanicity VS High School Graduate

Table 28 shows that 7,4% of people from small city with high school graduate moved to large city, while people who were born in rural area and are high school graduate remained there.

Table 29 Urbanicity VS bachelor's degree

Level of education	*Bachelor's degree*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	43(68%)	19(18,4%)	7(15,9%)	69(32,9%)
Rural area	4(6%)	7(6,8%)	33(75%)	44(21%)
Small city	16(25%)	77(74,7%)	4(9,1%)	97(46,1%)
Total (%)	63(30%)	103(49%)	44(21%)	210(100%)

Table 29 shows that 18,4% of people who were born in small city and have a bachelor's degree moved to large city, while 15,9% of people who were born in rural area moved to large city.

Level of education	*Master's degree*

	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	49 (75,4%)	21(24,1%)	13 (20,3%)	83(38,4%)
Rural area	6 (9,2%)	3(3,4%)	38 (59,4%)	47(21,75%)
Small city	10 (15,4%)	63(72,4%)	13(20,3%)	86(39,8%)
Total (%)	65(30,1%)	87(40,3%)	64(29,6%)	216(100%)

Table 30 Urbanicity VS Master's degree

Table 30 shows that 24,1% of people who were born in small city and have a master's degree moved to large city, while 20,3% of people who were born in rural area and have a master's degree moved to large city.

Table 31 shows that 16,7% of people who were born in small city and have a PhD degree moved to large city, while 50% of people who were born in a rural area and have a PhD degree moved to a large city.

When comparing all the percentages, it shows that people with a master's degree are the most ones who move from small city or rural area to large city.

Table 31 Urbanicity VS PhD degree

Level of education	*PHD degree*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total*
Large city	5 (83,3%)	1 (16,7%)	3 (50%)	9(50%)
Rural area	-	1 (16,7%)	2 (33,3%)	3(16,7%)
Small city	1 (16,7%)	4 (66,7%)	1 (16,7%)	6(33,3%)
Total (%)	6(33,3%)	6(33,3%)	6(33,3%)	18(100%)

4.6 Urbanicity in Relation to monthly income factor

Monthly income	*Unemployed*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	21(52,5%)	11(18%)	4(13,8%)	36(27,7%)
Rural area	7(17,5%)	7(11,5%)	20(68,9%)	34(26,2%)

Small city	12(30%)	43(70,5%)	5(17,2%)	60(46,1%)
Total (%)	40(30,7%)	61(47%)	29(22,3%)	130(100%)

Table 32 Urbanicity VS Unemployed

Table 32 shows that 18% of people born in small city and are unemployed moved to large city, while 13,8% of those who were born in rural area and are unemployed moved to large city.

Monthly income	*Below 1.000.000 L.L*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	9(69,2%)	-	2(16,7%)	11(25%)
Rural area	-	1(5,2%)	8(66,7%)	9(20,5%)
Small city	4(30,8%)	18(94,8%)	2(16,7%)	24(54,5%)
Total (%)	13(29,5%)	19(43,2%)	12(27,3%)	44(100%)

Table 33 Urbanicity VS Income Below 1.000.000 L.L

Table 33 shows that only 16,7% of the people born in rural area and have a monthly income below 1.000.000 L.L moved to large city.

Monthly income	*Between 1.000.000 L.L-1.500.000 L.L*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total (%)*
Large city	8 (61,5%)	5 (16,7%)	4 (23,5%)	17(38,3%)
Rural area	2 (15,4%)	2 (6,7%)	11 (64,7%)	15(25%)
Small city	3 (23,1%)	23 (76.7%)	2 (11,7%)	28(46,7%)
Total (%)	13(21,7%)	30(50%)	17(38,3%)	60(100%)

Table 34 Urbanicity VS Income Between 1.000.000 L.L-1.500.000 L.L

Table 34 shows that 16,7% of people born in small city and have a monthly income between 1.000.000 and 1.500.000 L.L moved to large city, while 23,5% of people born in rural area and have a monthly income between 1.000.000-1.500.000 L.L moved to large city.

Monthly income	*Between 1.500.000 L.L- 2.000.000 L.L*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total(%)*
Large city	8(53,3%)	11(31,4%)	2(13,3%)	21(32,3%)
Rural area	4(26,7%)	-	12(80%)	16(24,6%)
Small city	3(20%)	24(68,6%)	1(6,7%)	28(43,1%)
Total(%)	15(23,1%)	35(53,8%)	15(23,1%)	65(100%)

Table 35 Urbanicity VS Salary Between 1.500.000 L.L- 2.000.000 L.L

Table 35 shows that 31,4% of people born in a small city and have a monthly income between 1.500.000 and 2.000.000 L.L moved to a large city, while 13,3% of people born in a rural area and have a monthly income between 1.500.000-2.000.000 L.L moved to a large city.

Monthly income	*More than 2.000.000 L.L*			
	Birthplace			
Current residency	*Large city*	*Small city*	*Rural area*	*Total(%)*
Large city	59 (85,5%)	17 (20,7%)	12 (24%)	88(43,8%)
Rural area	1 (1,4%)	5 (6,09%)	29 (58%)	35(17,4%)
Small city	9 (13,1%)	60 (73,1%)	9 (18%)	78(38,8%)
Total(%)	69(34,3%)	82(40,8%)	50(24,9%)	201(100%)

Table 36 Urbanicity VS More Than 2.000.000 L.L

Table 36 shows that 20,7% of people born in a small city and have a monthly income of more than 2.000.000 L.L moved to large city, while 24% of people born in rural area and have a monthly income of more than 2.000.000 L.L moved to a large city.

As a conclusion, when comparing the percentages with altogether we can see that people with a monthly income between 1.500.000L.L and 2.000.000 L.L. moved to large city from small city, while people born in rural area with a monthly income more than 2.000.000 L.L moved to large city.

Chapter 5: Conclusion

The purpose of this study was to assess the association between urbanicity and urbanization with mental and psychological wellbeing of the Lebanese people. After searching for many studies in the literature review, we found many relevant studies that showed how large city affected the mental health and psychological well-being of the people negatively.

After conducting a survey where 515 people participated, we were able to generate data which was analyzed using descriptive analysis. Concerning the mental health of Lebanese citizens, data showed that people living in rural area were the most ones who have a negative mental health. Results also showed that people living in rural area were the most ones who always feel shakiness and nervousness inside, worry or panic too much, and thought of ending their lives. In

addition, people living in rural area worry or panic too much; feel fearful or hopeless about the future and thought of ending their lives most of the time. Some studies mentioned in the literature review reported that suicide attempts and affective disorders are more spread in urban areas in which social support systems are poorer. The reasons are related to economic regression and unemployment which may reveal suicide tendency (Hirschfeld et al, 2000).

Data also showed that people living in large city were the most ones who always feel sad or depressed and felt shakiness and nervousness inside most of the time. This result is in relation with many studies that were mentioned in the literature review and had demonstrated that urban life has a negative impact on people mental health (Hirschfeld et al, 2000).

Thus, Lebanese people living in rural areas have a negative mental health compared to people living in small and large cities.

Furthermore, when comparing the results of the questions related to the psychological wellbeing of the Lebanese people we can see that people living in rural area were the most ones who always feel excited or interested in something, and feel proud when someone compliments them. In addition, people living in rural area feel excited or interested in something and feel proud when someone compliments them and feel pleased when accomplishing something most of the time. These results shows that Lebanese people living in rural area have a good psychological well-being which confirms with many studies discussed in the literature review and showed that that natural environments in rural areas lead to psychological stability such as a calm mood. In addition, physiological indices such as heart rate and blood pressure tend to normalize when people look at natural scenic views in rural areas (Laumann, Gärling & Stormark, 2003).

In addition, data also showed people living in large city always feel lonely or remote from other people which confirm with many studies discussed in the literature review and demonstrated that in large city there are many stressors that increase the psychological stress level which decrease the psychological wellbeing of the people (Elsamahy & Abd el Fattah, 2018).

Besides, we were able to analyze the gender, the income, the number of children and the level of education of the participants in relation with urbanicity.

Data showed that males move from small city or rural area to large city more than females. In addition, Lebanese people with one child tend to move to large city more than people with two, three, four or more than 4 children. Data also showed that people with a master degree are the most ones who move from small city or rural area to large city. Also, data showed that people with a monthly income between 1.500.000 and 2.000.000 L.L are the most ones who move from small city to large city and people with a monthly income of more than 2.000.000 L.L are the most ones who move from rural area to large city.

As a conclusion, it seems that Lebanese people who live in rural areas have a negative mental health while having a positive psychological wellbeing at the same time. Further studies should be done to see the factors that may have created a negative mental health and a positive psychological well-being of the Lebanese people.

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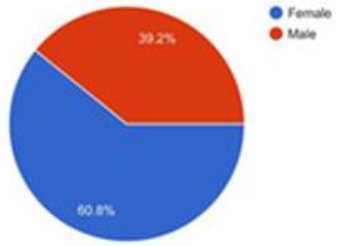
Appendix

Appendix A: Graphs

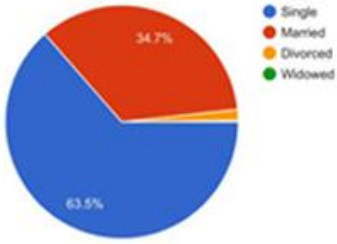
1- What is your gender?

523 responses



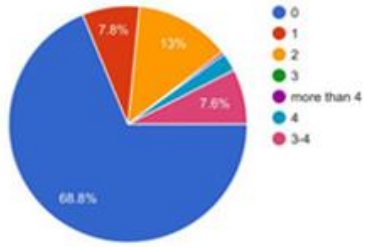
2- Which of the following best describes your current relationship status?

521 responses



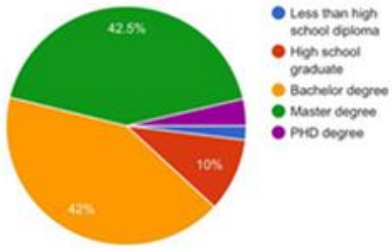
3- What is your number of children?

516 responses



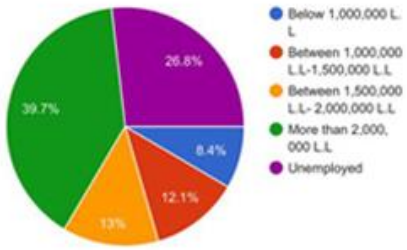
4- What is your level of education?

522 responses



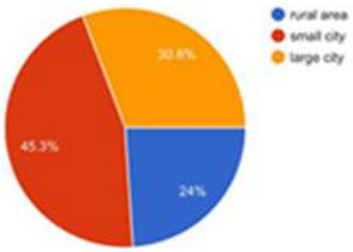
5- What is your average monthly income?

522 responses



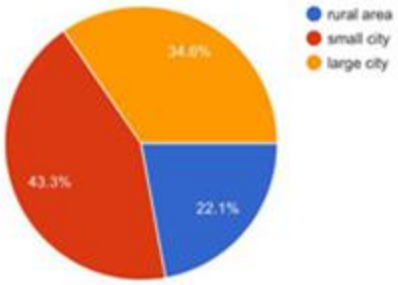
6- Where were you born?

517 responses



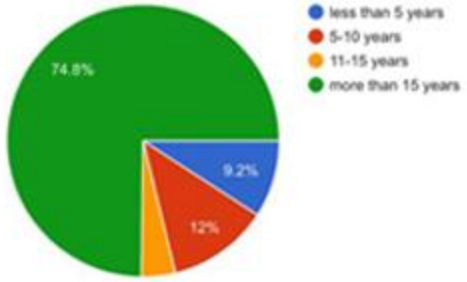
7- What type of community do you currently live in?

520 responses



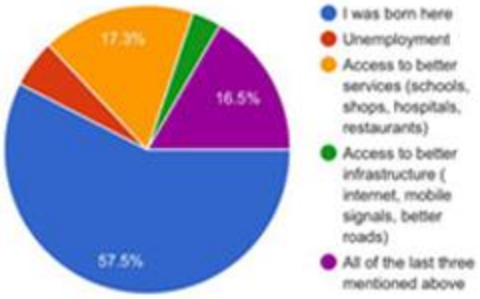
8- How long have you been living there?

524 responses



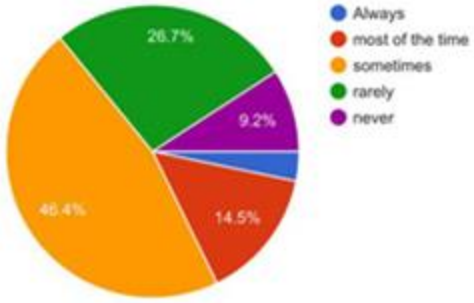
9- What were the reasons for moving

485 responses



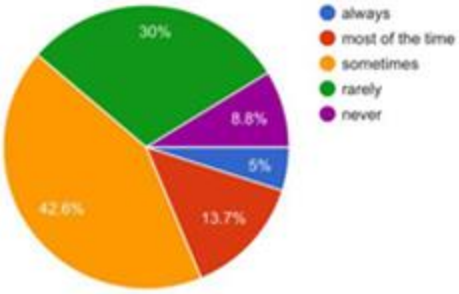
10- Do you feel sad or depressed?

524 responses



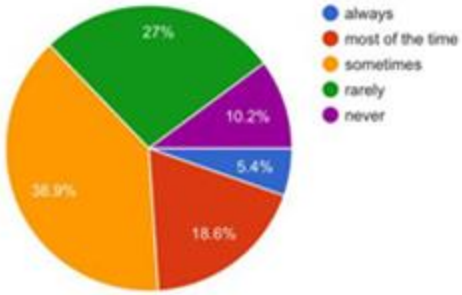
11- Do you feel shakiness and nervousness inside?

524 responses



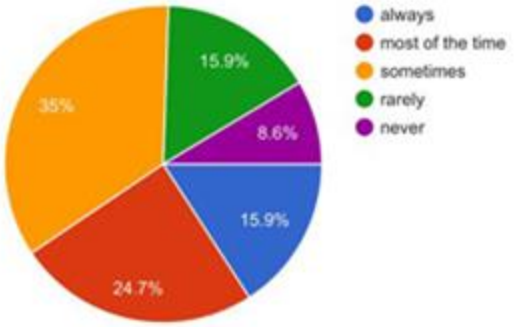
12- Do you worry too much or panic too much?

522 responses



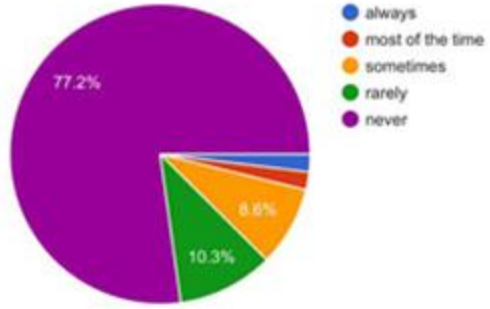
13- Do you feel fearful or hopeless about the future?

523 responses



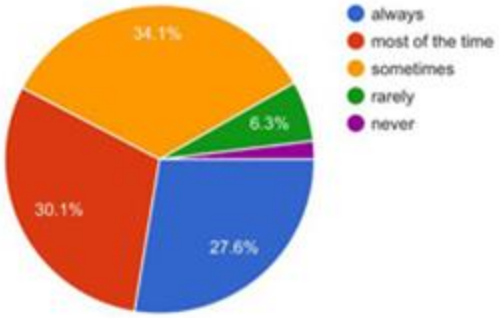
14- Have you thought of ending your life?

522 responses



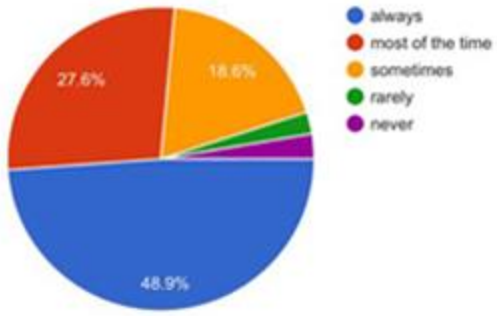
15- Do you feel excited or interested in something?

522 responses



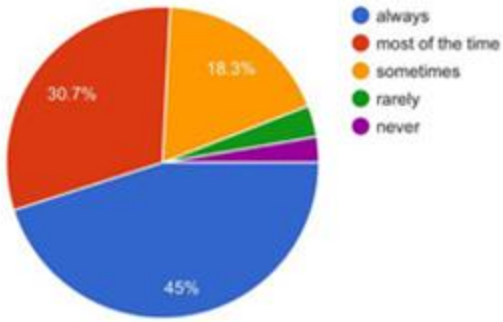
16-Do you feel proud when someone compliments you on something you had done?

522 responses



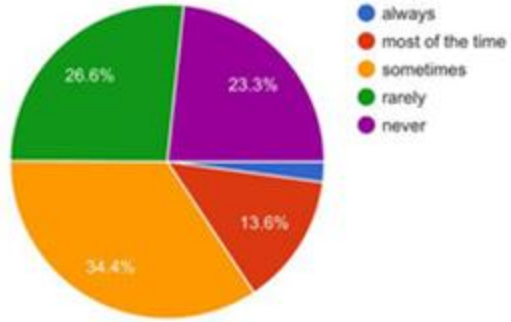
17-Are you pleased about having accomplished something?

524 responses



18- Do you feel lonely or remote from other people?

523 responses



APPENDIX B: LIST OF TABLES

Appendix C: List of Charts