IMPACT OF LONELINESS AND LOCUS OF CONTROL ON DEPRESSION AMONG THE ELDERLY IN PUNJAB, PAKISTAN: THE MODERATING ROLE OF RELIGOSITY

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Abstrak

Kemurungan adalah isu psikiatri yang terkenal di kalangan orang tua di Pakistan. Dalam hal ini, kesunyian seolah-olah menjadi sumber kritikal untuk mewujudkan kemurungan pada orang tua Punjab, Pakistan. Walau bagaimanapun, disebabkan banyak faktor demografi yang mengehadkan lokus kawalan mereka dan masalah kesepian, keberkesanan keagamaan mempunyai alat untuk mengatasi kemurungan. Oleh itu, kajian ini bertujuan untuk menganggarkan kesan kesepian dan locus kawalan terhadap kemurungan geriatrik; peranan moderat keagamaan orang tua Punjab, Pakistan. Ke arah ini, data primer telah dikumpulkan dari 384 responden yang dipilih melalui persampelan rawak berstrata. Soal soal selidik yang ditutup telah digunakan untuk pengumpulan data dan data dianalisis menggunakan regresi hierarki, ujian T dan Analisis varians. Penemuan kajian menunjukkan bahawa kesunyian didapati signifikan dalam menjelaskan kemurungan geriatrik. Menariknya, lokus kawalan yang diukur oleh lokus kawalan keseluruhan, lokus kawalan dalaman, lokus kawalan luar dan lokus kawalan lain yang berkuasa juga didapati mempunyai hubungan yang signifikan dengan kemurungan geriatrik. Tambahan pula, keagamaan sebagai moderator juga didapati penting dalam menjelaskan kemurungan geriatrik. Kajian itu menyimpulkan bahawa usaha untuk mengatasi kemurungan geriatrik di Punjab Pakistan tidak seharusnya terfokus hanya pada kesepian dan lokus kawalan kepada mereka. Ia mesti datang serentak dengan kesan kesederhanaan yang sederhana. Ini boleh dilakukan melalui keagamaan seperti penyertaan dalam perhimpunan agama dan mengurangkan halangan sosio-budaya yang menghalang mereka daripada merealisasikan potensi penuh keagamaan mereka.

Kata kunci: Kesepian, Locus kawalan, Kemurungan Geriatri, Usia Lama dan Kesejahteraan.

Abstract

Depression is a well-known psychiatric issue among the elderly in Pakistan. In this regard, the loneliness seems a critical source to create depression on the older people of Punjab, Pakistan. Nevertheless, owing to many demographic factors that limit their locus of control and troublesomeness of loneliness, the effectiveness of religiosity has the tool to overcome depression. The study therefore, aims to estimate the impact of loneliness and locus of control on geriatric depression; the moderating role of religiosity of elderly people of Punjab, Pakistan. Towards this end, primary data has been gathered from 384 respondents that were selected through a stratified random sampling. Close ended questionnaires were employed for data collection and data were analyzed using hierarchal regression, T-test and Analysis of variance. The findings of the study show that loneliness is found to be significant in explaining geriatric depression. Interestingly, locus of control which is measured by locus of control total, internal locus of control, external locus of control and powerful others locus of control is also found to have a significant relationship with geriatric depression. Furthermore, the religiosity as a moderator is also found to be significant in explaining geriatric depression. The study concludes that the effort to overcome geriatric depression in Punjab Pakistan should not be focused just on loneliness and locus of control to them. It must come simultaneously with significant moderating impact of religiosity. This can be done through religiosity such as more participation in religious gatherings and reducing the socio-cultural barriers that hinder them from realizing their full potential of religiosity.

Keywords: Loneliness, Locus of Control, Geriatric Depression, Old Age and Well-Being.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The issue of depression is currently being studied in societies, especially among older people. The necessity of maintaining health among older people is imperative to guarantee performance and good quality of life that entails long term benefits to them as well as for the society. People encounter many mental health problems in their earlier or later life and depression is one of them. According to many previous researches geriatric depression is one of the major factors that might be fatal for older people in their later life (Stek, Vinkers, Gussekloo, Beekman, Mast, & Westendorp, 2005; Zhang & Liu, 2007). Therefore, researchers emphasize that geriatric depression in old age is very common but this is not the case with every individual.

In the existing age, the people are more conscious of the factors that could influence depression in old age Baskin, Wampold, Quintana, and Enright (2010) stressed on the fact that prolonged loneliness could lead to depression in old age (Prinstien & La Greca, 2002). Longitudinal study on depression found that childhood depression could prompt depression in the later ages. There is an association among loneliness and depression from early childhood to late immaturity, which further stays tenacious in later life (Qualter, Brown, Munn, & Rotenberg, 2010).

1.1.1 Psychological Disorders in Pakistan

There is a lot of suffering in the world today that no one has the time to take care of themselves and even their elders. All is why their elders are suffering from varying type of mental health problems. One of the common problems experienced by the elders is

depression. According to World Health Organization (2010), the rate of depression is 30% which is rapidly high in older people in Pakistan.

In Pakistan, depression is a significant issue regarding its ratio is 10% and on the unipolar issue that is quite an alarming situation (World Health Organization, 2010). Naqvi (2007) conducted an epidemiological research on depression in Pakistan based on the diverse studies conducted in Pakistan that gives the predominance rate of depression in the country. If these investigations are to be taken as face validity, as indicated by this research each third Pakistani is required to experience depression and anxiety. This has certified consequences for the country's psychological dysfunction circumstances. The reason behind this alarming situation might be the lack of services that address severe psychological problems like depression (Naqvi, 2007). Despite several strivings to attend the depression problem however, the issue is still impinging that deteriorates mental functioning of the individuals. In the recent past, the increase in the services provided for the people to alleviate psychological problems in order to enhance mental functioning is still unsatisfactory. This disappointing condition is being pictured in Figure in 1.1.

The Figure 1.1 below gives a brief scenario of the mental health workforce of Pakistan per 100000 populations. The figure shows the number of psychiatrists is 0.2, psychologists are 0.2, psychiatric nurses are 0.08 and social workers are 0.4 per 100,000 populations. The highest figure is of social workers. The Figure 1.1 depicts the low percentages of professional involvement that needs room for improvement to enhance the services that might deal with the problems of depression (World Health Organization: Mental Health Atlas, 2010).

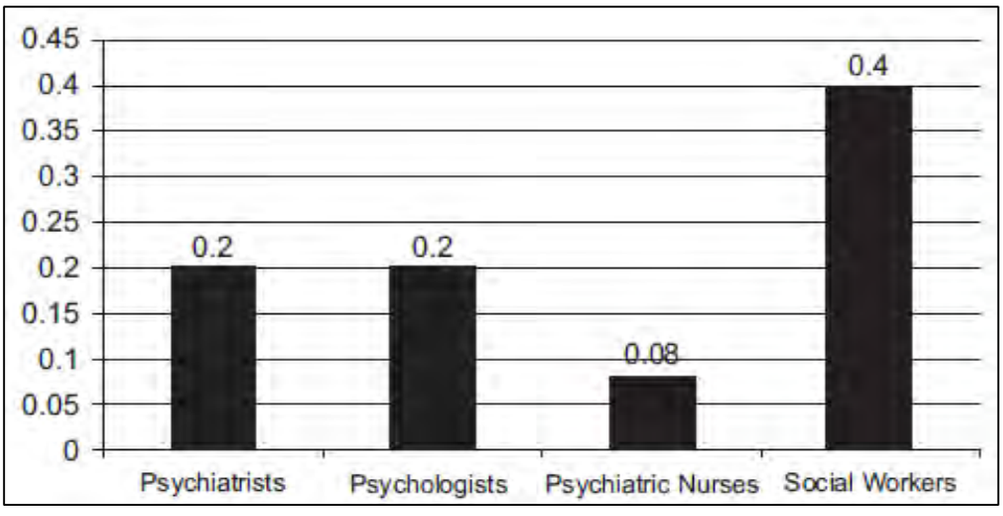

Figure 1.01. Mental Health Workforce of Pakistan/ 100,000 populations

Source: World Health Organization: Mental Health Atlas, 2010.

1.1.2 Prevalence of Depression among Older People in Pakistan

The most common psychiatric disorder among geriatrics is depression (Adamek & Slater, 2008). Several researches have led to explore depression in the elderly. Most of them found depression to be mainly under diagnosed and untreated disorder (Alexopoulos, 2005). Primary-care doctors hardly identify depression and, when they do, they do not provide a suitable cure (Bruce, McAvay, Raue, Brown, Meyers, & Weber, 2002).

There are many barriers towards adequate diagnosis of depression that include doctors' reluctance to discourse emotional problems, time constraints and medical co-morbidities, complicating diagnosis and competing for medical attention. Reluctance to take psychiatric treatment is because of apparent disgrace faced by the patients (Ayub, 2005). While late-life depression tends to be a recurring disorder, it may be masked by hypochondriasis or somatization. Furthermore, complex medication reinforces treatment compliance. It is not astonishing that older patients have high rates of treatment resistance and mortality with depressive disorder (Casey, 1994; Spear, Chawla, O'Reilly, & Rock, 2002).

On the account of consideration regarding depression, the 'Empty Nest Syndrome' is not just a Western phenomenon; the younger generation has allowed it to make its roads into

the eastern culture also. This syndrome has become one reason for depressive symptoms among elderly people in Pakistan. Furthermore, gradual breakdown of the centuries old extended family system, the emergence of the nuclear family system and individuality self-centeredness have eroded the channels of care for the elderly and has thus increased the probability of acquiring depressive symptoms among elderly population (Taqui, Itrat, Qidwai, & Qadri, 2007). Likewise, Mubeen, Henry, and Qureshi (2012) reported a high degree of depression among elderly in Pakistan thus it is drastically needed to be addressed in order to lessen its incidence among elderly males and females of Pakistani society.

Hence, in accordance with the above mentioned background, depression is a very serious issue which has been elevated day by day and continues to increase among elderly population. Consequently, the psychological adjustment of an elderly is a major challenge in its life. As the people grow older they lose their capacity to confront the troubles of life. They are increasingly inclined to depression because of their poor psychological health. It is subsequently, important to be psychologically healthy in later life (Mubeen, Henry, & Qureshi, 2012).

Old age is considered as the age of agitation and depression is considered as a common part of aging but that is not valid, well-intentioned mental health is necessary for the old people. When a person is psychologically healthy, it may cope with life more effectively. Healthy nation is a goal of every country. At the point when an individual is free of the sufferings it might carry on a healthy life.

Elaborative review of the limitations in existing empirical studies has driven to construct the need of the present research. The present study was, therefore, needed to accomplish the following limitations of the current literature. Depression in elderly has become a major area of mental health concern; nevertheless, geriatric depression has always been a neglected area among the literature that focuses upon mental health of elderly population

in Pakistan. Pakistani population and management policies need to understand the factors that are lying beneath the depressive symptoms among elderly population.

Current indigenous literature focusing depression has focused on social support system and other social factors like future security (Jamuna, 2003), family system (Bhamani, Karim, & Khan, 2013), companionship with the spouse (Taqui, Itrat, Qidwani, & Qadri, 2007) and other political and organizational determinants (Sabzwari & Azhar, 2010) that has made depression a growing and major psychiatric problem among elder population. However, there is scarcity of literary evidences that has incorporated locus of control and feelings of loneliness as prevailing factors among elderly population and could be associated with their level of depression. Moreover, despite a few studies focusing on the correlates of elderly depression like physical, economical and biological determinants (Pilania, Bairwa, Kumar, Khanna, & Kurana, 2013), a drastic need is being felt to study the elements that controls ones' actions and thoughts (*locus of control*) and leads towards the development of depressive symptoms.

Furthermore, while focusing upon the depression among elderly, requirement is also being felt to understand the subjective feelings of loneliness and isolations that builds and enhances depressive feelings among elderly people. A lot of variables related to the feelings of loneliness could be the source of developing depression among elderly population. These variables include self-centeredness, emergence of nuclear family system and individuality (Mubeen, Henry, & Quershi, 2012). Although indigenous data has tried to capture these loneliness variables as a cause of depression among elderly still, indigenous literature is lacking authentic and direct empirical evidences that could explain loneliness as a reason to develop depression at old age.

Likewise, role of religiosity as a moderator among the relationship of depression, loneliness and locus of control has viewed to be the vital association to understand geriatric

depression. Explanation of religious orientation while trying to understand the pathology or clinical perspective like depression has been either disregarded or treated as a major aspect of the pathology that must be redressed in the treatment. In any case, a deliberate audit of the religious substance of DSM-IV found that over 22% of all instances of mental illness incorporate religious depictions. Despite the impact of religious beliefs in understanding the level of depression among elderly, there is dearth of sufficient empirical data that could explain the role of depression among older people.

The existing research is, therefore, an effort to encourage investigation that associates religion with depressive symptoms, feelings of loneliness and locus of control. The present study is, hence, timely needed research work to comprehend the role of religiosity as influencing factor effecting depression among elderly population. Moreover, methodology implied to investigate the correlates of elderly depression is expected to be appropriate that could be claimed to enhance our understanding regarding factors effecting the depression among elderly population of Pakistan.

Keeping in view all such major facts of the investigation of the geriatric depression issues in older people of Pakistan, there is a great need to address the issue of depression among elderly which is increasing day by day.

1.2 Problem Statement

As aforementioned importance of depression among the elderly, the existence among Pakistan is a major global public health concern and this issue of depression also exists around the world (Bhamani, Karim, & Khan, 2013). Therefore, the nation is facing a most important scarcity in diagnosis and treatment of depression. So, it is difficult to encounter the health care strains of the increasing population.

In the light of the above perspective, old population above 50 years in Pakistan was projected to upsurge from 6.1% in 2009 to 14.9% by 2050. It highlights the insufficiency of the country's health system that amplifies the problem of illnesses of the older people. Henceforth, it is essential to recognize the greatness of the difficulties of the old to enlighten strategy that satisfies their psychological problems.

In 1998, the World Health Organization (WHO) portrayed depression as a noteworthy, overall reason for psychological instability. Mental and behavioral issues percentages are recorded as 12% of the worldwide trouble of sickness which influences give or take 450 million individuals. The major reason for this is that most nations allot less than 1% of their aggregate budget on mental health plan. The incidence of depression in old people is 20% - 23% reported by two earlier geriatric depression studies (Ganatra, Zafar, Qidwai, & Rozi, 2008; Itrat *et al.,* 2007). Thus, the depression is a foremost worldwide community mental health issue is communal in the senior citizens. Despite the fact that depression bares a big budget of all the health problems, in Pakistan, there is very little research capturing on geriatric depression among old people.

1.2.1 Prevalence of Depression in Various Regions of Pakistan

In Pakistan, among elderly population the most common psychiatric disorder is depression. It cannot be neglected (Bhamani, Karim, & Khan, 2013). The size of the issue is a lot more noteworthy than what is being accounted for and inquired about. Observational examinations have been directed in developed and developing nations to explore the pervasiveness of depression among elderly. In United States, the rate of commonness of depression is high as 40% where as in Pakistan it is as high as 66% among elderly (Javed & Mustafa, 2013). There has been very little or no studies in Pakistan that focus on elderly depression (Bhamani *et al.,* 2013). However, 34% was the prevalence of anxiety and depression in public and not among elderly (Mirza & Jenkins, 2004). A quantitative report

was directed in Karachi, Pakistan recognized 22.9% prevalence of depression ensued among the elderly (Ganatra, Zafar, Qidwai, & Rozi, 2008).

As mentioned earlier, depression is one of the highest prevailing mental disorders among Pakistani Population (Javed & Mustafa, 2013). The condition of depression among elderly in Pakistan is quite disappointing (Table 1.1). Figures point out the pervasiveness rates for depression in Pakistan produce nearly 8,437,406 out of the 157,935,000-populace figure. Predominance of depression in all regions of Pakistan includes Sindh: 16% urban, 12% rural, Punjab: 8% urban, 9% rural, Baluchistan: 40% urban, 2.5% rural, Khyber Pakhtun Khawa: 5% urban, 3% rural.

Table 1.1
Predominance of Depression in all regions of Pakistan

Provinces	**Urban**	**Rural**
Sindh	16%	12%
Punjab	8%	9%
Balochistan	40%	2.5%
Khyber Pakhtun Kha	5%	3%

Source: Keyes, (2004)

Correspondingly, Table 1.2 shows the percentages of prevalence of depression among elderly in big cities of Pakistan. As all these cities are the province's capitals. It is evident that Lahore had the greatest number of depressed individual 46.8 percent, when contrasted with Quetta 24.1 percent, Peshawar 20 percent, and Karachi 29 percent. As Punjab is the most populated and biggest province of Pakistan. Thus, the percentage of depression is very high. Furthermore, socio-economic problems, big city issues, and consequent relationship conflict problems might be the reason for high depression rate in Lahore city (Gadit & Khalid, 2002; Gadit & Mugford, 2007).

Table 1.2
Percentages of prevalence of Depression in Big cities of Pakistan

Capital Cities of Provinces	Percentages
Lahore	46.8%
Karachi	29%
Quetta	24.1%
Peshawar	20%

Source: Gadit and Khalid (2002, 2007)

The prevalence of depressive issue in Pakistan among elderly is at an extraordinary level, 44.4 percent, according to prominent therapist and president of Pakistan Association for Mental Health (PAMH).

As mentioned before, the most vulnerable people are elderly because they are at greater risk of having both mental and physical disorders. The priority to psychological issues in creating nations is not given and depression is under treated at this age. According to a research conducted in India on elderly depression, the results of the study indicated that depression is not the part of aging and it must be treated separately (Pilania, Bairwa, Kumar, Khanna, & Kurana, 2013).

According to United Nations (1995) appraisals, the elderly populace could increment up to four hundred percent in some Asian nations by 2025. These statistic patterns are foreseen for a few South East Asian nations and will result in the rise of interminable inability, new infection designs, changing societal mentalities and maturing incorporation strategies. There is a lack of reconnaissance statistic information on the elderly populace in Pakistan. All things considered in Pakistan, geriatrics isn't perceived as a different claim to fame bringing about the elderly being treated by general experts or other than geriatric authorities. Care given is regularly divided and there are not sufficient inpatient recovery places for patients with strokes, cracks and mental disorders and so on subsequently, elderly are high clients of using medical assets. As indicated by them, one out of five patients at the tertiary consideration healing center in Karachi, one of the cities of region

Sindh, Pakistan is elderly. It is evaluated that at any rate 6– 7 % of elderly visiting geriatric facilities at the Aga Khan University Hospital, Karachi are living alone with little help. This isolation and related non attentive clinical conditions in the country could become a source of depression among Pakistani elderly population (Sabzwari & Azhar, 2011).

The pattern and prevalence of depression among the elderly population in Pakistan might be accredited to children moving out of the extended family system or travelling to alternative republic for improved occupation prospects thus leaving their old parents alone. Over the most recent few years, lots of works and researches have been completed in developing countries on geriatrics issue. In Pakistan, depression in geriatric populace is still under treatment and under diagnosis, and maybe it isn't yet seen as a need in the general medical issues, in spite of extraordinary accentuation by both print and electronic media.

Considering reasons for the development of depression, it might be demonstrated that unfulfilled physical and psychological needs of the elderly by the family care suppliers and health care suppliers inclined this age towards depression. With the expansion in future, there is an exceptional burden on health care system. Health care delivery in Pakistan depends on feeble foundation and exceedingly neglected elderly populace. Heaps of political and government commencement and intrigue is required in arranging and organizing health needs of the elderly populace.

In Pakistan, because of lacking budget allocation in health sector and improper circulation of assets, the strength of elderly is incredibly influenced. Institutionalized and mental health care services needed by elderly are insufficient in Pakistan. In Pakistan, not many Non-Governmental Organizations (NGOs) are serving the elderly population. Social insurance frameworks in Pakistan needs geriatric clinics and the greater part of the elderly are treated by general or family doctors (Ganatra, Zafar, Qidwai, & Rozi, 2008). Besides, trained health experts are missing to address with exceptional issues of this age group

(Qidwai & Ashfaq, 2011). These rising grave issues are underdiagnosed and undertreated and turning into a general health peril. A national policy for the advancement of better mental health of the elderly was planned in 1999, and it included preparing of medicinal services experts in geriatrics and different territories; however, execution is yet to be seen lots of room for improvement.

From a theoretical point of view, several studies examined the relationship of depression with other variables, but lack the important variable of old age Old age depression is considered a normal part of aging development in Pakistan, as the people are healthier than they asserted their full efforts for the development of the country. However, old people are the most mistreated part of this nation. They don't have enough resources to build their circles. Thus, the present research focuses on the aspects are that help the old population to cope with their circumstances. It would guide them to make a future plan for the older population.

In the light of empirical attempts to explain the construct of depression (Sabzwari & Azhar, 2011; Jalal & Younis, 2014) as well as through the international data provided by the United Nations (1995), a quite comprehensive picture of depression among elderly population has been portrayed (Azeem & Naz, 2015; Cassum, 2014; Ganatra, Zafar, Qidwai, & Rozi, 2008; Javed & Mustafa, 2013).

1.2.1.1. Factors effecting depression

Loneliness: Among the factors that affect depression is loneliness that is believed to play an important role in developing depressive symptoms in the old age. Loneliness is the feeling of loss of some closed one, living alone and lacking in social relationships. Loneliness can lead to depression and these two variables are interrelated with each other (Dill & Anderson, 1999). Lonely individual usually feel lonely that could lead to the feeling of depression. They believed that they are being treated unfairly and no one cares about

their feelings. This feeling of loneliness could compel them to focus on their failures and rejections in life. When these feelings are intensified their moods are affected and they could easily feel depressed.

Researchers have looked to analyze key socio demographic correlates of loneliness such as age, gender, and ethnicity (Dykstra, 2009; Heylen, 2010). Other studies signify that loneliness is associated with negative physical and mental health (Ayis, Gooberman-Hill & Ebrahim, 2003; Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006), increased mortality (Patterson & Veenstra, 2010) poor sleep, elevated physiological parameters such as stress hormones (Cacioppo, Hawkley, Crawford, Ernst, Burleson, Kowalewski, & Berntson, 2002); and increased health service use (Politis, Loane, Kiferle, Molloy, Brooks, & Piccini, 2010). Reviewing the past literature regarding the relationship of loneliness and depression inconsistent findings has been observed. For example, many researches failed to trace the relationship of loneliness and depression in old age (Carter, 2000). However, some longitudinal studies that focused on the long term effect found that loneliness would lead to depression (Prinstein & Greca, 2002).

Locus of Control: Briefly, in the study on the effect of locus of control on depression found a mixed finding in the literature. For instance, there are researches that found that the internal locus of control is negatively related to depression (Zawawi & Hamaideh, 2009). Many other studies on the other hand established that locus of control has a significant impact on depression. Similarly, studies such as Yu and Fan (2016) found that external locus of control has a positive effect on depression. In general, locus of control has been associated with general self-efficacy beliefs and mental health status of the individual (Helgeson, 1992; Wu, Tang, Kwok, 2004). Moreover, several empirical studies also suggest that in order to attain effective coping in stressful situation, healthy balance between beliefs in internal and external locus of control is important (Wong & Sproule,

1984). Hence, locus of control has empirically demonstrated a strong relationship between locus of control and psychological functioning of elderly and young population. Likewise, locus of control as an important influencing factor effecting elderly population is understudied. Elderly people vary in the exhibition of locus of control strategies in making decisions and developing strengths. Their use of locus of control strategies, hence, affects their level of depression.

Religiosity: Religion do plays a crucial part in person's life socially and psychologically. The importance of religion cannot be denied (Natascha, Brigid, & Webster 2011). Pakistan is an Islamic nation. The majority of Pakistani practice Islam in their life. Figure 1.2 gives a brief overview of the percentages of Muslims and other religions in Pakistan. Religious practices and psychological functioning have a generally progressive impact, with the resilient relationship being the connection between religious belief and decreased depression (Natascha, Brigid, & Webster 2011).

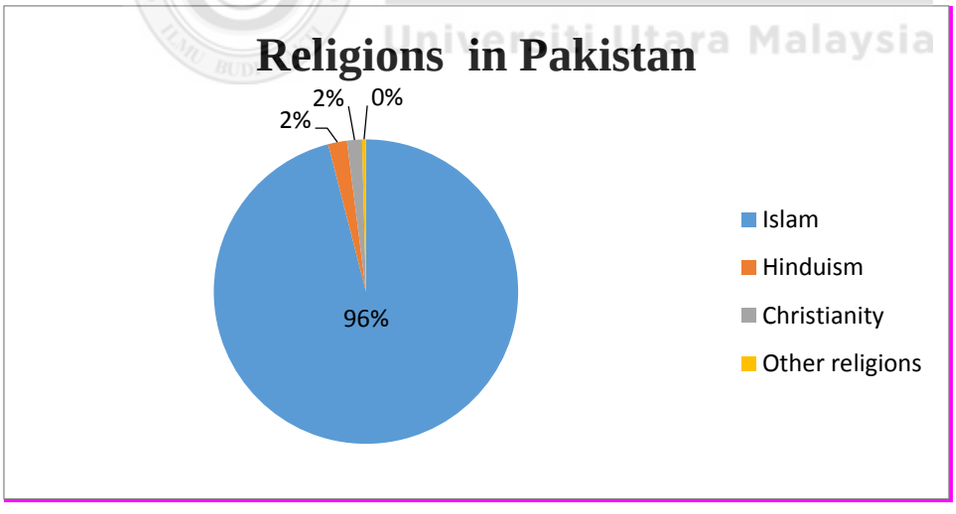

Figure 1.1. Percentages of Religions in Pakistan

But then, the role of religion in psychological illness remains understudied. One of the investigations by Kendler, Liu, Gardner, McCullough, Larson, and Prescott (2003) presumed that religion is a perplexing development which has a solid negative relation with life time pathology. Numerous inquiries stressed the significance of religion in the life of

a person. Religion is viewed as a vital factor in keeping up one's psychological health (Hackney & Sanders, 2003). Thus, the relationship between depression and religious orientation is worthy of empirical research. As the people age, they would develop depression when their level of religious orientation decreases (Bonelli, Dew, Koenig, & Rosmarin 2013). While many researches indicated that as religious orientation increases, the level of depression decreases. Thus, there exists a strong relationship between depression and religiosity (Bonelli Dew, Koenig, & Rosmarin, 2013; Lupo & Strous, 2011; Levin, 2010).

Despite being a significant factor, the importance of religiosity as a moderator has been neglected in the previous studies. The present study believes that the moderating role of religiosity can serve to enhance the life of the old people. As elderly people start to take part in the religious activities and gatherings, they develop social skills that help them to alleviate their loneliness level that might decrease their depression. Several empirical investigations have also documented that religion orientation has an impact on successful aging and well-being despite chronic degenerative diseases, neuropsychiatry, functionality, mortality (Lucchetti, Badan-Neto, Peres, Peres, Moreira-Almeida, & Koenig, 2011). Likewise, an increasing number of researches have shown a positive association between religion and better quality of life for older adults. An increasing number of studies have showed positive correlation between religion and quality of life (e.g. Sawatzky, Ratner & Chiu, 2005).

In addition, religiousness seems to have an impact on older adults' health as well. According to several studies, religiousness and spirituality were associated with lower pervasiveness of depression (Koenig, 2009), better quality of life (Sawatzky, Ratner, & Chiu, 2005), and even greater survival (Chida, Steptoe, & Powell, 2009). However, studies

dealing with the impact of religiousness in older individuals, particularly in Asian countries are not frequent in the psychology literature.

Keeping in view the above mentioned literature regarding depression in old age, it has become quite evident that important factors influencing elderly depression have been neglected in previous researches especially in Pakistani context. Old age is said to be one of the transition period of an individual. Some of the significant factors that play an important role in part of transition period are loneliness and locus of control. Feelings of loneliness and locus of control affects the level of depression experienced by elderly population. Moreover, the associations among depression, loneliness and locus of control could be also buffered by the level of religious orientation among elderly people. Hence, the significance of the present study lies in the examination of the factors that affected the level of depression in old age and the role of religiosity as moderator.

The aim of the present study would to explore a multidimensional model comprising the relationships among loneliness, depression, locus of control and religiosity among elderly population. As supported by the literature, an extraordinary level of religiosity plays an important role to reduce symptoms of depression and decrease loneliness among old sample. However, work is yet to be done that could elaborate the role of religiosity and locus of control affecting the level of depression among elderly.

Hence, this research would hopefully address the knowledge gap related to level of depression loneliness, locus of control and religiosity among elderly population. As aforementioned, the majority of the prior researches only focused on the relationship of loneliness and locus of control on depression. However, the impact of loneliness and locus of control on depression still needs to be explored. In addition, the moderating effect of religiosity and locus of control is still uncertain among old people in Pakistan. Therefore,

this study will focus on the untouched areas that are not well addressed by the previous researches especially among the elderly in Pakistan.

1.3 Research Questions

In the light of the problem statement, the following questions arise.

1) Is there any impact of loneliness on depression?
2) Is there any impact of locus of control on depression?
3) Is there any impact of religiosity as a moderator on the impact of loneliness on depression?
4) Is there any impact of religiosity as a moderator on the impact of locus of control on depression?
5) Is there any impact of demographic factors (such as, gender, age, education, family size, marital status, number of children and socio-economic status) on depression?

1.4 Objectives of the study

In the light of above research questions subsequent research objectives are articulated.

1) To examine the impact of loneliness on depression.
2) To examine the impact of locus of control (i.e. internal, external and powerful others) on depression.
3) To describe the moderating effect of religiosity on the impact of loneliness on depression.
4) To examine the moderating effect of religiosity on the impact of locus of control (i.e. internal, external and powerful others) on depression.
5) To examine the impact of demographic factors (such as gender, age, education, family size, marital status, number of children and socio-economic status) on the level of depression.

1.5 Hypotheses

To achieve the objective of the research, the following hypothesis is formulated.

$H_{01:}$ There is no effect of loneliness on depression.

$H_{o2:}$ There is no effect of locus of control on depression.

$H_{o2a:}$ There is no effect of internal locus of control on depression.

$H_{o2b:}$ There is no effect of external locus of control on depression.

$H_{o2c:}$ There is no effect of powerful others locus of control on depression.

$H_{o3:}$ There is no effect of moderator religiosity on the impact of loneliness on depression.

$H_{o4:}$ There is no effect of religiosity on the impact of locus of control on depression.

$H_{o4a:}$ There is no effect of religiosity on the impact of internal locus of control on depression.

$H_{o4b:}$ There is no effect of religiosity on the impact of external locus of control on depression.

$H_{o4c:}$ There is no effect of religiosity on the impact of powerful others locus of control on depression.

$H_{o5:}$ There is no effect demographic factor on depression such as

$H_{05a:}$ There is no effect of gender on depression.

$H_{o5b:}$ There is no effect of age on depression.

$H_{o5c:}$ There is no effect of education on depression.

$H_{o5d:}$ There is no effect of family size on depression.

$H_{o5e:}$ There is no effect of marital status on depression.

$H_{o5f:}$ There is no effect of number of children on depression.

H_{o5}g There is no effect of socio-economic status on depression.

1.6 Significance of the Study

The present study gives groundwork of facts for thoughtful understanding, the construct of depression, loneliness, locus of control and religiosity to researchers and common people. It focuses on psycho-pathology, mental health, and the connection between them and the psychological reasons behind them. Furthermore, the study also provides a body of suggestion that would guide clinical trainings, with empirically valid methods to assess old population and their difficulties.

The most important aspect of the study is to measure the level or intensity of depression as effected by locus of control, loneliness and religiosity. When we are free of depression, uneasiness, extreme push and stress, addictions, and other mental issues then we are more ready to experience our lives minus all potential limitations. Significant calmness is a characteristic condition and is accessible to everybody. Psychological health reinforced and backings our capacity to have solid connections, settle on a great life decision. Kept up physical well-being and prosperity, handle the common high points and low points of life, found and developed toward our potential (Domènech-Abella, Lara, Rubio-Valera, Olaya, Moneta, Rico-Uribe, & Haro, 2017).

1.6.1 Theoretical Significance

The research contributes towards an expansion of theoretical and applied science through understanding the concept of mental functioning in old age. This study provides scientific information about the severity of depression and poor mental health in Pakistan especially among old people. It also showed the capabilities of an individual when he/she approaches to old age. The findings contributed to a sound scientific framework for older people. The new generated knowledge from the study would also validate or contradict previous findings. Thus, the knowledge would gain expansion in the particular area.

The present research would contribute to the literature by giving a vision of loneliness locus of control and religiosity influencing geriatric depression especially among Pakistani older people. The researchers so far studied only the relationship between the variables. The present research covered the important factors that were previously ignored. Therefore, in the midst of previous research conducted in this field, only a few studies impact the present variables. There was a methodological gap in the previous researches. Moreover, religiosity was not used as a moderator in any research done among Pakistani old folks, but the present research used religiosity as a moderator and it is the new thing in a literature so there is a great help in a literature.

1.6.2 Practical Significance

At a practical level, this study is hoped to provide significant practical contributions in the area of policy making, psychiatric research, and mental health providers. It may help the governmental officials to practice strategies to make a life of a common person better. The preventive measures resulted from this study could also be designed to enhance mental health facilities to all the people of the country especially the old folks.

Current study would also reinforce means of prevention and cure through illuminating clinical professionals for further research. The wide range of questions that confront researchers in clinical psychology can be answered by this research. It would, therefore, be beneficial to ascertain important contributing factors that played an important role in improving the mental health of an individual in later ages. The healthier elders could live productively. Thus, it is necessary for the elderly population to experience a healthier and happier life. Currently, few interventions incorporate strategies were able to help and support older people to move from illness to well-being continuum. This study develops a significant method to alleviate mental problems. The old people hope to manage their everyday life to be more fruitful.

Currently, all have acknowledged the importance of ensuring old people mental and physical health. In the new millennium, the importance of psychological wellbeing is very well known. It is the responsibility of the government to support individuals to develop good mental health. However, this proactive approach to develop a healthier mental health that is lacking and the present research is hoped to promote it actively.

The study will provide information and facts to the scholars as their reference in doing their empirical. The present study will help teachers to gain a deeper understanding of the psychological problems and their possible interventions that could be applied especially among the old folks. By this study, several programs regarding depression management could be benefited. For instance, certain mental health practitioners working with old age population suffering from depression within *Pakistan at Mental Health Solace*, *Agha Khan University Depression Zone*, *Depression Treatment Centers*, and *Karwane-e-Hayat* can implement strategies to understand and treat depression among old age population. Moreover, researchers working with psychiatric patients could devise a tool that can elaborate the factors and elements of geriatric depression. The study, thus, will open new horizons in the growth of the community.

Therefore, this type of research is lacking within the Pakistani context. Despite the fact that many governmental and non-governmental organizations in Pakistan are doing efforts to understand psychological functioning of the elderly, but they have limited resources which is hampering them to make efforts to understand depression related problems in old age. Hence, the lack of knowledge regarding geriatric depression has led to mismanagement of the concept of mental health due to lack of understanding about cognitive, effective and somatic symptoms during the onset of depression among elderly population. Moreover, lack of understanding related to complex interactions among genetic susceptibilities, cognitive diathesis, age-related neurobiological changes, and stressful events has also lead

to devastating consequences in operationalizing depression in adult sample within Pakistan. Similarly, prevalence of insomnia, loneliness, locus of control, impact of socio economic status, and lack of knowledge about spiritual issues has also become a source to mismanagement of the concept of mental health in old age.

Normally, people feel that depression is a part of aging, but it is not the case. Indeed, mental health and old age have a deep relationship that is influenced by many variables like loneliness and locus of control. Furthermore, religiosity as the moderator plays a significant role in monitoring depression.

1.7 Conceptual and Operational Definitions

The conceptual and operational definitions of variables studied in the present research are discussed in the following sub section.

1.7.1 Depression

According to American Psychiatric Association (2013), depression is characterized as loss of interest or pleasure in every day exercises, loss of sleep, poor social skills, feeling of worthlessness, loss of concentration and suicidal ideation. It contrarily influences how one feel, the manner in which one thinks and how you act. Depression causes feelings of sadness as well as a loss of interest in exercises once cherished. It can prompt collection of emotional and physical issues and can diminish an individual's capacity to put effort at work and at home. Depression is a typical mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-esteem, disturbed sleep or low desire for food, and poor concentration (Marcus, Yasamy, Van Ommeren, Chisholm, & Saxena, 2012; Neale, Davison, & Gerald, 2001).

Operationally depression in old people is measured by using a short form of geriatric depression scale by Sheikh and Yesavage (1986). It is a screening test with 15 items Yes

and No answers. Scores of 0-4 indicating a normal condition, Scores of 5-8 indicated mild depression while score of 9-11 indicating moderate depression; and score of 12-15 means individual is having severe depression.

1.7.2 Loneliness

Generally, loneliness is a complex and usually unpleasant emotional response to isolation or lack of companionship (Cacioppo & Patrick, 2008). It has also been described as social pain. Loneliness however can also felt notwithstanding when encompassed by other individuals. The reasons for loneliness are many such as social, mental, emotional, and physical factors (Peplau & Perlman, 1982). Loneliness is frequently characterized as far as one's connectedness to other people, or all the more explicitly as the upsetting background that happens when an individual's system of social relations is inadequate in some critical way (Cacioppo, Hawkley, & Thisted, 2010).

Operationally, loneliness is measured by using the University of California Los Angles Scale (UCLA). It measures levels of loneliness among people; score ranges are from 21-84 while a higher score indicates loneliness. Loneliness is divided into three categories based on the scores these categories are low, medium and high. Internal consistency (coefficient alpha ranging from 0.89 to 0.94) and test retest reliability was 0.73. Minimum score was 21 and the maximum was 84. Its alpha reliability was 0.83 for non-clinical sample and0.84 on drawn sample of diagnosed depressed patients. A pilot study is conducted to check the reliability of the scale. The Cronbach's alpha reliability of the UCLA Loneliness scale is 0.63.

1.7.3 Locus of Control

Conceptually, locus of control is defined by Rotter (1966). According to him locus of control indicates to the degree to which people trust they can control occasions influencing them. Locus of control is one of the four elements of core self-evaluations, one's

fundamental appraisal of oneself together with neuroticism, self-efficacy and self-regard (Rotter, 1975). People with a strong internal locus of control trust occasions throughout their life derived fundamentally from their very own activities: for instance, while getting test results, individuals with an internal locus of control will in general praise or blame themselves and their capacities. Individuals with a strong external locus of control will in general praise or blame external factors, for example, the teacher or the papers (Neil, Carlson, Donald, Miller, Donahoe, Buskist, & Martin, 2007). Lefcourt defined the perceived locus of control is a generalized expectancy for internal instead of external control of reinforcements (Lefcourt, 2014).

Operationally Locus of control is measured by using Levenson multidimensional locus of control scale. It consisted of three sub scales namely internal, external and powerful others. People having an internal locus of control have faith that they have control over themselves. External locus of control put all their consequences of events on the external environment. Powerful others locus of control has faith that other powerful people are the cause of their sufferings. It is Likert type scale with 6-point response format. It contains 24 items 1,2,3,4,5,10, 19,21 measure internal control, items 6,7,8,9,13, 22,23,24 measure chance/ external dimension and items 11,12,14,15,16,17,18,20 measure the dimension of the powerful others.

The questionnaire is a 6-point rating scale ranging from very strongly disagrees to very strongly agree. In this study, the Urdu version was used and reliabilities were determined for total scale in a drawn sample of the study. These were 0.76 for total scale, 0.58 for internal, 0.73 for a chance and 0.71 for powerful others. A pilot study is conducted to check the authenticity of the scale. The Cronbach's alpha reliability is 0.091. The other three subscales of locus of control, i.e. internal locus of control. External locus of control and

powerful others scale. The Cronbach's alpha reliability of these subscales is 0.71 internal, 0.81chance and 0.88 powerful others all these reliabilities are quite good.

1.7.4 Religiosity

A religion is a systematized collection of beliefs, social frameworks, and world perspectives that relate humanity to an order of existence. Conceptually, religiosity is observed to be synonymous with terms as religiousness, orthodoxy, confidence, conviction, devotion, dedication, and blessedness (Cardwell, 1980). It incorporates experiential, ritualistic, ideological, scholarly, noteworthy, statement of faith, collective, doctrinal, moral, and social dimensions. As far as religion a wide range of components might shield scores of people from psychologically depleting impacts. Some may discover their hearts very still when bowed down in surrender to their Lord. Others may discover comfort inside religious sermons where diverse religious books are perused and discussed. Still others may discover their spirits settled when they submit totally to their Creator, with an enduring conviction that he has full power over all that is going on in their lives (Ismail & Desmukh, 2012).

Operationally religiosity is measured by using the Bukhari Saad Moral judgment and religious orientation of adolescents, young adults and adults. It has 17 items. These questions are answered on a 6-point Likert-type scale (1 = very strongly disagree, 6 = very strongly agree). Scores range from 17 to 102. Higher scores indicate higher levels of a religious orientation. The cutoff score of the religiosity scale is 42.

1.7.5 Old People

Old age consists of ages nearing or outperforming the future of people, and along these lines and thus the end of the human. Old people comprises of elderly individuals (worldwide usage), seniors, senior nationals and older grown-ups in the social sciences, the

elderly and elderly folks in numerous societies (American Psychiatric Association, 2006). Old age includes "the later part of life; the time of life after youth and middle age for the most part with reference to deterioration. At what age old age starts can't be generally characterized in light of the fact that it varies as indicated by the context. The United Nations has concurred that 65+ years might be generally indicated as old age and this is the primary endeavor at a global meaning of old age (World Health Organization, 2016). In Pakistan 60 years is defined as the age of elderly (Jalal, 2012). Operationally, in the present study the age is defined from 60- 70 plus years of age in order to make a data good for research (World Health Organization, 2009).

1.8 Conclusion

All of these constructs along with mental health dynamically contribute to an integrated and comprehensive health model that has positive impact on the mental health of older people. Therefore, developing an assimilated old person's health concept helps all health departments to understand the concept of and importance of mental health in old people. It enabled them to establish and implement programs that address elderly illness and health in Pakistan.

1.9 Organization of the Thesis

Chapter one explains the overall viewpoint of this research, such as the research objectives, questions, research significance and conceptual and operational definition of the construct variables. Chapter two tends to address the theoretical framework, literature review as well as the derivation of hypotheses of the study and the theories that support the development of the proposed framework. In Chapter Three, the research philosophy is introduced and clarified. The preliminary investigation includes the normality; reliability and validity of the study were also discussed. In chapter four, research discoveries are elucidated to answer exploration questions. Lastly, Chapter Five consists of discussions of the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

There has been an ongoing effort on the part of researchers to understand that geriatric depression influenced by the level of loneliness and locus of control as well as the moderating role of religiosity (Khairudin, Nasir, Zainah, Fatimah, & Fatimah, 2011; Levin, 2010; Qualter, Brown, Munn, & Rotenberg, 2010). In today's world, the old person is constantly attached to depression caused by pertinent factors, namely hectic routine, loneliness, peer pressure, materialistic life, and the excess of machines (Jeste, Alexopoulos, Bartels, Cummings, Gallo, Gottlieb, & Lebowitz, 1999). The condition of geriatric depression in Pakistan however is worst due to some additional factors like terrorism, low level of living, economic problems, population problems, etc. The ratio of geriatric depression is alarming in Pakistani society (Qadir, Haqqani, Khalid, Huma, & Medhin, 2014).

A number of researchers proposed that cognitive factors can trigger depression problems in daily life. It is considered that people in old age are facing the problem of depression, mostly as compared to the other age group (Bromet, Andrade, Hwang, Sampson, Alonso, De Girolamo, & Karam, 2011). As Beck and his colleagues (1979) assumed that depressed individuals ought to adverse views or prospects of themselves, their present condition, and their forthcoming. These destructive opinions can lead one to construe proceedings in a negatively prejudiced manner and to act in less than ideal behaviors. Such adverse world insight can also clue ultimately, to deprive presentations, disappointments, and sufferers, and eventually can turn into a self-fulfilling prophecy (Beck, 1979).

This chapter critically reviews the literature to pave way for the development of a conceptual model of geriatric depression. This also explains a framework that focuses on the loneliness and locus of control and their impact on the geriatric depression as well as to check the moderating role of religiosity among these relationships. There are many types of research that stresses the significance of religion in the life of a person. It is clear from the writing that religion is vital in keeping up one's mental health (Hackney & Sanders, 2003).

Firstly, the evaluation of former literature in the area of depression provided the groundwork to understand its concept and its dimensions in the context of old age. This appraisal also provides the hypothetical and pragmatic context for the study. Then, loneliness and locus of control as predictors of their level of depression are discussed. The impact of both predicting variables on the outcome variable is then explored. Thirdly, the moderating variable constructs namely religiosity is reviewed and several propositions were derived, based on the relationships. Fourthly, the discussion on the underpinning theories that derived the causal factor of depression, clinched the conceptual framework together and discussed the framework based on the cognitive paradigm, the study of cognitive factors that plays a role in developing depression. Fifthly, the integration of construct variable is presented. Lastly, there is a presentation of the theoretical framework of the study.

2.2 Geriatric Depression

In the last several years, geriatric depression literature identified and described the important dimensions of society and its application in practice. Reviewing the development of elderly depression concepts provide a significant preliminary idea intended for examining the impact of depression on older people’s health and wellbeing.

However, current research primarily focused on the factors that play important role in old age depression. Generally, it focused on relational issues and moderating role of religiosity.

Similarly, World Health organization, in 1990 had categorized depression as an important cause of disability worldwide, owing to its negative impact on labor productivity. This problem has been acknowledged as a health issue almost a decade and a half ago and still poses a major health challenge. Behavioral and mental disorders account for 12% of the world disease, affecting almost 450 million people (World Health Organization, 2001). It is relevant to note that countries assign a smaller amount of their budget that is 1% of their total health budgets to the occurrence of mental health expenditures (Evans, Kiran, & Bhattacharyya, 2011).

According to Pilania, Bairwa, Kumar, Khanna, and Kurana (2013) depression is supposedly the major disease that affects 350 million people all-inclusive and represents a key percentage of mental health disorders. World Mental Health Survey highlights that approximately 6% people in the age group of 18 years and directly above have at least one episode of depression (Bromet, *et al.,* 2011). The lifetime dominance of depression ranges from 8 to 12% in most countries (Andrade, Caraveo-anduaga, Berglund, Bijl, Graaf; Vollebergh, & Kawakami, 2003). Depression has also won accolades as one of the leading causes of burden of disease during 2000-2002, is a third most common disease (World Health Organization, 2009).

It is estimated that depression will get second place throughout the world by the year 2020 and first place by 2030. Conferring to the report of the world health organization, the death rate of elderly is four times higher who have depression than those without depression,

frequently because of cardiac illness or stroke (World Health organization, 2009). Suicide is one of the factors which are widely common because of depressive disorders (Jacob, 2012).

The occurrence of depression among populace more than 20 years is 15.1% (Poongothai, Pradeepa, Ganesan, & Mohan, 2009). The larger prevalence of depressive disorders among the elderly (with chronic co-morbid diseases) is inconsistent from 10 to 25 percent (Kritiotis, 2007). A meta-analysis of 74 examines elderly people found the overall pervasiveness rate of depressive disorders to be between 4.7 to 16 percent. This examination demonstrates a nearly higher pervasiveness of geriatric gloom in India 21.9 percent (Barua, Ghosh, Kar, & Basilio, 2011).

Almost, there were around 600 million elderlies, matured 60 and over in the year 2000. Around 66% of the world elderly are living in creating nations. In foresight of this movement in populace demographics, essential medical services, suppliers should be ready and educated of the exceptional needs of the elderly (Solomon, 2000). However, a lot of previous studies have been conducted that supported better health for older people. But no study exists that focus on the impact of various factors such as loneliness and locus of control on old age depression and the moderating role of religiosity. The world populace maturing is a marvel brought on by an increment in the supreme and a relative number of elderly in created and creating nations. This is an aftereffect of the sensational decrease in death rates (expand future) throughout the most recent 50 years furthermore sharp falls in conception rates, particularly in about every creating country.

Depression is an emotional ailment portrayed by depressive side effects, for example, unsettling influence in disposition, cognition, and conduct (Burke & Laramie, 2000). A

group based studies demonstrate an extensive variety of commonness of depression in the elderly, going from 4.8% in Spain to as high as 35% in Turkey and Hong Kong (Bekaroglu, Uluutku, Tanriover, & Kirpinar, 1991; Lobo, Saz, Marcos, Dia, & De-La-Camara, 1995; Woo, Ho, Lau, Yuen, Chiu, Lee, & Chi, 1994). Most importantly, primary health care representatives must take into consideration the shifts and changes in demographic patterns of cognitive disorders. According to Blanchad, Waterrus, and Mann (1994) it is a common phenomenon that most of the elderly suffering from depression are mistakenly diagnosed as suffering from the side effects of aging. Thus, the negative impact of this diagnosis not only slows down the recognition and recovery process but also increases emotional and physical dependence on other individuals (Blanchad, Waterrus, & Mann, 1994).

On the other hand, the indications of a depressive issue in the elderly are additionally distinctively contrasted with different times of adulthood. The elderly frequently gives atypical, non-particular or substantial side effects. Moreover, specialists may have issues in inspiring history as a consequence of the vicinity of psychological disability in the elderly. Hesitance or denial by the patient and relatives might likewise confound the specialist's appraisal (VanderPol, Setter, Hunter, & Pamintuan, 1998). As the vast majority of these patients are seen at an essential consideration level and not by the specialists, essential consideration specialists assume a critical part in the early recognition and treatment of the depressed elderly (Schwenk, Coyne, & Fechner, 1996). In this respect, cognitive elements play an important role as the cognitions of old people guides them to depression in old age i.e. their sufferings, losses, and failure (Williams, 2016).

Furthermore, childhood and adolescent depression would have an effect on old age. In this regard, a research is done by Zgambo, Kalembo, Guoping, and Honghong, (2012) in China on depression in children and adolescents. The study found a significant relationship between depression in adolescence and adolescents with the depression in old age. Thus, there is a need to create methodologies that will meet youngsters' and youth's enthusiastic needs and support their mental status in homes, schools and healing centers. They may then be able to fight depression in later life. Old age and depression found to be closely related. A research by Stak, Vinkers, Gussekloo, Beekman, Vander Mast, and Westendrop (2005) using a future inhabitants research of 85-year-olds, suggested that in the presence of perceived loneliness the mortality risk towards depression increases.

As quantified by Cacioppo, Hughes, Waite, Hawkley, and Thisted (2006) a longitudinal study was conducted in two phases. The degree to which loneliness is a one of a kind danger component for depressive indications was resolved in two populace based investigations of moderately aged to more seasoned grownups, and the conceivable causal impacts of loneliness and depressive manifestations were analyzed longitudinally in the second study. These findings suggest that loneliness and depression can act in a synergistic impact to lessen well-being in moderately aged and more established grownups. The empirical investigations illustrate that the relationship of loneliness and depressive manifestations is essentially more grounded among male adults as compared to female adults, however, yet the relationship in the middle of loneliness and depressive side effects was solid and measurably noteworthy for females and subsequently for males. Future research needs to be conducted using the cross-national sample comprising of a variety of variables. Instead of using gender variables like education and occupation, marital status

may also be considered as an alarming factor in developing an association between loneliness and depression.

Another cross-sectional research by Lasgaard, Goossens, and Elklit (2011) clearly indicated the presence of a particular relationship between loneliness and depressive manifestations in the adolescent that leads towards old age. Moreover, the study focuses on depressive manifestations as a predecessor of loneliness that predicts depression. The above mentioned instance lucidly explains the association between depression and the factors that are connected with it during youth as well as during onset of old age.

An important role in depression among old people is future uncertainty, self-esteem, and depression, one of the studies focused on these factors. According to them, females in a depressed state of mind may be more disposed to participate in rumination about potential disappointment in future occasions, thus making these cynical inclinations more purported for females. Additionally, this communication impact showed that at-risk men look like as of now women in their conviction about future occasions, recommending that these negative comprehensions are obvious without the depressed state of mind. These outcomes appear to propose that at-risk male may be more careful about this negative inclination and this may show a more grounded weakness trademark for males at danger when contrasted with females at risk (Steffens, Fisher, Langa, Potter, & Plassman, 2009).

Study of Chalise and Rai (2013) found the pervasiveness of depression among elderly measured by GDS was 29.7 percent. The correlation was found between depression, age, sex, marital status, family size, instrumental activities of daily living (IADL), loneliness and participation in household activities. Regression analysis showed that higher the age, larger the family size, being widowed/widower, higher the dependency in IADL and

illiteracy were associated with depression. These are the demographics that affect depression in old age.

2.2.1 Prevalence of Depression among Older People in Pakistan

There are several reasons that make the depression in older people an especially important area of study. Older people (50+ years old) participate in focus groups spontaneously identified loneliness, isolation, and the loss of a loved one as major factors of depression (Karim, Weisz, Bibi, & Rehman, 2015). Moreover, depression was identified as a factor that could erode people's sense of personal control and determination to remain active (Shehzad, Zahid, Syed, Asad, & Pasha, 2015). Additional, depression is associated with poorer physical health and is related to mental health problems like loneliness (Irshad & Afzal, 2015). Thus, if our goal as gerontologists is to improve the health and quality of life of older people, then the study of depression appears to be an important avenue of research. As the proportion of older people in Pakistan and in many countries around the world increases, studying factors that could improve the quality of life of older people becomes even more crucial.

In 2005, people over the age of 65 years made up 13.1% of the Pakistan population, an increase from 9.6% in 1981 and from less than 8% in the 1950's and 1960's (World Bank report, 2010). Because of the baby boom trend, low fertility rates, and longer life expectancies, the proportion of older people aged 65+ years is expected to almost double, increasing from 13% to 24.5% of the Pakistan population (or to a total of 9.8 million people) by the year 2036. Moreover, the number of people aged 85+ years and older has increased substantially in the past several decades and is expected to continue to increase, especially as the baby boomers enter this age group. In Punjab, the picture resembles as the rest of Pakistan: 13.5% of the population was 65 years and over in 2005 and this

segment of the population is projected to increase to 21.7% by 2031 (World Bank Report, 2010).

The importance of depression and variables related to it such as social isolation and social support is implied in such policy initiatives as Aging in Place, Age-Friendly Communities, and the National Action Plan. Within these initiatives is the idea that older person's quality of life and health is tied to their social relationships and participation in the community. For example, the National Action Plan outlines three pillars: 1) Health, wellness, and security; 2) Continuous learning, work and participation; and 3) Supporting and caring in the community which includes the aspects of depression and social isolation (National Action Plan Pakistan, 2004). More locally, the issue of depression among older individuals has been identified as a major concern amongst the community, government, research, and health organizations. One of the major messages aimed at researchers was to demonstrate "proof of a problem." That is, it was argued that it is difficult for service providers or policymakers to secure funding or demonstrate a need for services without more research examining the consequences of depression. In sum, these national and local initiatives demonstrate the importance of studying depression amongst older people.

In conclusion, people who are not able to socialize with different people tend to feel lonely. Evidences from literature exist which demonstrate that lonely people develop depression in later life. In a current scenario with context to Pakistan, where people in their old age feel lonelier as compared to developed countries. The main reason is transition from joint family structure to nuclear family which creates loneliness among older people who live alone in their houses that leads them towards depression. Moreover, due to globalization and in search of better living prospect, young people shift to big cities and thus leaving old people in villages. This factor may also become source of depression for

deserted old people. Therefore, there is a need to study the factors that contribute towards the depression of older people and the factors that could increase wellbeing of older people.

2.2.2 Effects of Depression on the Elderly People

Sometimes old age can be the most troublesome period of life, stamped by breaking down wellbeing and loss of vitality. Social, mental and wellbeing issues are the extraordinary concerns of mental wellbeing in the older populace especially for those who live alone or live in old homes. This is a period in which individuals need to confront the numerous difficulties of changing the family flow, for the most part, kids leaving the family and numerous at times the older populace leaving the family unit of their youngsters. In Pakistan, the greater part of older individuals' lives in their kid's homes while numerous others have no family to live with or can't live with the family they have. At first, these motions were valid for the Western society. However, in the present period weights of the joint family framework and obstructing urbanization and movement have expanded troubles to modify the oldest inside of the current families even in nations like Pakistan. This changing social progress has cleared the path for the foundation of private old homes.

Various analysts, sociologists, antiquarians have all through the most recent 60 years reported a crucial change in how people live, function cooperate with one another and how it influences peoples' group lives (Riches & Dawson, 1996; Hollinger & Haller, 1990; Gordon, 1976). People are no more guided by their closed family or group, yet rather different signs given to them by an urban domain. This has turned out to be an adjustment in western culture and a move far from close netted towns where one's future was laid before one, towards a more individualistic culture with new types of interpersonal organizations, structures and social relations (Coleman, 2005; Beck-Gernsheim, 2000;

Cushman, 1990; Gordon, 1976; Riches & Dawson, 1996; Riesman, 1975). As indicated by various scholars, among others the sociologists Beck -Gernsheim (2000) with the industrial development in the western world, there has been a huge measure cessation of the old-fashioned style of living. This change brought so many changes in people's behavior that leads them to the geriatric depression.

Multifaceted studies appear to bolster an adjustment in the western world that is major not the same as more collectivistic social orders (Markus & Kitayama, 1991; Triandis, McCusker, Betancourt, Iwao, Leung, Salazar, & Zaleski, 1993; Triandis, 1989; Conway 2004; Wang, 2001). The emphasis is more on family and friends in collectivistic societies as compared to individualistic society. At the point when individuals depict their identity. When people emphasize more on accomplishment and individual traits while depicting their social role then it is an individualistic society. These discoveries demonstrate that people inside collectivistic social orders are closely joined with loved ones and in this manner are less lonely, the connection in the middle of the depression and social contrasts are more intricate.

According to Rokach, Orzeck, Moya, and Exposito (2002), North Americans saw themselves as lonelier than Spanish people. Research by Mund and Neyer (2016) plainly shows that Italians are closely associated with their loved ones than the Americans, Australians and British. They additionally found that Germans, Hungarian, and Austrians have fewer companions than Americans, Australians, British, and Italians. Additionally, that Americans and Australian utilize the word companion in a more extensive and more easygoing route than the Germans, Hungarian and Austrian. Within a Pakistani society, the collectivistic and interdependent culture demand close interactions among family

members, and deserted by the family and living alone could be the source of depression among older people.

2.3 Loneliness

In the last several decades, literature identified and described it in old people. The development of old peoples' well-being concepts provided an imperative preliminary idea for examining the impact of loneliness on old people's health and wellbeing. Nevertheless, the present research focused on the impact of loneliness on the level of depression in old people. The past researchers are disjointed and patchy. The generation of theory as a scientific objective, specifically in the mental health sector, was rare and generally lacks totality to the phenomenon of loneliness. Feeling lonely has been appeared to build circulatory strain and danger of cardiovascular ailments, raises cortisol and thus the anxiety levels, which debilitate the resistant framework, impede rest quality prompting negative impacts on metabolic, neural and hormonal regulations and uplifts sentiments of depression, anxiety, and expanded powerlessness (Duane, Brasher, & Koch, 2013). Self-perceived loneliness duplicates the danger of adding to Alzheimer's ailment (Duane, Brasher, & Koch, 2013). Hence, there is confirmation that loneliness and social segregation are connected with the lessened the psychological capacity, while socially drew in more established individuals' encounter less intellectual decay and are less inclined to dementia.

Having feeble social associations likewise convey a wellbeing hazard. Those with solid social associations have a 50% improved probability of survival after a normal subsequent time of 7½ years. It has been found that loneliness is regularly identified with sentiments

of outrage, bitterness, depression, uselessness, disdain, void, defenselessness, and cynicism (Jaremka, Faagundes, Glaser, Bennett, Malarkey, & Kiecolt, 2013).

Loneliness has been connected with depression and is accordingly a dangerous element for suicide (Marano, 2003). Emile Durkheim has described loneliness, specifically the inability or unwillingness to live for others, i.e. for friendships or altruistic ideas, as the main reason for what he called egoistic suicide (Gutman, Brown, Akerman, & Obolenskaya, 2010). In adults, loneliness is a major precipitant of depression and alcoholism. People who are socially isolated may report poor sleep quality, and thus have diminished restorative processes (Hawkley, Gu, Luo, & Cacioppo, 2012). In children, a lack of social connections is directly linked to several forms of antisocial and self-destructive behavior, most notably hostile and delinquent behavior. In both children and adults, loneliness often has a negative impact on learning and memory. Its disruption of sleep patterns can have a significant impact on the ability to function in everyday life (Marano, 2003). In older population, loneliness gives birth to negative thinking or even suicidal ideas among older people. The older people, who fail to get social support from their relatives, thus suffer from the feelings of isolation and tend to develop depression (Carmona, Cuoto, & Comin, 2014).

Thus, the existing research certainly needs an integrated and systemic understanding of loneliness in older adults. Furthermore, previously, wellbeing was established and focused in the field of clinical psychology. The model did not integrate with the lonely feelings with the older people, especially in Pakistan. Therefore, in this research, the main focus was on the well-being of older people as the opposite of illness based on the ill-health-wellness continuum.

Furthermore, loneliness is a composite and mostly unpleasant passionate response to seclusion or lack of fellowship. Loneliness commonly includes on edge sentiments around a lack of connectedness or collection with changed individuals, in cooperation in the present-day and reaching out into the future. In that capacity, loneliness could be sensed nonetheless, once intricate by other individuals. The causes of loneliness are differed and include communal, psychological or passionate components. The examination has demonstrated that loneliness is broadly predominant all through society among individuals in relational unions, connections, families and effective professions (Peplau & Perlman, 1982). Currently, it has been investigated the subject in the writing of individuals since established vestige. Loneliness has additionally been portrayed as social agony a mental system intended to caution a person of confinement and rouse him/her to look for social associations (Cacioppo & Patrick, 2008).

Moreover, it is well said that people can come across loneliness for some issues and many life events might increase it, similar to the absence of companionship connections amid youth and youthfulness, or the physical nonattendance of important individuals around a man. In the meantime, loneliness may be a side effect of other social or mental issue, for example, depression. Thus, numerous individuals experience loneliness surprisingly when they are allowed to sit unattended as babies. It is likewise an extremely basic, however, typically transitory, the outcome of a separation or loss of any essential long hauls relationship. In these cases, it may stem both from the passing of a particular individual and from the withdrawal from social circles brought on by the occasion or the related bitterness leads towards depression (Aartsen & Jylha, 2011).

Izgar (2009) also investigated the relationship of loneliness and depression to anticipate depression levels of school principals by the relapse examination. This research was

performed on elders and the sample included school principals' of Turkey. The gender and educational background were assessed in this research. The findings reveal a significant relationship between loneliness and depression (Izgar, 2009).

The departure of an important individual in one's life will normally start a painful reaction in this circumstance; one may feel desolate, even while in the organization of others. Loneliness might likewise happen after the conception of a baby (frequently communicated in post-pregnancy anxiety) after marriage or taking after whatever another socially troublesome occasion, for example, moving from one's main residence into a new group prompting some chines to visit the family (Azam, Yunus, Din, Ahmad, Gazali, Ibrahim, & Maniam, 2013).

According to Baldwin, Chiu, Katona, and Graham (2002) Loneliness can happen inside unsteady relational unions or other cozy connections of a comparable nature, in which emotions present may incorporate indignation or hatred, or in which the sentiment love can't be given or got. At the point when one individual in a gathering starts to feel desolate, this inclination can spread to others, expanding everyone's danger for sentiments of loneliness. Therefore, identically individuals can feel desolate notwithstanding when they're encompassed by other individuals (Baldwin, Katona, & Graham, 2002). Throughout the history of geriatric depression has showed up in works of savants, writers, lyricists and authors, by the by, it was not until the seventies that forlornness was truly considered inside of the sociologies (Lasgaard, *et al.,* 2011; Marangoni & Ickes, 1989; Peplau & Perlman, 1982; Weiss, 1973). In 1982, the first center book on forlornness was distributed, getting hypotheses and exploration concentrating on depression. In this book the editors Letitia, Peplau and Daniel Perlman showed and arranged eight distinctive hypothetical methodologies towards loneliness that had risen following the forties in

Table2.1

Peplau and Perlman's summary of theoretical approaches towards loneliness

Theoretical Approaches	**Main Writer**
Cognitive	Peplau and Perlman (1982)
Existential	Moustakas (1961)
Interactionistic	Weiss (1973)
Phenomenological	Rogers (1961)
Privacy	Derlega and Margulis (1982)
Psychodynamic	Fromm-Reichmann (1959)
Sociological	Riesman (1961)
Systems	Flanders (1982)

Source: The Journal of Integrated Social Sciences (2013).

This has been the first ever book on loneliness exploration with well - known collection of hypothetical methodologies towards loneliness. These diverse methodologies conceptualize the ranges establishment through articles, theories; hypothesis parts, loneliness models and understandings, however, leaving a scattered field without an associated structure to the marvel loneliness (Derlega & Margulis, 1982; Lasgaard, *et al.,* 2011; Rokach, 2004). The distinctive approaches' comprehension of loneliness can be seen by the way they characterize it. The psychological methodology depends on an inconsistency model in the middle of coveted and genuine social relations (Peplau & Perlman, 1982). An Interactionist methodology depends on loneliness being multidimensional, implying that there are various types of loneliness, including passionate and social loneliness (Weiss, 1973).

Nonetheless, a psychoanalytic comprehension of loneliness depends on the baby's connection to the mother. Through this connection, kid encounters enthusiastic bonds and how to unite with others. Additionally the feeling of loneliness when critical others are outside of anyone's ability to see. An existentialistic comprehension of loneliness additionally separates between various types of loneliness, the principal one being

existential, which means loneliness is a piece of the human condition, added another in light of nervousness (Douglass & Moustakas, 1985).

Rubenstein and Shaver (1982) partitioned the distinctive reactions into diverse classifications and measured what percent related certain words with loneliness, explanations behind loneliness and responses to loneliness. Sentiments connected with loneliness have been regularly misery, fatigue, self-centeredness, and yearning to be with someone exceptional. They classified the words into four classes' demonstrating four elements when feeling lonely (Rubenstein & Shaver, 1982 and Sonderby & Wagoner, 2013). Thus, Table 2.2 depicted the list of Rubenstein and Shaver's four factors of feeling lonely respectively.

Table 2.2
Rubenstein and Shaver's four factors list of feeling lonely

Desperation	**Depression**	**Impatient-Boredom**	**Self-deprecation**
Desperation	Sad	Impatient	Unattractive
Panicked	Depressed	Bored	Down on Self
Helpless	Empty	Desire to be elsewhere	Stupid
Afraid	Isolated	Uneasy	Ashamed
Without Hope	Sorry for self	Angry	Insecure
Abandoned	Melancholy	Unable to Concentrate	
Vulnerable	Alienated		
	Longing		

Source: The Journal of Integrated Social Sciences (2013).

Table 2.3
Rubenstein and Shaver's list of reasons behind loneliness

Being Unattached	**Alienation**	**Being alone**	**Forced Isolation**	**Dislocation**
Having no Spouse	Feeling Different	Coming Home to an empty House	Being Housebound	Being Far from Home
Having no Sexual Partner	Being Misunderstood	Being alone	Being Hospitalized	In a new job or school
Breaking up with spouse	Not being Needed		Having no transportation	Moving Too often
	Having No close Friends			Traveling often

Source: The Journal of Integrated Social Sciences (2013).

They did likewise with explanations behind being lonely and found that loneliness is regularly credited with having nothing to do, feeling exhausted, being separated from everyone else, having no life partner or sweetheart. They then separated the answers into five classes. Response when feeling lonely was frequently perusing, listening to music and calling a companion. They likewise separated responses into four classifications.

Table 2.4
Rubenstein and Shaver's list of reactions towards loneliness

Sad Passivity:	**Active Solitude:**	**Spending Money:**	**Social Contact:**
Cry	Study or work	Spending Money	Call a Friend
Sleep	Write	Go shopping	Visit Somebody
Sit and Think	Listen to music		
Do nothing	Exercise		
over eat	Walk		
Take tranquilizers	Work on a hobby		
Drink or get "stoned"	Go to a movie		
	Read		
	Play		

Source: The Journal of Integrated Social Sciences (2013).

Albeit, a twin study discovered confirmation that hereditary qualities represent roughly 50% of the quantifiable contrasts in loneliness among grownups, which was like the heritability evaluations discovered beforehand in youngsters. These qualities work in a comparative way in men and women. The study discovered no regular natural commitments to grown-up loneliness (Middeldorp, Souza, Pelegrini, Riberio, Pereira, & Mendes, 2015).

2.3.1 Typology

There are different types of loneliness that are discussed in this chapter.

2.3.1.1 Feeling Lonely versus being Socially Isolated

There is an unmistakable qualification between feeling lonely and being socially isolated (for instance, an introvert). Specifically, one state of mind about loneliness is as a disparity between one's coveted and accomplished levels of social communication (Peplau &

Perlman, 1982). Loneliness is accordingly a subjective affair if a person supposes that s/he is desolate and then s/he is desolate. Individuals can be lonely while in isolation, or amidst a group. What makes an individual lonely is the way that there is more need for social collaboration than what is accessible right now. There is the possibility that an individual can be amidst a gathering and feel lonely because of not conversing with enough individuals.

On the other hand, one can be distant from everyone else and not feel lonely, despite the fact that there is nobody around that individual is not desolate infect there is no longing for social cooperation. There have additionally been proposals that every individual has their own sweet spot of social association. On the off chance that a man gets too little or an excessive amount of social connection, this could prompt sentiments of loneliness or over-incitement (Suedfeld & Coren, 1989). Solitude can have positive effects on individuals. One study found that although time spent alone tended to depress a person's mood and increase feelings of loneliness (Larson, Csikszentmihalyi, & Graef, 1982). Solitude is also associated with other positive growth experiences, religious experiences, and identity building such as solitary quests used in rites of passages for adolescents (Suedfeld & Coren, 1989).

2.3.1.2 Transient versus Chronic Loneliness

The other important typology of loneliness focuses on the time perspective (De jong-Gierveld & Raadschelders, 1982). In this respect, loneliness can be viewed as either transient or chronic. It has also been referred to as state and trait loneliness. Transient (state) loneliness is temporary in nature, caused by something in the environment, and is easily relieved. Chronic (trait) loneliness is more permanent, caused by the person himself, and is not easily relieved (Duck, 1994).

2.3.1.3 Loneliness as a Human Condition

The existentialist school of thought views loneliness as the essence of being human. Each human being comes into the world alone, travels through life as a separate person, and ultimately dies alone. Coping with this, accepting it, and learning how to direct our own lives with some degree of grace and satisfaction is the human condition (Carter, 2000).

2.3.2 Prevalence of Loneliness

There are several estimates and indicators of loneliness. It has been estimated that approximately 60 million people in the United States, or 20% of the total population, feels lonely (Cacioppo & Patrick, 2008). Another study found that 12% of Americans have no one with whom to spend free time or to discuss important matters (Cacioppo, Fowler, & Christakis, 2009). Other research suggests that this rate has been increasing over time. The General Social Survey by Hampton, Sessions, Her and Rainie (2009) found that between 1985 and 2004, the number of people the average American discussed important matters was decreased from three to two.

Loneliness appears to have intensified in every society in the world as modernization occurs. A certain amount of this loneliness appears to be related to greater migration, smaller household sizes, and a larger degree of media consumption. Within developed nations, loneliness has shown the largest increases among two groups: seniors and people living in low-density suburbs. Seniors living in suburban areas are particularly vulnerable because they lose the ability to drive them often become "stranded" and find it difficult to maintain interpersonal relationships (Hutcherson, Seppala, & Gross, 2008, Van Dijk, Cramm, & Nieboer, 2014).

Loneliness in older people develops many psychological problems such as depression and anxiety (Dykstra, 2009; Dykstra, Van Tilburg, & de Jong Gierveld, 2005; Jylha, 2004; Luanaigh & Lawlor, 2008; Pinquart & Sorensen, 2001). Mental health issues, for example, depression and anxiety have been observed to be produced because of loneliness (Aartsen & Jylha, 2011; Cohen & Shamus, 2009; Heikkinen & Kauppinen, 2011; Tijhuis, de Jong Gierveld, Feskens, & Kromhout, 1999). Interpersonal and social associates of loneliness incorporate, for instance, loss of accomplice (Aartsen & Jylha, 2011; Dykstra *et al*., 2005), decreased social exercises (Aartsen & Jylha, 2011; Daniels, Stuonisky, Pekrun, Haynes, Perry, & Newall, 2009) and a singular's poor assessment of their neighborhood (Scharf & de Jong Gierveld, 2008). The recurrence, substance, and significance of social contacts are additionally vital for loneliness (Ayalon, Shiovitz-Ezra, & Palgi, 2013; Victor & Bowling, 2012). As individuals age and have gone up against with wellbeing issues, social contacts may concentrate more on the requirement for backing, as conveyed by casual and/or formal guardians, and individuals with bigger social bolster systems have been observed to be more averse to report loneliness (Dykstra & Fokkema, 2007).

A longitudinal study by Victor and Bowling (2012) concluded that in a follow up of participants after 8 years, out of 999 participants, 583 were alive and 287 again participated and faced loneliness that is living in a community of the United Kingdom and has the age of 65+ years. Changes in loneliness were connected with changes in conjugal status, living game plans, informal communities, and physical well-being. Another factor that is very important and was ignored in this research is the psychological aspects that are associated with this feeling of loneliness such as anxiety and depression.

Loneliness among the elderly is a threat of reduced action, somatic and psychological problems and death. One of the researchers identified the correlation of communal and

sensitive loneliness in old age. The study is an attempt to have a preview of the risk factors that are attached to older people. The study focuses on the psychological factors that are developed due to loneliness and depression is one of them (Dahlberg, Anderson, McKee & Lennartson, 2015).

Loneliness may prompt genuine well-being related outcomes. It is one of the three principal elements which instigate depression and a vital reason for suicide and suicide endeavors. A research carried out by Singh and Misra (2009) concluded that depression and loneliness are thought to be the significant issues prompting hindered personal satisfaction among elderly persons. In the meantime, maturity can likewise be an open door for making new companions, growing new hobbies, finding crisp methods of administration, investing more energy in cooperation with God. It can be cheerful and winsome or unfilled and dismal depending to a great extent on the confidence and beauty of the individual included.

There is a robust and additionally firm effect of loneliness on depression than vice versa. In a study by Grygeil, Switaj, Anczewska, Humenny, Rebisz, and Sikorska (2013) it was presumed that a steady impact of loneliness on depression proposes that intercessions planning to diminish the force of the sentiment of loneliness ought to bring about bringing down the seriousness of depressive indications. The prior exact investigations demonstrated that decreasing the level of loneliness prompts a diminishment in depressive side effects measured two years after the intercession has been connected (Park, Jang, Lee, & Chiriboga, 2017).

In a 5-year longitudinal study by Cacioppo, Hawkley, and Thisted (2010) for the forthcoming relationship of loneliness and depressive indications in a populace based,

ethnically various examples of 229 men and women who were 50–68 years of age at study onset. Cross-slacked board models were utilized as a part of which the basis variables were loneliness and depressive manifestations, considered all the while. The scientists utilized minor departure from this model to assess the conceivable impacts of demographics, for example, sexual orientation, ethnicity, training, physical working, drugs, informal community size, neuroticism, distressing life's occasions, saw anxiety, and social backing on the relationship of loneliness and depressive side effect. The human requirement for social association does not blur away in middle-age and more seasoned adulthood.

Five-year cross-slacked longitudinal investigations of information from an ethnically different delegate test, demonstrate that loneliness predicts changes in depressive manifestations, and this transient affiliation is not owing to target social separation, general negative affectivity, anxiety, or social backing. Acknowledgment of the significance of loneliness as a danger element for changes in depressive side effects may be vital in alleviating its possibly pernicious.

In another study by Kim, Choe, and Chae (2009), it is concluded that one of the major motives driving individuals' internet use is to relieve psychosocial problems (e.g., loneliness & depression). This study showed that individuals who were lonely or did not have good social skills could develop strong compulsive Internet use behaviors resulting in negative life outcomes (e.g., harming other significant activities such as work, school, or significant relationships) instead of relieving their original problems. It suggests that individuals who are not psychosocially healthy (e.g., are lonely) have difficulty not only maintaining healthy social interaction in their real lives but also regulating their internet use. Moreover, these individuals end up adding additional problems to their lives besides their loneliness. The increased problems might drive them to rely more on their favorite

online activity as a means to diminish or escape from their augmented troubles, which could isolate them and increase loneliness more and then it leads to other psychological problems.

Erozkan (2011) said that attachment style plays an important role in developing loneliness which further leads to depression. The research was conducted on 652 (313 females and 339 males) university students' attachment styles bases of loneliness and depression. It was found that there is a huge relationship between attachment styles, loneliness, and depression. As indicated by this outcome, it can be said that the attachment styles are a critical element that influences interpersonal connections and decides loneliness and depression level of people. A critical relationship was likewise found in between loneliness and depression.

Cheema, Karla, and Bhugra (2010) expressed in an exploration in Pakistan on globalization finished up that as more socio-centric societies will transform into egocentric ones and they will create higher rates of mental health problems. Ganatraa, Zafar, Qidwai, and Rozi (2008) did an exploration on senior citizens in Pakistan and reasoned that there are many crucial factors that assume a part in depression in elderly folks and loneliness is one of them. Husain, Creed, and Tomenson (2000) formulated a study in Pakistani context on the predominance of depression and presumed that there is a danger of depression in an underdeveloped nation, particularly in Pakistan because of social adversity.

2.4 Locus of Control

There is another critical research on the components contributing to depression, is a locus of control. This pragmatic research establishes the relationship between locus of control

and loneliness in forecasting depression, subjective happiness, and satisfaction with life. The results of the study has shown noteworthy effects of locus of control and loneliness on the variables of the study. There is a positive relationship between locus of control and loneliness on depression, subjective happiness, and satisfaction with life (Parija & Shukla, 2013).

Rotter's (1966) idea about the locus of control alludes to the degree to which people trust they can control events influence them. Comprehension of the idea was produced by Julian Rotter in 1954 and has followed turned into a part of personality study. A man's "locus" (Latin for "spot" or "area") is conceptualized as either internal (the individuals' trust that they can control their life) or external (significance they trust their choices and life is controlled by natural components which they can't impact, or by chance or destiny). People with a strong internal locus of control trust occasions throughout their life gets principally from their own particular activities. Individuals with an internal locus of control tend to acclaim or point the finger at themselves and their capacities. Individuals with a good external locus of control tend to acclaim or accuse outer components, as the part of their problems and they may develop depressive symptoms (Carlson, McLarnon, & Iacono, 2007).

Rotter (1975) cautioned that internality and externality represent two ends of a continuum. *Internals* tend to attribute outcomes of events to their own control. People who have internal locus of control believe that the outcomes of their actions are results of their own abilities. Internals believe that their hard work would lead them to obtain positive outcomes. They also believe that every action has its consequence, which makes them accept the fact that things happen and it depends on them if they want to have control over it or not. *Externals* attribute outcomes of events to external circumstances. People with an

external locus of control tend to believe that the things which happen in their lives are out of their control, and even that their own actions are a result of external factors, such as fate, luck, the influence of powerful others (such as doctors, the police, or government officials) and/or a belief that the world is too complex for one to predict or successfully control its outcomes. Such people tend to blame others rather than themselves for their lives' outcomes. It should not be thought, however, that internality is linked exclusively with attribution to effort and externality with attribution to luck (as Weiner's work – see below – makes clear). This has obvious implications for differences between internals and externals in terms of their achievement motivation, suggesting that internal locus is linked with higher levels of need for achievement. Due to their locating control outside themselves, externals tend to feel they have less control over their fate. People with an external locus of control tend to be more stressed and prone to clinical depression.

A boundless writing spotlights on the determinants of people locus of control. In their audits of the examination, Coleman and DeLeire (2003), Gatz and Karel (1993) mention the accompanying objective facts. To begin with therapists ordinarily trust that locus of control structures amid youth and settle amid youthfulness. Second, folks can impact their kids' locus of control through their child-rearing style. Youngsters are more prone to build up an internal locus of control if their guardians energize independence and reliably utilize an arrangement of prizes and disciplines. Third, distressing life’s occasions is identified with a higher probability of having an external locus of control. At long last, despite the fact that the experimental proofs exist, it is clear that people's locus of control may develop over the life-cycle as physical and psychological changes (Coleman & DeLeire, 2003; Gatz & Karel, 1993).

A few researchers connected externality to conformity and internality to individual activity (Zawawi & Hamaideh, 2009). Conversely, the alienation model by Twenge, Zhang, and Im (2004) declared that locus of control has turned out to be more outside today because of more prominent individuation. This model spotlights on two chronicled patterns: the inclination to reprimand one's adversities on external powers, and increments in negative social pointers. It mirrors the more noteworthy negativity, doubt, and alienation of the recent generation (Pharr, Putnam & Dalton, 2000).

Correspondingly, Klonowicz (2001) mulled over the relationship between locus of control and life fulfillment in a populace of people with reactive temperaments. The information recommended that reactivity combined with outer locus of control has been all the more regularly connected with lower evaluations of subjective prosperity. Further investigation demonstrated that life fulfillment was most impacted by a locus of control as opposed to by reactivity, in this manner proposing the relative quality of locus of control belief. Outer locus of control has a positive influence towards depression.

In a cross transient meta-investigation by Twenge *et al*. (2004), inferred that the outcomes are reliable with an estrangement model placing increments in criticism, independence, and the self-serving inclination. The suggestions are consistently negative, as an externality is related to poor school accomplishment, vulnerability, insufficient anxiety administration, diminished restraint, and sorrow. It is obvious from these discoveries that external locus of control has positively corresponded with depression. At the point when a man has the external locus of control, there is solid confirmation a man will create a depression.

As indicated by Jaswal and Dewan (1997) that every one of the accomplishments of cultivated men, every human activity at last spring from the longing for control, the thought process in dominance, the need to impact changes in the earth and additionally the self. In their examination, it is clear that there exists an in number relationship between locus of control and depression. Internality is contrarily identified with depression, though externality is absolutely identified with depression.

Neuroticism assumes a part in the connection of locus of control and depression. During an examination by Clarke (2004) the impact of neuroticism as far as the "depressive paradox" (self-blame and uncontrollability existing together in depressed people) the multidimensional parts of locus of control, and suggestions for treating depression is talked about. It is expressed that externality, neuroticism, and depression were altogether strongly correlated, it was expected in the present study that externality prompts depression, as opposed to the other way around, and that depression is not a reason for neuroticism (Clarke, 2004).

In a study on Chinese women with incessant ailments, it is clear from the outcomes that internal wellbeing locus of control was connected to general self-efficacy. Results from various leveled relapse investigation showed that wellbeing control convictions did not communicate with general self-adequacy; rather, these two variables each applied their fundamental on members' negative psychological wellness status. It was found that psychological disorders were best anticipated by a low level of general self-viability and also an abnormal state of outer wellbeing locus of control. Interior wellbeing control convictions did not add to the expectation of trouble (Wu, Tang, & Kwok, 2004).

In another study Cirhinlioolu and Ozdikmenli (2012) inspected the relationship among intrinsic and extrinsic religious orientation, locus of control and depression. It is reasoned that there is a negative correlation between an extrinsic religious orientation and an internal locus of control. Age likewise has a strong association with locus of control. Schieman (2001) confirmed that individuals' locus of control transforms as they get older, they lose their feeling of control. Schieman (2001) proposes that retirement, and low levels of wellbeing, all are added to a low feeling of control. Whereas, education, marriage, money related fulfillment, and religious affiliation can all keep up an internal locus of control.

In addition, social role theory places that maturing regularly causes a loss of roles, which, thus, may undermine the feeling of control. Retirement, for instance, is a focal component of later life (Neugarten & Datan, 1996). Researchers have recently attested that retirement may have liberating or alienating consequences. The work's loss part through retirement can free people to take part in relaxed exercises (McGoldrick, 1989; Ross & Drentea, 1998).

Conversely, withdrawal from a paid occupation may undermine the feeling of personal organization. Researchers record that paid work fortifies the relationship and upgrades a feeling of control (Ross & Mirowsky, 1992). In addition, business related assignments and obligations frequently include subjective and social activities and can upgrade control. The role loss may involve dangers to the feeling of self-concept, and eventually undermine a feeling of control (Schieman, 2001) and may leads towards the feelings of depression.

It is presumed in a study conducted by Pearlin, Nguyen, Schieman, and Milkie (2007) that the effect of past conditions, on the other hand, specifically influences the present dominance of elderly individuals. The study demonstrates that life-course dominance

generally serves as the intervening channel through which people associate their past to their present. The current study is an attempt to discover fundamental variables that leads towards depression in old age. How the feelings of loneliness and the type of locus of control acts to impact the depressive feelings. Moreover, how religious convictions are moderating the association between locus of control and loneliness. Similarly, the role of demographic variables is also worth studying to get a vivid and clear picture about the potential role of independent variables (locus of control and loneliness) and moderating variable (religiosity) on the dependent variable (depression) among older population.

2.4.1 Internality and Externality Continuum

Rotter (1975) advised that there are two sorts of locus of control internality and externality that indicate the two ends of a continuum. Internals tend to credit results of occasions to their own control. Individuals who have an internal locus of control trust that the results of their activities are the consequences they could call their own capacities. Internals trust that their diligent work would lead them to get positive results. They additionally trust that each activity has its result, which makes them acknowledge the way that things happen and it relies on upon them on the off chance that they need to have control over it or not. External ascribes results of events to outer circumstances (Rotter, 1975).

Individuals with an outer locus of control have a tendency to trust that the things which happen in their lives are out of their control and even that their own behavior is an aftereffect of outside components, for example, destiny, good fortune, the impact of intense others, (for example, specialists, the police, or government authorities) and/or a conviction that the world is excessively perplexing for one, making it impossible to anticipate or effectively control its results. Such individuals tend to accuse others instead of themselves for their lives' results (Jacobs, Waddell, & Webb, 2011).

On the other hand, it ought not to be thought, that internality is connected solely with attribution to effort and externality with attribution to good fortune. This has clear ramifications for contrasts between internals and externals as far as their accomplishment, inspiration, proposing that internal locus is connected with more elevated amounts of the requirement for the accomplishment. Because of them, people having external locus of control tend to feel they have less control over their destiny. Individuals with an externals locus of control have a tendency to be more focused on and inclined to clinical depression (Brosschot, Gebhardt, & Godaert, 1994).

It is a well-accepted notion that as individuals are shifted to older age, they will turn out to be not so much internal but rather more external however, the information here has been uncertain (Lowis, Edwards & Burton, 2009). Longitudinal information gathered by Gatz and Karel (1993) infer that internality may increment until middle age, decreasing thereafter. Aldwin and Gilmer (2004) refer to Lachman's case that locus of control is equivocal. Without a doubt, there is proof here that change in the locus of control in later life relates all the more obvious to increase externality. There is evidence referred to by oskamp and Schultz (2005) recommends that locus of control increments in the internality until middle age.

Ideally, health locus of control is the measure by which individuals measure and see how individuals relate their wellbeing to their behavior, health status and to what extent it may take to recuperate from a disease (Jacobs, *et al.,* 2011). Locus of control can impact how individuals' think and responsibility towards their wellbeing and well-being decisions. Every day we are presented with potential ailments that may influence our well-being. The way we approach that categorically has a great deal to do with our locus of control. Some

of the time it is relied upon to see elderly experience dynamic decreases in their well-being, thus it is trusted that their health locus of control will be influenced.

In any case, this does not so much imply that their locus of control will be influenced contrarily yet older may experience the decrease in their wellbeing and this can show lower levels of interior locus of control. Age assumes an imperative part of one's internal and external locus of control. At the point when contrasting a youthful tyke and a more established grown-up with their levels of locus of control as to wellbeing, the more established individual will have more control over their state of mind and the way to deal with the circumstance. As individuals age, they get to be mindful of the way that occasions outside, they could call their own control happen and that different people can have control of their wellbeing results (Jacobs, *et al.,* 2011).

The literature regarding old age illustration in life satisfaction, locus of control and self-concept reveal seriously conflicting results while that on the relationships among these dependent measures has largely supported Erikson's proposals regarding the psychosocial crisis of ego integrity versus despair. A total of ninety-nine V. A. Domiciliary residents, with thirty-three in each of three age groups (50-59, 60-69 and 70+), completed measures of life satisfaction, locus of control and self-concept. Multivariate analysis of covariance demonstrated a significant age difference with the older veterans, who were less well educated and institutionalized longer, more positive on the composite of the three measures. Univariate analysis, however, resulted in significant age differences in self-concept and life satisfaction but not in locus of control. Based upon these findings and the relationships among the dependent variables, the older veterans appear to have resolved the ego integrity versus despair crisis more adequately in spite of having lived for a longer period of time in what has often been viewed as a sterile, blunting environment. Perhaps,

contrary to popular assumptions, an institution may provide an environment full of social support that facilitates and nourishes the self-esteem and satisfaction of elderly residents that may lead to decrease in geriatric depression.

In 1966, therapist Rotter proposed that our behavior was controlled by rewards and punishment and that it was these outcomes for our activities that decided our convictions about the underlying causes for these activities. Our beliefs about what causes our activities, then impact our practices and states of mind. Some hypothetical perspectives and observational evidence recommend that certain components influence the feeling of control and age is one of the elements that may do this. As a rule, speculations of the life cycle bolster the perspective that midlife is a period of expanded power, impact, and control for some individuals (Clark & Lachman, 1999). Nonetheless, research also documented those grownups in the later background lose control contrasted with younger counterparts (Mirowsky & Ross, 1992).

External locus of control has likewise been demonstrated to impair performance in later life because of depression and wellbeing issues, mischances, and other counterproductive practices. In such cases, the Health Department may need to enlist and train mental health experts for older individuals who experience the ill effects of issues of the later lives because of loss of control on their challenges. While ample of considerations have been given to the nature, reasons, and results of old individuals, feeling of control altogether fewer endeavors have been focused on towards old individual' exercises and facilities. Particularly in secluded and inconsistent loneliness that are confronted with depression. One of the main considerations of old individuals' lack of locus of control is their idleness in their later life. It is uncovered in a study by Devin, Farbod, Asadi, and Basirat (2013)

that there exists a critical contrast between dynamic and non-dynamic individuals with respect to mental health experts.

Elderly individuals who remain rationally and physically dynamic ordinarily report large amounts of wellbeing with internal locus of control (Gardner & Helmes, 1999). Individual with internal locus of control was prescient of wellbeing. Normal and moderate activity with age decreases down the middle and lessen the danger of all sicknesses by 50%. In Iranian culture, a hoisted level of physical latency has been accounted lately. While the past studies analyzing the relationship between physical movement and mental wellbeing were restricted to the youthful populace of university, this study focused on elderly individuals. As said above physical activity involvement is considered as valuable both for physiological and mental wellbeing.

In conclusion, as indicated by Zimbardo and Hartley (1985) locus of control is an identity introduction. It is a conviction about whether the results of our activities are dependent upon what we do (internal control orientation) or on occasions outside our own control (external control orientation). Locus of control is a continuum. Nobody has a 100 percent outside or inside locus of control. Rather, a great many people lie someplace on the continuum between the two extremes. In the present study also, we strive to explore the role of loneliness and locus of control in determining the level of depression among older adults. Moreover, thinking patterns based on religious orientation could play role to lessen the depression faced by older people.

2.5 Religiosity

Religiosity is a mind-boggling idea and hard to characterize for no less than two reasons. The primary reason is the instability and loose nature of the English dialect. Conversely, in Roget's Thesaurus by Lewis and Mawson (1978), religiosity observed to be synonymous with so many terms as religiousness, universality, confidence, conviction, devotion, dedication, and blessedness. These similar words reflect what investigations of religiosity would term as dimensions of religiosity, as opposed to terms that are identical to religiosity. The second purpose behind this unpredictability is that present enthusiasm for the idea of religiosity crosses a few scholarly trains, each portrayal religiosity from a distinctive vantage focuses, and few counseling each other (Cardwell, 1980; Demerath & Hammond, 1968).

Likewise, a scholar, for instance, would address religiosity from the perspective of confidence (Groome & Corso, 1999) while religious teachers could concentrate on universality and conviction. Therapists may decide to address the measurements of commitment, heavenliness, and devotion, though sociologists would consider the idea of religiosity to incorporate church participation, church membership, conviction acknowledgment, doctrinal information, and living the faith (Cardwell, 1980). This utilization of diverse terms crosswise over scholastic controls to distinguish what could be considered as like measurements of religiosity make it hard to talk about without an explicit definition from the perspective of religious training and the use of that learning to the lived experience (As cited in Holdcroft, 2006).

Modern society is described by quick industrialization and more noteworthy riches, this has not prompted more prominent joy and satisfaction, rather to increments in the levels of depression, anxiety, alienation, brutality, selfishness, threatening vibe, despair,

separation, exorbitant distinction, and loss of cordiality and feeling of the group (as cited in Plante & Sherman, 2001).

Berger (1980) focuses on secularization, as a dynamic loss of believability to the religious perspectives of reality. Accordingly, in the later decades, there has been a blast of religious recharges and expanding enthusiasm for the experiential and existential parts of religion, for example, the impacts of meditation and yoga have on the psyche, body connection, in discovering the importance and motivation behind life, and having the capacity to adapt usefully to day by day challenges (Chirban, 2001; Solomons, 2000). Moreover, Pargament, Smith, Koening, and Perez (1998) contends that all the world's religions recognize that human presence begins from condition of anguish and is a reaction to how to allay human enduring.

In the past more or less four decades, there has been an ascent in the investigation of the intuitive impacts of religion and different types of well-being. Psychology of religion is characterized as "a utilization of experimental techniques to improve our mental comprehension of religion" (Spilka, Hood, Hunsberger, & Gorsuch, 2003). A gathering of analysts has additionally inspected the relationship between religion and different parts of well-being, considering personality and social psychology variables. Notwithstanding, there is little understanding among analysts of the connection between religious orientation and depression. This is to a great extent the consequence of an absence of accord in regards to the meaning of ideas. The different meanings of the ideas of religion, religious introduction and dejection should be delineated with a specific end goal to survey their effect on examination discoveries.

2.5.1 Concepts of Religion

A mainstream view among anthropologists, sociologists, and social analysts is that human religion has a hereditary decided, characteristic premise or intuition as uncovered in the culturally diverse examination that demonstrates the comprehensiveness of religion (Batson, Schoenrade, & Ventis, 1993). Regardless of being an all-inclusive marvel, religion has diverse implications for distinctive individuals, characterized differently and halfway as far as, for instance, altruism, doctrinal orthodoxy or experiences (Spilka *et al.,* 2003). The development of religion is not uniform and one-dimensional (Masters & Bergin, 1992). Initially got from the Latin word religion, there is the contradiction in the matter of what the term initially implied superhuman force, the emotions and activities connected with the experience of this force, or rituals? Amid the ages, the term has alluded to inward devotion, to a rigid arrangement of thoughts, or was utilized as a part of a non-exclusive sense.

All the more as of late, religion has been conceptualized in the West as far as the institutional structure, embodying the adherence to the convictions and practices of the establishment, the significant and extraordinary aggregate convention and confidence, which is the introduction to the self, others and the universe that is one of a kind, thorough, focal, intricate and differing (Batson *et al*., 1993; Fallot, 1998). Moreover, specialists have had a tendency to recognize religion, religiosity, and spirituality. The implications of these terms are multidimensional and disputable, where religion has by and large come to allude to social organizations, for example, ceremonies and religious philosophy, spirituality of the individual experience of association with the otherworldly, and religiosity to the experience of sorts out religion, which is composed, individualized and identifiable (Plante & Sherman, 2001).

The effects of religious conviction on psychological health positive, with the most grounded affiliation being the connection between religious conviction and decreased depression, decrease in other psychological disorders. Religious conviction was likewise observed to be critical in helping individuals to recuperate from traumatic occasions. Religious conviction was additionally observed to be connected with a decreased probability of participating in dangerous practices, for example, liquor and medication misuse and cigarette smoking. Discoveries from the study recommend that religious discrimination may build the danger of psychiatric issue, psychiatric trouble, clinical issue and lower self-reported life fulfillment (Klocker, Trenerry, & Webster, 2011).

Religion may help patients to improve passionate change and to look after the trust, reason, and significance in his/her life (Hefti, 2011). Patients emphasize that filling a need past one's self can make it conceivable to live with what may somehow be deplorable. The study demonstrates that the result of psychotherapy in religious patients can be upgraded by incorporating religious components into the treatment convention and that this can be effectively done by religious and non-religious advisors alike. Murphy, Ciarrocchi, Piedmont, Cheston, Peyrot, and Fitchett, (2000) found that larger amounts of religious conviction were identified with lower levels of depression and hopelessness.

Religious convictions and practices add to conditions of prosperity, good faith, positive illusions, sensible trust that shares innovative and dynamic vision and activity, the capacity to set and accomplish objectives, give reasons and intending to both positive and negative occasions, fulfillment and bliss, which has a beneficial outcome on mental wellbeing. The religious association may lessen social stresses, upgrade social assets, lower dysphoria, advance positive self-discernments and give a general feeling of soundness (Koenig & Cohen, 2002).

Eliassen, Taylor, and Lloyd (2005), explored that relationship exists between religiosity and depression. Growing accord religious duty and practice can be valuable to physical and mental prosperity (McCullough & Larson, 1999, Strawbridge, Shema, Cohen, & Kaplan, 2001). These confirmations focus to helpful impacts of religiosity. The religious association has been indicated to be a vital indicator of mental pain specifically. Late research has connected parts of religious contribution to a wide cluster of well-being results.

Pearce, Little, and Perez (2003) analyzed the relationship between religiosity and depression and demonstrate that few measurements of religiousness are connected with lower levels of depressive indications (i.e., Participation, self-positioning, and constructive interpersonal religious experience), while the interpersonal religious experience was connected with more elevated feelings and moods. Ismail and Desmukh (2012) found that that there exists a positive relationship between the two components i.e. religiosity and mental prosperity.

Hence, in the light of the above evidences it has become evident that the religious practices are vital in monitoring the level of depression among elderly as moderator. Furthermore, in the present study, religious exercises are assumed as a critical part in directing the level of despondency among older individuals in Pakistani society.

2.5.2 Religiosity and Geriatric Depression

Psychological well-being has a positive relationship with religiosity and more profound sense of being (Ismail & Desmukh, 2012). Mental wellbeing is connected with the characteristics of wellbeing that may emerge from profound improvement, euphoria, peace, happiness and clear life reason (Canda & Furman, 2009). Mental wellbeing instills

the capacity to be strong even with life's difficulties (Rogers, 2009). Moreover, religion is self-serving, incognito thought processes, for example, solace and security, companionship, status, or social support for the maturing populace (Ryckman, Thornton, Borne, & Gold, 2004). Elderly patients with an elevated amount of characteristic religiosity and otherworldly wellbeing and have found to have larger amounts of trust, positive state of mind and personal satisfaction (Fehring, Miller, & Shaw, 1997).

Mental Disorders, Religion and Spirituality have a close connection with one another. It is demonstrated by the empirical study by Bonelli, Dew, Koenig, Rosmarin, Vasegh (2012) that stated that religious association corresponds with better psychological well-being in the zones of depression, substance misuse, and suicide when contrasted with different issues. Psychological well-being has a direct impact on the idea of religiosity. In a Meta analytic exploration by on religiosity and psychological well-being, Hackney and Sanders (2003) uncovered that the meanings of religiosity and psychological well-being used by therapists in this field were for sure connected with distinctive sorts and qualities of the relationships between religiosity and psychological well-being. Furthermore, religiosity assumes an essential part in lessening depression. It is demonstrated with the examination by Melgar, Neuman, and Rossi (2012) on the effect of religion and religiosity on depression. It is proved that religiosity may influence life decisions or judgments of backgrounds, with implication for psychological well-being. Depression has a maintained effect on the personal satisfaction and bliss.

In conclusion, research into a connection between religiosity and depression was neglected in scientific circles until now. The significance of religion to the patients and its potential effect on the awful issue on their lives, in any case, makes this an element that can't be overlooked. Along these lines, the religiosity part is critical to the mental health of older

individuals. Therefore, the main aim of the present study is highlighting the moderating role of religiosity in the mental health of the old individual that is overlooked by many previous researchers, as the focus of previous researchers was on the direct relationship of religiosity with depression. But the present study focus on its moderating effect on older people depression.

2.6 Research Framework

The research framework of the study was developed to conclude the literature review discussion on depression among old people as explained in earlier section. In the light of the argument in the literature review, a hypothetical model was developed to answer the research questions. In line with the literature review and the subsequent theoretical gaps identified above, research framework of the current research has been created. In specific terms, the theoretical research framework was designed to illustrate the variables incorporated into this research find their association to identify their effects on geriatric depression in Pakistan. Figure 2.1 relates to the research framework pictured for the present study.

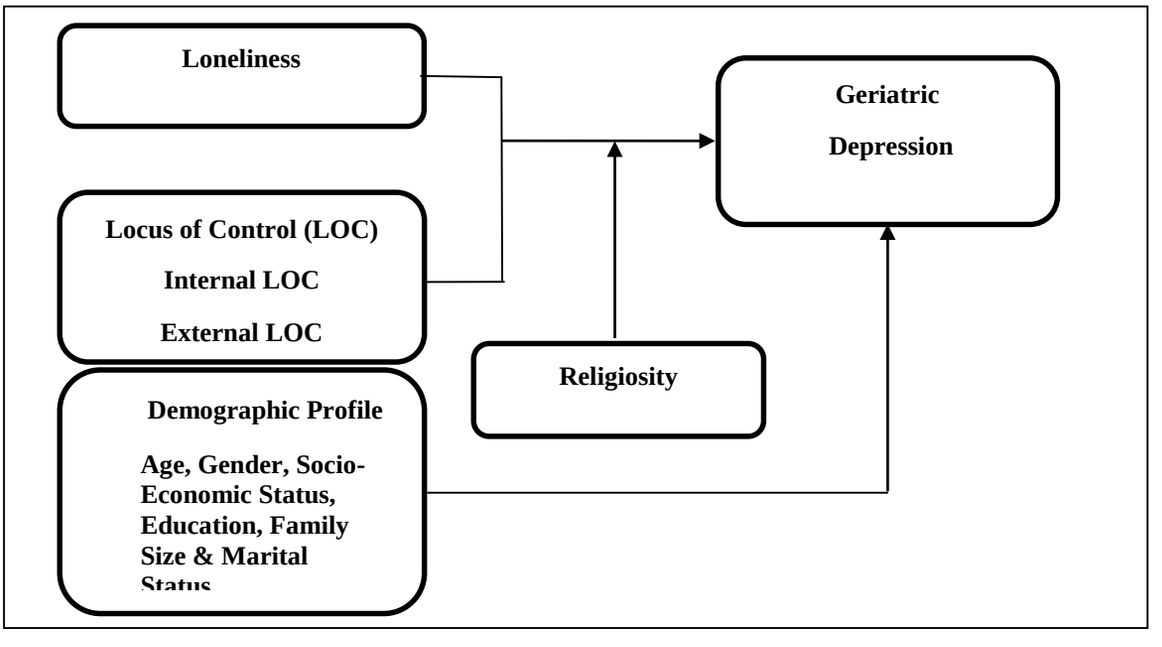

Figure 2.0.1. Research Framework

The present framework, discuss the variables selected in the present study. In this study, the dependent variable is depression and locus of control, loneliness and demographic variables are independent variables while religiosity is a moderator. Nevertheless, different researchers investigate the relationship between different variables with depression. So, the present framework is consistent with the previous findings (Baskin, Wampold, Quintana, & Robert, 2010; Wei, Shaffer, Young, & Zakalik, 2005; Ngcobo & Pillay, 2008; Qualter, Brown, Munn, & Rotenberg, 2010).

In the present research, Beck cognitive theory of depression was used. According to this theory, cognitive distortion contributes towards thinking pattern of elderly. In this respect cognitive behavior theory plays an important role in the present research as the cognitions of old people will lead them to depression in old age, i.e. their sufferings, losses and failures. Since, the percentage rate of prevalence of depression among the elderly is 22.9% among other mental disorders. So, that's why there was a need to study on this issue (Gadit & Mugford, 2007).

There have been a few studies from a Pakistani perspective that try to establish a link between depression and its corresponding causing factors. Researchers like Batool, Abbasi, and Zafar (2008), Jadoon, Munir, Choudhry, Yaqoob, Shehzad, Bashir, and Arshad (2009), Muben, Henry, and Qureshi (2012), Ismail, Dar, and Suria (2006), Prasla, (2012). Patel and Kleinman (2003) stated that in developing countries, especially in Pakistan due to poverty there is the straight and unforeseen expenses of psychological ill-health that deteriorate the monetary situation, setting up an endless loop of poverty and psychological illness (Gadit & Khalid, 2002).

2.7 Hypotheses Development

In the light of the above literature review the following hypotheses have been developed.

2.7.1 Loneliness and Geriatric Depression

Many researchers have found that one of the searched factors causing depression is prolonged loneliness (Boivin, Hymel, and Burkowski, 1995; Prinstein & Greca, 2002). This prolonged loneliness leads to depression after some passage of time. Likewise, Baskin, *et al.,* (2010) conducted a research in the U.S. which indicated loneliness. There are researchers in which it is proved that prolonged loneliness indicates depression from early/middle childhood to adolescence. Thus, it is clear from the researchers mentioned that prolonged loneliness directs towards depression in old age (Qualter, *et al*., 2010; Cacioppo, Hawkley, & Thisted, 2010; Wei, Shaffer, Young & Zakalik, 2005).

A remarkable research conducted by Lasgaard, Goossens, and Elklit (2011) assessed loneliness, depression and suicidal ideation among young adults. As studied in many researches that loneliness and depression are correlated with each other. In this research at the cross-sectional level, similar results were created as said before. One more thing was originated that loneliness does not cause any suicidal ideation. This study also reported that gender does not foresee loneliness, depressive symptoms, or suicidal ideation across time.

More significantly two important variables loneliness and depression were discussed in the above-mentioned research which supported the current conducted research. This research predicted the similar concept that early age, loneliness cause depression in later years. This longitudinal study was conducted on children who were dissatisfied with their family, relatives, and peers and this scenario would lead to loneliness, and loneliness causes depressive symptoms or any of the emotional problems in later years (Qualter, Brown, Munn, & Rotenberg, 2010).

Various studies were conducted in different scenarios such as Lasgaard *et al.*, (2011), Qualter, *et al.,* (2009), Springer, *et al.,* (2003). The basic focus of this research was on young people. This research was performed to assess that belongingness help in

minimizing loneliness and depression. Information was gathered from socially and ethnically different schools. Results showed that belongingness and associate acknowledgment play a pivotal reciprocal role of loneliness and depression. Sense of affiliation and belongingness decrease the feelings of loneliness and therefore, lowers down the depression. The research supports the current study, which was conducted by Baskin, Wampold, Quintana, and Enright (2010).

Whereas, the research quoted here was conducted in Africa by Ngcobo and Pillay (2008) on women. A common observation depicts that due to some external factors depression comes into sight. Females are sensitive enough, to become an easy victim of depression. This study took a sample of African ladies who were supposed to be more depressed due to the atmosphere and insecurity. The results illustrated that the level of depression was higher in African ladies due to many reasons like impoverishment, congestion, unemployment, the abnormal amount of wrongdoings, absence of administration, and sexual misuses. Establishing good health care services may reduce the prevalence of depression in African women Cohen and Shamus (2009) stated in a research on depressed people. The present study focuses on the relationship between mental and physical health. It was found in this research that physical exercise has a good effect on the psychological well-being of a person.

Another research on the relationship between loneliness and depression by Weeks, Michela, Peplau, and Bragg (1980) supported the previous concept that depression and loneliness occur together and they are linked to each other. The sample of 333 students was analyzed and the results suggested that depression and loneliness are linked with each other but both are separate entities. The students were assessed for 5 weeks and the results were firm, both variables loneliness and depression related to each other.

The outcomes of the research conducted by Qualter, *et al.,* (2010) proposed that continuous peer related loneliness during childhood leads to a continuous interpersonal stressor that inclines kids' youthful depressive symptoms. Additional same exploration on adults by Wei, Shaffer, Young, and Zakalik (2005) emphasized that attachment, shame, depression and loneliness put forth the role of psychological needs satisfaction and demonstrate link among attachment avoidance, shame, loneliness, and depression.

Loneliness in old age creates many problems and depression is one of them. Many types of research focus on this phenomenon due to globalization. Researchers expressed in an exploration on depression in Pakistan inferred that in senior age depression increases because of loneliness. Since youthful ones did not offer a time to their senior citizens (Cassum, 2014). Hence, the researcher proposes the first hypothesis:

$H_1$1: There is an effect of loneliness on depression.

Henceforth, based on existing literature Table 2.5 presents the relationship between loneliness and geriatric depression.

Table 2.5

The relationship between loneliness and geriatric depression

No	Author	Sample	Result
1	(Bien & Barkowska, 2016)	555 geriatric inpatients	Higher level of SEH was positively correlated with a lower BMI, improved instrumental activities of daily living and higher hemoglobin level.
2	(Pynnonen, Tormakangas, Rantanen, Tiikkainen, & Kallinen, 2018)	223 old people from San Diego CA USA	Number of depressive symptoms remained unchanged, while loneliness and melancholy decreased in both the intervention and control groups during the study.
3	(Elias, 2018)	252 old people in US.	The results indicated that the prevalence rates of loneliness (56% to 95.5%), anxiety (3.6% to 38%), and depression (11% to 85.5%) in older people living in long-term care settings are generally high.
4	(Santini, Fiori, Tyrovolas, Haro, Feeney, Koyanagi, & 2016)	6105 adults aged > 50 years in Ireland	Social network integration was inversely related to depressive symptoms for men. Loneliness significantly mediated most associations.
5	(Hegeman, Schutter, Comijs, Holwerda, Dekker, Stek, & Mast, 2018)	477 older adults in the Netherlands	For women only, there was an association between loneliness and cardiovascular disease. However, this association was explained by depression, indicating that loneliness in its own right seems not related with cardiovascular disease.
6	(Lam, Yu, & Lee, 2017)	Respondents are 100 community-dwelling older adults in Hong Kong.	Results indicated that married participants reported lower levels of perceived loneliness. The findings suggest that perceived loneliness combined with depressed mood is related to poorer general cognitive status in older adults.
7	(Brittain, Kingston, Davies, Collerton, Robinson, Kirkwood, & Jagger, 2017)	132 old people from Newcastle, England	The findings show that loneliness is a minority experience in the oldest old but is strongly driven by length of widowhood, challenging the notion that loneliness in later life is a static experience.

2.7.2 Locus of Control and Geriatric Depression

It is assumed that the relationship between locus of control and depression is interlinked. As different studies put forth that locus of control and depression have a significant relationship with each other (Khan, Saleem, & Shahid, 2012). Locus of control is a belief of an individual about the events or situations around them. The internal locus of control individuals feels that they have control over their circumstances. These individuals feel happier, freer, and less stressful. In contrast, the individuals with an external level of locus of control feel helpless of their external events. They are more vulnerable to depression

and other health issues. They have a tendency to keep themselves in a situation where they have stress, feelings of helplessness, shame, grief and anxiety and resultantly these feelings lead to maladjustment.

The external locus of control people feels that they do not have any control over their circumstances and on the external environment. In a research performed on elderly people, finding of the study examined depression, anxiety and locus of control in elderly suffering from dementia. Dementia is a psychological disorder marked by memory disorders, personality changes, and impaired reasoning. The data of the elderly was collected from various nursing homes. It was concluded that elderly suffering from dementia have experienced depression and have the external locus of control. Also, it was determined that the more depressed the elderly were, the higher their anxiety and external locus of control level. The research signifies a positive correlation between depression, anxiety, and locus of control (Khairudin, Nasir, Zainah, Fatimah, & Fatimah, 2011).

A major study is conducted by Mohammad (2013) on the locus of control and depression in high school students. Results showed a positive correlation between external locus of control and depression. Female's internal locus of control and depression has a strong negative relation as compared to males. Results reveal that level of locus of control affects the level of depression. It was also predicted that females having an internal locus of control have low levels of depression.

Various studies have been conducted to see the connection between locus of control and depression in Pakistan. Bhamani, Karim, and Khan (2013) led an examination of Pakistani University students and inferred that locus of control and mental wellbeing has a positive correlation. Zaidi, Mohsin, and Saeed (2013) expressed in an examination presumed that men have a higher internal locus of control and women have a high external locus of control. Ghumman, Ghumman, and Shoaib (2013) in an examination expressed the

significant relationship of locus of control and depression on life in the Pakistani context. Ahmad and Zadeh (2015) led an exploration and inferred that locus of control have a critical influence on the cognitive thinking of a person.

However, Munir, and Sajid (2010) did an exploration in Pakistan on organizational responsibility and presumed that locus of control have a critical effect on authoritative duty. Khan, Saleem, and Shahid (2012) expressed in an examination on the locus of control in Pakistan. It was determined that it influences at the distinctive level of a person's capacities.

Karim, Saeed, Rana, Mubashir, and Jenkins (2004) developed The World Health Organization Assessment Instrument for Mental Health Systems (WHO-AIMS). The main purpose of the development of the instrument was to see the state of psychological well-being in Pakistan. It was concluded that the facilities provided in Pakistan for mentally ill people were limited. It is not fulfilling the requirements of the mentally-ill people. Whereas, Khalily, (2011) present a report on the improvement of mental health in Pakistan and reasoned that mental health facilities are extremely poor in Pakistan. Irfan (2011) directed an exploration on psychological well-being in Pakistan and concluded that it has not been given the same significance as physical wellbeing in many parts of the world. Pakistan, a lesser center salary nation, costs just 0.4% on a well-being plan of psychological wellness. It is cited as an illustration. Haq, Iqbal, and Rahman (2008) composed a publication on the idea of mental wellbeing in Pakistan and reported that the mental well-being idea has been changed in the most recent few years. Hence, the researcher comes up with these hypotheses.

$H_1$2: There is an effect of locus of control on depression.

$H_1$2a: There is an effect of internal locus of control on depression.

$H_1$2b: There is an effect of external locus of control on depression.

$H_1$2c: There is an effect of powerful others locus of control on depression.

Thus, based on existing literature Table 2.6 represents the relationship between locus of control and geriatric depression

Table 2.6

The relationship between locus of control and geriatric depression

No	Author	Sample	Result
1	(Aarts, Deckx, Abbema, Heijnen, Tjan, Akker, & Buntinx, 2015)	1317 participants from Netherlands	the internal health locus of control was associated with higher and the external 'powerful others' locus with lower risk of depression.
2	(Bjorklof, Engedal, Selbæk, Maia, Coutinho, & Helvik, 2016)	144 depressed in-patients from seven psychogeriatric hospital units in Brazil	Compared with the non-depressed old persons, the depressed hospitalized older persons were characterized by perceptions of less personal control, and less use of problem-focused strategies.
3	(Aflakseir & Mohammad, 2016)	Sixty-six men and 42 women from Iran	The components of health locus of control such as chance and powerful others as well as age did not predict depression.
4	Helvik, Bjorklof, Corazzini, Selbæk, Laks, Ostbye, & Engedal, 2016)	144 depressed inpatients from seven psychogeriatric hospital units in Norway and 106 community-living older adults without depression	One aspect of coping (LOC orientation) was associated with HRQOL in both depressed and non-depressed older adult samples, and therefore may be an important target for intervention for both groups.
5	(Bjorklof, Engedal, Selbæk, Maia, Borza, Benth, & Helvik, 2018)	122 patients in Brazil	LoC and depression at baseline were associated with the prognosis of depression at follow-up, and may further be studied as indicators for choice of baseline intervention strategies.
6	(Yeoh, Tam, Wong, Bonn, & 2017)	Total of 728 adults from three Malaysian states	10% of respondents reported experiencing severe levels of depressive symptoms, 11% reported moderate and 15% reported mild depressive symptoms indicating that Malaysians are experiencing high levels of emotional distress.

2.7.3 Religiosity as a Moderator

Religious practices have played an important role in reducing various symptoms of depression. Religion may reduce vulnerability towards depression with the use of many psychosocial mechanisms. There are ways and strategies in which religion has a vital role in depression. The foremost and most important factor is substance abuse. Evidence

suggests that religious involvement reduces the use of drugs such as tobacco and alcohol (Kendler, Liu, Gardner, MacCullough, Larson, & Prescott, 2003).

Social support is also regarded as a necessary factor. Religious involvements may support people in their social contacts that further lead to prevent individuals from depression (Koeing, MacCullough, & Larson 2001). As the person becomes religious he/she has the view that all the circumstances of life are controlled by a higher power and they considered it an exam and thus lower their chance of developing depression due to stressful life events. So, the positive appraisal of events may protect the individual from depressive symptoms (Murphy, *et al.,* 2000). These factors illustrate that religiousness may protect a person against depression by changing their negative thoughts to their positive thoughts (McCullough & Willoughby, 2009).

Different researchers proposed that the religious discrimination has a positive effect in developing anxiety and depression. With the increase in religious orientation, there is a decreased level of depression. As a person becomes religious, he/ she has to spend time in religious activities and developed a sense of affiliation with the community and got support from the religious group thus in old age when people are lonely and have difficulty in maintaining relationships with peer, then this religious participation would create a sense of belongingness and old people feel connected in their old age (Klocker, Trenerry, & Webster, 2011).

Moreover, Koenig, George, and Peterson (1998) stated that among clinically depressed elderly, natural religiousness was emphatically connected with the rate with which people's depressive scenes subsided, even in the wake of controlling for an assortment of potential perplexes. Analysts of the general writing on religion and depression (e.g., McCullough & Larson, 1999; Koenig & Larson, 2001; Smith, McCullough, & Poll, 2003) have come to comparable conclusions.

On the other hand, few latest prominent studies (Braam, Van den, Eeden, Prince, Beekman, Kivelae, Lawlor, & Mann, 2001; Koenig, George, & Peterson, 1998; Murphy *et al*., 2000) demonstrate that some definite characteristic of religiousness (e.g., public religious contribution, intrinsic religious inspiration) may be contrarily identified with depressive side effects with more noteworthy religious inclusion connected with fewer side effects of depression. Also, Braam *et al*., (2001) reported that public religious contribution (viz., church participation) was conversely identified with depression among older people from European nations. After reviewing the literature several gaps have been identified which are these, the previous researchers overlooked the study of depression in elderly people, especially in Pakistan. The importance of religiosity as a moderator was neglected in the previous studies. The role of locus of control was not studied with depression in older people of Pakistan. Hence, the researcher comes up with these hypotheses.

H_I3: There is an effect of moderator religiosity on the impact of loneliness on depression.

H_I4: There is an effect of religiosity on the impact of locus of control on depression.

H_I4a: There is an effect of religiosity on the impact of internal locus of control on depression.

H_I4b: There is an effect of religiosity on the impact of external locus of control on depression.

H_I4c: There is an effect of religiosity on the impact of powerful others locus of control on depression.

Based on existing literature Table 2.7 represents the moderating role of religiosity between independent variables and geriatric depression.

Table 2.7
Moderating role of religiosity between independent variables and geriatric depression

No	Authors	Sample	Result
1	(Karim, Bibi, & Aftab, 2016)	European Social Survey (N= 21621)	Faith and involvement in religious activities act as a personal resource, making individuals more resilient to cope with the challenges arising from work life imbalance.
2	(Walker, Salami, Carter, & Flowers)	Sample of 236 African American men and women	Reported that low levels of religiosity and the mediated effect of depression was significant.
3	(Hamidu, Haron, & Amran, 2018)	164 respondent from Nigerian financial sector	With the role of religiosity as a significant moderating factor managers are expected to align CSR activities with accepted religious values that instill hard work, trust and assistance to stakeholders.
4	(McDougle, Handy, Konrath, & Walk, 2014)	the National Survey of Midlife Development in the United States (n = 1,805)	Individuals who were actively engaged public forms of religious practices and who volunteered, maximized the associated health benefits
5	(Greeson, Smoski, Suarez, Brantley, Ekblad, Lynch, & Wolever, 2015)	322 adults from Canada	Moderation analyses revealed no significant differences in the change in depressive symptoms following MBSR as a function of spirituality, religiosity, trait mindfulness, or demographic variables.
6	(Ahles, Mezulis, & Hudson, 2016)	320 undergraduates from a small, private Christian university	Results indicated that negative religious coping moderated the relationship between stress and depression, but only for those who reported high levels of religious commitment.

2.7.4 Demographics and Geriatric Depression

It is presumed that the relationship between demographic variables and geriatric depression is interconnected. As different researches focused that demographic variables that is gender (GEN), age (AGE), education (EDU), family size (FS), marital status (MS), number of children (NOC) and socio economic status (SES) may have a significant role.

2.7.4.1 Gender (GEN)

Masten, Cadwell, Williams, Jerome, Mosby, Barrios, and Helton (2003), have revealed the impact of gender (GEN) on male and female attitudes and their personalities due to the gender differences in old people depression. It has been seen that the people living in developing countries may have faced the stress, acculturation, sex-typed personality characteristics, and suicidal ideation along with depression. This view is also supported by

Black, Roberts, and Li-Leng (2012) and Ryba and Hopko (2012) who found that gender difference may exist on the level of depression in old age people.

$H_1$5a: There is an effect of gender on depression.

2.7.4.2 Age (AGE)

Age (AGE) plays a vital role in women facilitation. It invokes implication of control and regard. It has been seen that family differences are often resolved by elder family members, who have the experience, knowledge and understanding that comes with old age, as is usually assumed (Weiss, Nelson, Tew, Hardt, Mohile, Owusu, & Ramani, 2015). Aging and depression are interconnected. The gross outcome of aging process, aging itself, could be depressive. The reason behind is that the social networking of people restricted as their peers die (Fiske, Gatz, & Pederson, 2003).

$H_1$5b: There is an effect of age on depression.

2.7.4.3 Education (EDU)

Education (EDU) brings knowledge and responsiveness in a person. The country cannot be economically, socially, and politically enlightened without educated nation. Education has been found to be one of the strongest demographic variables in predicting individuals' health status. It is an important risk factor in the occurrence of depression among the elderly. Older adults with a low level of education are at risk for depression (Chou & Chi, 2005). Although several explanations have been given, the education-depression relationship is still not well understood. This is especially true in developing countries like China where the elderly population has a low educational level. Hence the researcher comes up with the following hypothesis.

$H_1$5c: There is an effect of education on depression.

2.7.4.4 Family Size (FS)

A family size (FS) is used to determine the number of members living in a particular household. In this modern world change in the traditional style of living from extended family to nuclear family leads to depression in old age. The traditional sense of duty and obligation of the younger generation towards their older generation is being eroded. The older generation is caught between the decline in traditional values on one hand and the absence of adequate social security system on the other (Marpady, Jyothi, & Singhe, 2012). Thus, the researcher derives with this hypothesis.

$H_1$5d: There is an effect of family size on depression.

2.7.4.5 Marital Status (MS)

The marital status (MS) has been considered as an important contributing factor in increasing depression among elderly. Similarly, Lapierre, (2009) has viewed that married individuals experienced fewer depression symptoms then the previously married (including the remarried) the never married and cohabiters. Moreover, from previous empirical studies it is evident that difference in depressive symptoms exists by gender and marital status (Simon, 2002). Thus from the previous literature the researcher develops this hypothesis.

$H_1$5e: There is an effect of marital status on depression.

2.7.4.6 Number of Children (NOC)

Parenthood is central to a meaningful and fulfilling life, and that the lives of childless people are emptier, less rewarding, and, in old age, lonelier, than the lives of parents (Hansen, Slagsvold, & Moum, 2009). Health declines rapidly among this age group, triggering the need for social support and potentially elevating the value of children as a

source of that support (Zhang & Hayward, 2001). Therefore, keeping in mind the importance of Number of Children (NOC) in old age the following hypothesis.

$H_1$5f: There is an effect of Number of Children (NOC) on depression.

2.7.4.7 Socio Economic Status (SES)

Low socio-economic status, particularly when assessed by indices of material standard of living, is consistently associated with a higher prevalence of depression in cross sectional studies (Lorant, Deliege, Eaton, Robert, Philippot, & Ansseau, 2003). Similarly, Christopher and MacDonald (2005) also emphasized on the negative relationship of socioeconomic status (SES) with mental illness. The lower the socioeconomic status (SES) of an individual is, the higher is his or her risk of mental illness. Hence from the above literature, the researcher arises with the following hypothesis.

$H_1$5g: There is an effect of socioeconomic status (SES) on depression.

2.8 Underpinning Theory

This investigation tries to hold up substantive input to strengthening three theories namely Cognitive Behavioral Model of Depression, Beck's Cognitive Theory of Depression and Cognitive Behavior Therapy Treatment for Depression. The structure chains these theories to promote geriatric depression through the use of loneliness, locus of control and religiosity.

2.8.1 Cognitive Behavioral Model of Depression

Aaron T. Beck is mostly considered as the father of cognitive therapy. His work in the ranges of acknowledgment and treatment of depression has increased overall reputation. Beck (1979) advances three notable focuses with respect to his thinking for the treatment of depression by the method for treatment and antidepressants versus utilizing a pharmacological approach just (Barlow, 2014).

In spite of the effective utilization of antidepressants, the actuality remains that not all patients react to them. Beck refers to (in 1987) that just 60 to 65% of patients react to antidepressants, and late meta-examinations (a measurable breakdown of numerous studies) demonstrate fundamentally the same numbers (as cited in Grohol, 2009). Large portions of the individuals who react to antidepressants wind up not taking their drugs, for different reasons. They may create symptoms or have some type of individual complaint to taking the medications.

Furthermore, Beck (1987) said that the utilization of psychotropic medications may prompt an inevitable breakdown in the singular's ways of dealing with stress. His hypothesis is that the individual basically gets to be dependent on the solutions as a method for enhancing the state of mind and neglects to rehearse those adapting strategies commonly hounded by solid people to ease the impacts of depressive side effects. By neglecting to do as such, once the patient is weaned off of the antidepressants, they frequently are not able to adapt to ordinary levels of depressive temperament and feel headed to reestablish utilization of the antidepressants (as cited in Beck, 2000).

Beck at first centered around depression and added to a rundown of "mistakes" in imagining that he proposed could look after the depression, including arbitrary inference, selective abstraction, over-generalization, and magnification (of negatives) and minimization (of positives) thoughts. As per Beck's hypothesis of depression, depressed individuals procure a negative diagram of the world of youth and immaturity and young people who experience gloom obtain this contrary blueprint prior. Depressed individuals get such constructions through lost a guardian, dismissal by companions, tormenting, feedback from educators or folks, the depressive state of mind of a guardian and other negative occasions. At the point when the individual with such outlines experiences a

circumstance that looks like the first states of the scholarly blueprint somehow, the negative patterns of the individual are enacted (Neale & Davison, 2001).

Beck's 1987 (Neale & Davison, 2001) negative triad holds that depressed individuals have negative considerations about themselves, and their encounters on the planet, and the future (Beck, 1979). Beck also identified a number of other cognitive distortions, which can contribute to depression, including the following: arbitrary inference, selective abstraction, overgeneralization, magnification and minimization (Neale & Davison, 2001).

Consequently, as indicated by cognitive behavioral hypothesis, depressed individuals think uniquely in contrast to non-depressed individuals, and it is this distinction in imagining that makes them get to be depressed. Depressed individuals have a tendency to misjudge certainties in negative ways and point the finger at themselves for any mishap that happens. This contrary intuition and judgment style capacities as a negative inclination, it simple for depressed individuals consider circumstances to be as a rule much more awful than they truly are, and builds the danger that such individuals will create depressive side effects in light of distressing circumstances. Hence it shows that older people who are habitual of practicing religious conviction feels low levels of loneliness and thus exhibit declined level of depression. The vicious cycle goes on and depressed individual again faces negative thinking due to lack of religious orientation.

2.8.2 Beck's Cognitive Theory of Depression

Indeed, distinctive cognitive behavioral scholars have built up their own special turn on the cognitive state of mind. As mentioned by Beck (1979) negative contemplation, created by breaking convictions is regularly the essential drivers of depressive side effects. There is a positive relationship between the sum and seriousness of somebody's negative

contemplation and the seriousness of their depressive manifestations. At the end of the day, the more negative considerations one experience, the more depressed he/she will get to be.

Past the negative substance of broken contemplations, these convictions can likewise twist and shape what somebody pays consideration on. Beck, (1979) affirmed that depressed individuals give careful consideration to parts of their surroundings that affirm what they definitely know and do as such notwithstanding when confirmation in actuality is directly before their noses. This inability to focus appropriately is known as faulty information processing.

Besides, faulty information processing is the normal for depressed personality. They have a tendency to amplify the significance and importance set on negative occasions, and minimizes the significance and meaning of positive occasions. These moves, which happen unwittingly, to keep up the depressed individual's center negative patterns notwithstanding opposing proof, and permit them to remain feeling sad about the future notwithstanding when the confirmation proposes that things will show signs of improvement. Therefore, Beck cognitive Model of Depression is based on schemas that are negative triad about the self, the world, and the future. Thus, the present research used Beck's cognitive triad to explain the conceptual model of the research. The fear and thoughts about the future as they are growing old and feeling of loneliness due to failure to have a social activity because of fewer resources as they grow old. Negative thoughts about the world, meaning they may come to believe they do not have control over their circumstances and ultimately they develop depression.

Often time's feelings of inferiority are the result of the depressive's demanding expectations of him or herself and there is a direct relationship. *Fig: 2.2.* Beck Cognitive Triad, (1979) between depression, loneliness and poor mental health (Bilsky & Schwartz, 1994; Siddique, Anwer, & Perveen, 2009). As stated above, religious convictions are hope

and optimism and thus rescue the individual from formulating depressed and negative thoughts.

In the current study, religiosity as the moderator prevents the individual to think negative and pessimistic about future, relationships and own self. In conclusion, it is evident from the above literature that when individuals get older, the probability of encountering age-related misfortunes increments. Such misfortunes may block the support or procurement of wanting connections, bringing about a higher occurrence of loneliness, loss of over circumstances. Numerous individuals experience depression either as an aftereffect of living alone, demise of a life partner, an absence of close family ties, mental and sociological factors, decreased associations with their way of life of root or a failure to effectively take an interest in the neighborhood group exercises and depression is considered as a normal part of aging.

At the point when this happens in the blend with physical disabilities, dampening and depression are normal backups. The negative impact of loneliness on wellbeing in maturity has been accounted for by researchers (Azam, Yunus, Ahmad, Ghazali, Ibrahim, & Maniam, 2013; Baldwin, Chiu, Katona, & Graham, 2002; Lim & Kua, 2011; Henriksson, Marttunen, Isometsa, Heikkinen, Kuoppasalmi, & Lonnqvist, 1995, Stek, *et al*., 2005; Mitchell & Subramaniam, 2005). However, in order to avoid that, mental health professionals of Pakistan must consider few significant anteceding predictors that influence depression in old age, however, the accompanying perspectives require unique consideration, keeping in mind the end goal to guarantee a right conclusion.

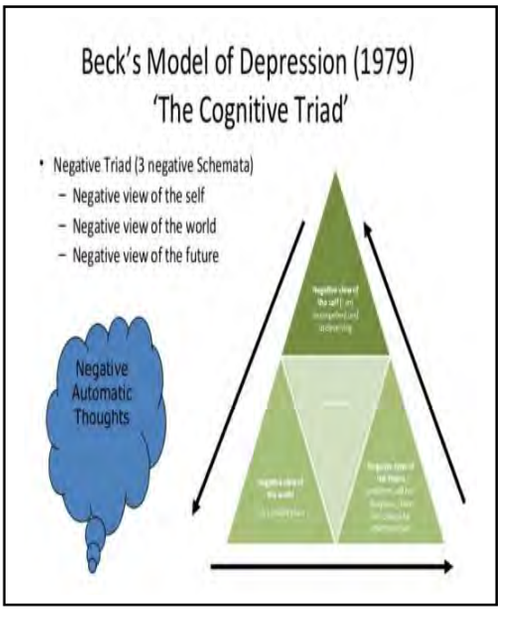

Figure 2.1. Beck Cognitive Triad

The vicinity of comorbidities of mood, psychotic

symptoms, hypochondriasis, anxiety, somatic symptoms masks and overlaps the depressive state. Overall, few variables add to the onset of depression in seniority, so we can affirm that it is a truly a multifactorial ailment. Furthermore, the closed and uncommunicative lonely older people in Pakistan and the strenuous and stressful working condition gave an extreme impact on old age depression. So, the environment should be helpful for them and they feel comfortable in their later lives. But their self and their perception were judged as highly positive as they were able to cope up with their difficulties and remain well in their older life. Undoubtedly, the importance of depression studies was hereby underlined by different perspectives. Nevertheless, a depression study focusing on cognitive approach was clearly lacking due to the scarcity of depression in old age in the literature within Pakistani context. Therefore, the present study fulfilled the geriatric depression knowledge gap in particular within the Pakistani context.

2.9 Chapter Summary

This chapter explains conceptualization, relationships, and dimensions of the key variables of the study based on the previous studies. Reviews of the existing literature on the geriatric depression are also discussed. In this chapter, past studies related to the impact of loneliness, locus of control and religiosity are discussed as well as the extent to which these variables are linked to geriatric depression. Additionally, the chapter discusses the theoretical underpinning theory that is Cognitive Behavioral Model of Depression as supporting theory which led to the formulation of hypotheses to answer the research questions. The next chapter elaborates the discussion with reference to the measurements, and research methodology of the present study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The focus of this chapter is the discussion on the research design and sample of study that were utilized in order to achieve research objectives as mentioned in Chapter one. Basically, the present chapter is a thorough discussion, according to four main sections, namely (i) the research methodology to elucidate the rational idea of the core of the research methods employed; (ii) the research design and procedures (iii) the conducted research activities (iv) the data analysis process.

Research philosophy in social sciences suggests various assumptions of research approach standards and criteria to generate reliable and valid information about the social phenomenon under investigation. Generally, social scientists will assess the best approach that could generate reliable and valid information about the social phenomenon under investigation (Pargament, Smith, Koenig, & Perez, 1998). This research stood on the objectivist's viewpoint where the knowledge already existed. Thus, this research sought to extend and re-evaluate existing theoretical human wellness at high-risk in old age. In doing so, research hypotheses were developed, explored and tested. Given the fact that this study focused on testing established theories, the results therefore could be used to conclude whether there were similarities, differences, strengths and limitations as with the existing theories or studies.

Quantitative research method is deemed more appropriate and selected for this research. The correlational study was used to test the theory-driven model through multivariate statistics analysis in the present research such as hierarchal regression. The main reason to

choose a quantitative method with the cross-sectional correlational survey design is used to fulfill the requirement of the degree of generalization of results. This is a descriptive quantitative study that investigates the impact of locus of control and loneliness on depression: the moderating role of religiosity. Survey research design is most appropriate for the study.

Quantitative research involved larger respondents would allow a higher degree of generalization of the results. Moreover, in survey research, larger respondents' enhanced allowance of model testing through multivariate statistical tools. In the present research, multiple regression statistical technique was used. Wampold and Freund (1987) provided an essential and beneficial overview of the practical uses of multiple regression techniques in psychology research.

3.2 Research Location and Population

The population of the study used in the research consisted of the older people of Punjab, Pakistan. Both males and females were of age ranges between 60 and above. Further, it has been divided into three categories i.e. 60-64, 65-69 and 70-74. The total population in Punjab is 114,653,247 that are based on the census provided by the Pakistan Statistical Department. Participants are represented in terms of gender, income, marital status, age, family size, children and socioeconomic status. In this study, appropriate location of the study was selected based on the fact that Punjab is the most populated state (Province) of Pakistan (Pakistan Bureau of Statistics, 2016).

Punjab State (Province) has been divided into 8 main divisions, which are Lahore, Rawalpindi, Faisalabad, Multan, Gujranwala, Sargodha, Bahawalpur and Dera Ghazi

Khan. It was decided to collect the data on the basis of the distribution in accordance to eight divisions.

It was very challenging for the researcher as the old population need to be addressed and informed appropriately. Due to limitations faced by older people in the form of problems of loss of hearing and limited level of understanding, the process of data collection became time consuming and difficult. Although it was quite laborious for the researcher to deal with such respondents, however, effortful participation of the respondents was duly acknowledged and appreciated.

Table 3.1 describes the total population of males and females in Punjab (province) of Pakistan. The table further describes the population of male and female into different districts of Punjab i.e. Bahawalpur, Dera Ghazi Khan, Multan, Faisalabad, Gujranwala, Lahore, Rawalpindi and Sargodha. Further, the data was divided on the basis of age groups, which are the main aim of the present research. Table 3.1 gives an overview of the population of older people in different districts of Punjab.

Table 3.1
Data source and location of Punjab

Age Groups	Location/ Gender	Punjab	Bahawalpur	Dera Ghazi Khan	Multan	Faisalabad	Gujranwala	Lahore	Rawalpindi	Sargodha
Total	Male	59325813	6507727	5871660	9256334	7605192	8765017	12263678	5022964	4188758
	Female	55327434	5967723	5404049	8536225	7042823	8342449	11132156	4976680	4019921
	Female	58647	6325	5728	9048	7645	8842	11800	5275	4261
(60-64)	Male	65258	7158	6458	10181	8357	9641	13490	5525	4607
	Female	55880	6027	5458	8621	7113	8425	11243	5026	4060
(65-69)	Male	45087	4945	4462	7034	5779	6661	9320	3817	3183
	Female	33749	3640	3296	5207	4296	5088	6790	3035	2452
(70-74)	Male	40934	4490	4051	6386	5247	6047	8461	3465	2890
	Female	30430	3282	2972	4694	3873	4588	6122	2737	2210

Source: Pakistan Statistical Bureau, (2016).

3.3 Sample Size

Appropriate sample size according to Roscoe (1975) rule of thumb for sample size is larger than 30 and less than 500 for most of the researches of social sciences. Therefore, sample size satisfied the proposed minimum size by Krejcie and Morgan (1970). Hence, a sample size of old people between ages 60-70 and above is 384.

This study is quantitative in nature that involved larger participants which would allow a higher degree of generalization of the results. This research used probability sampling technique (Gujrati, 2009). This research particularly had chosen stratified proportionate simple random sampling to ensure the sample size of each stratum is proportionate to the population size of the stratum (Creswell, Plano Clark, Gutmann, & Hanson, 2003).

To ensure the sample size for primary data collected from the eight main Divisions of Punjab is 384 respondents, which have been selected according to the rural and urban population percentage of each division. For this purpose, the biggest state that has been selected were Bahawalpur, Dera Ghazi Khan, Multan, Faisalabad, Gujranwala, Lahore, Rawalpindi and Sargodha. Thus, the total number of old people from selected divisions was counted and the proposed sample size was distributed proportionately to the number of old people in each sampled area Pakistan Statistical Bureau, 2017. Thus, Table 3.2 explains the sampling distribution of older people in different divisions of Punjab on the basis of rural and urban strata. The number of respondents was distributed equally to reduce the variation in the sample.

Table 3.2
Data collected from Different Cities of Punjab, Pakistan.

Age Groups	Punjab 384				Lahore 48				Bahawalpur 48				D. G. Khan 48				Rawalpindi 48				Multan 48				Faisalabad 48				Sargodah 48				Gujranwala 48			
	Rural 69% (265)		Urban 31% (119)		Rural 18% (9)		Urban 82% (39)		Rural 73% (35)		Urban 27% (13)		Rural 86% (41)		Urban 14% (7)		Rural 47% (23)		Urban 53% (25)		Rural 58% (28)		Urban 42% (20)		Rural 52% (25)		Urban 48% (23)		Rural 72% (35)		Urban 28% (13)		Rural 50% (24)		Urban 50% (24)	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
TOTAL	133	132	60	59	5	4	20	19	18	17	7	6	21	20	4	3	12	11	13	12	14	14	10	10	13	12	12	11	18	17	7	6	12	12	12	12
(60-64) 4% (16)	6	5	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
(65-69) 58% (224)	77	77	35	34	3	2	12	11	11	10	4	4	12	12	2	1	7	6	8	7	8	8	6	6	8	7	7	6	11	10	4	4	7	7	7	7
(70-74) 38% (144)	50	50	23	22	1	1	7	7	6	6	2	1	8	7	1	1	4	4	4	4	5	5	3	3	4	4	4	4	6	6	2	1	4	4	4	4
ToTAL	133	132	60	59	5	4	20	19	18	17	7	6	21	20	4	3	12	11	13	12	14	14	10	10	13	12	12	11	18	17	7	6	12	12	12	12

Source: Pakistan Statistical Bureau, (2018)

3.4 Instruments

The following research instruments were used for this study

1. Mini Mental State Examination, (1999) (MMSE)
2. Geriatric Depression Scale, (1986) (Short form, Urdu Version)
3. UCLA Loneliness Scale (Urdu Version)
4. Levenson Multidimensional Locus of Control Scale, (Urdu Version)
5. Bukhari Saad Moral judgment and religious orientation Scale
6. Measurement of Demographics

3.4.1 Mini-Mental State Examination (MMSE)

The Mini Mental State Examination (MMSE) is an instrument used to evaluate mental status of the respondents as they were very old. Thus, it was necessary to check their cognitive state. It was developed by Kurlowicz and Wallace (1999). It examines five areas of cognitive function that are location, registration, attention and calculation, recall, and language by using an 11items. It will take only 5-10 minutes and that is why it is practical to administer routinely. The maximum score on the scale is 30. Cognitive impairment is diagnosed when a person has a score of 23 or less on the scale. The MMSE can act as a screening tool for cognitively impaired older community, dwelling at homes, hospitalized and institutionalized adults. The instrument is used to screen the respondents to check whether they are cognitively oriented to answer these questionnaires or not.

3.4.2 Geriatric Depression Scale (Short form, Urdu Version)

Many instruments are available for measurement of depression, for instance, Sheikh and Yesavage (1986) developed the Geriatric Depression Scale (GDS) and this scale has been extensively used to measure the depression of the older population. The GDS Long Form has 30-items and it is a brief questionnaire in which respondents answer all questions with

yes or no in reference to their feelings over the past week. In this study a Short Form GDS will be used which has 15 questions and was developed in 1986. Because, as the sample of the present study consisted of old people so it is easy for them to answer the short form of the scale. Out of the 15 items, positive answer to 10 items shows the presence of depression, while negative answer to the rest (question numbers 1, 5, 7, 11, 13) shows depression. Scores for normal condition is 0-4, depending on education, age, and complaints; 5-8 score for mild depression; 9-11 score for moderate depression; and 12-15 score for severe depression.

The Short Form is a quick measurement for physically ill and mildly to moderately demented patients as they have short consideration compasses and/or feel effortlessly exhausted. It takes around 5 to 7 minutes to finish. The GDS was found to have 92% sensitivity and 89% specificity when assessed against diagnostic criteria. The validity and reliability of the instrument has been upheld through both clinical practice and examination. In an acceptable study contrasting the Long and Short Forms of the GDS for self-rating of indications of depression, both were successful in separating depressed from non-depressed adults with a high correlation ($r = 0.84$, $p < 0.001$) (Sheikh & Yesavage, 1986).

3.4.2.1 Urdu Version of GDS

In the present study, Urdu version of Geriatric depression scale was used. Geriatric depression short form had been translated by using back to back translation procedure. These steps are followed in doing back to back translation of the scale.

1. Forward Translation
2. Expert panel back translation
3. Pre-testing
4. Final version

The standard methodology of back translation was utilized to complete the translation of GDS (Anderson & Brislin, 1976; Hambleton & Patsula, 1999). For translation of GDS items into Urdu, five bilingual specialists were approached. Among them were two translators were having Master degree in English from Islamia University, Bahawalpur, two translators with M. Phil. in Psychology from Bahaudin Zakariya University and one with M.S. Clinical Psychology from the Islamia University of Bahawalpur, Pakistan.

The expert members of committee examined these translated construct precisely and chose the most exact ones, which passed on the best interpretation. Every construct was re-assessed by the members of the committee and it was then amended. It was hard to translate specific items definitively into the target language in this way; an exact interpretation with clarification in the bracket was given to pass on the sense. This would improve the phonetic proportionality between the original construct and their concerned interpretations.

A questionnaire was made an interpretation of back into English by the autonomous fluent specialists incorporating four experts of Psychology from the Islamia University Bahawalpur, one was a master of English, and one was a Masters in Economics. The original English constructs of GDS were not presented to bilingual specialists. Members of the same committee examined the translation of every construct analytically and tested the worthiness of the transformed construct. Construct were fundamentally examined and were settled in the back translation.

In the next step pretesting was done. Thirty participants, both male and female were selected from different areas of Punjab in pretesting. Age ranges from 60 to 70 years (M = 34.7, SD = 7.50). Female and males below the age of 60 and above the age of 70 were not included in the sample. At the minimum, the research participants' should be able to read Urdu easily. Male and female, both were involved. The simple random sampling technique was used. The sampling distribution of sample with other demographic variables was 15 males and 15females, the group of males was further divided into seven males doing business and the rest was job holders. The same procedure was repeated with group of females.

No query was raised by the participants while giving answers to the questionnaires but lack of enthusiasm in answering due to the age of the respondents. For 15 items, Cronbach's Alpha Reliability for GDS Urdu version (GDS-U) was 0.75. For 15 items, Guttmann split half coefficient was 0.76. These results were demonstrated that the scale has high internal reliability for the utilization in the present research. A final version of the GDS-U is then ready to use.

3.4.3 University of California, Los Angles Loneliness Scale (Urdu Version)

Russell and Colleagues (1980) developed a revised version of UCLA Loneliness scale that included positively worded or non-lonely items and negatively worded or lonely items. Score on the revised scale remained highly reliable. Furthermore, an analysis presented by Russell, Peplau, and Cutrona (1980) supported the discriminate validity of the revised UCLA loneliness scale against the measure of personality, social desirability and depression. Internal consistency (coefficient alpha ranging from 0.89 to 0.94) and test retest reliability was 0.73.

The scale is 20-item instrument on which respondent expresses how often their feeling, behavior reflect provided isolation and dissatisfaction with social relationship (Russell, Peplau, & Cutrona, 1980). In this scale subject indicate how often they feel a particular way by circling a number. The number ranged from 1 i.e. never to 4 i.e. always. Items 1, 5, 6, 10, 15, 16, 19, 20 were scored reverse by scores range from 20 to 80 with higher scores indicating increased loneliness. In the present study translated form of UCLA loneliness scale which was done by National Institute of Psychology, Quaid-e-Azam University, Islamabad, Pakistan was used, which had 21 items as item 9 was divided into two statements. Minimum score was 21 and the maximum was 84. Its alpha reliability was 0.83 for non-clinical sample and 0.84 on drawn sample of diagnosed depressed patients. A pilot study is conducted to check the reliability of the scale. The Cronbach's alpha reliability of the UCLA Loneliness scale is 0.63.

3.4.4 Levenson Multidimensional Locus of Control Scale (Urdu Version)

The concept of locus of control is given by Rotter's, (1975) stated that individual may believe that reinforcements are either controlled by their own behaviors or by external influences such as other people, society, and luck. The Levenson multidimensional scale was used to measure locus of control. Basically, it measures three factors.

1) Personal scale or internal locus of control scale, which taps an individual perceived control over an event.
2) Powerful other scale which measures the degree to which control the other person reinforces.
3) Chance scale (external) which measures the extent to which an individual believes his reinforces occur randomly.

It is Likert type scale with 6-point response format. It contains 24 items 1,2,3,4,5,10, 19,21 measure internal control, items 6,7,8,9,13, 22,23,24 measure chance/ external dimension and items 11,12,14,15,16,17,18,20 measure the dimension of the powerful others. The questionnaire is 6-point rating scale ranging from very strongly disagree to very strongly agree. The reliability for internal scale is 0.64, 0.77 for powerful others and 0.78 for chance/external scale. The split half reliabilities were 0.62 for internal, 0.66 for powerful others scale and 0.64 for chance scale. Moderate correlation existed between chance/external and powerful other scale (r =, < - 0.59, p <.01) and both were negatively correlated with internal locus of scale.

In this study, the Urdu version was used that already been developed by National Institute of Psychology, Quaid-e-Azam University, Islamabad, Pakistan and reliabilities were determined for total scale in a drawn sample of the study. These were 0.76 for total scale, 0.58 for internal, 0.73 for a chance and 0.71 for powerful others. A pilot study is conducted to check the authenticity of the scale. The Cronbach's alpha reliability is 0.91. The other three subscales of locus of control, i.e. internal locus of control. External locus of control and powerful others scale. The Cronbach's alpha reliability of these subscales is 0.71 internal, 0.81chance and 0.88 powerful others all these reliabilities are quite good.

3.4.5 Bukhari Saad Moral Judgment and Religious Orientation Religiosity Scale

Bukhari Saad Moral judgment and religious orientation of adolescents, young adults and adults' religiosity Scale was developed in the present research. The new religiosity Scale consisted of 17 items. These items are answered on a 6-point Likert-type scale (1 = very strongly disagree, 6 = very strongly agree). Their individual scores are summed up and score was calculated. Scale items were derived by using Gorsuch and McPherson 1989. Scores range from 17 to 102. Higher scores indicate higher levels of a religious orientation.

The cutoff score of the religiosity scale is 42. The Cronbach's alpha reliability of the religiosity scale is 0.90. This is considered as a good reliability for the scale to use in the research. The Validity of the scale is reported by using Kaiser-Meyer-Olkin (1974) measures of sampling adequacy and Bartlett test of Sphericity. The value of KMO measures of sampling adequacy is 0.63 and the Bartlett test of Sphericity is significant which means the scale is valid and reliable to use in the present research.

3.4.6. Measurement of Demographical Factors

The following demographical factors have been used in the present study. These are gender (GEN), age (AGE), education (EDU), family size (FS), marital status (MS), number of children (NOC) and socio-economic status (SES) respectively. The further illustration has been given below.

Age (AGE): In this study, the age (AGE) limit of the elderly people are measured 60 to 74 years. Thus the measurement of the scale is 1 = 60- 64, 2 = 65-69 and 3 = 70- 74 correspondingly stated by (Qualter, *et al*., 2010; Cacioppo, Hawkley, & Thisted, 2010; Wei, Shaffer, Young, & Zakalik, 2005).

Education (EDU): In the current research the measurement of the education (EDU) is 1 = primary, 2 = Middle, 3 = Matric, 4 = F. A/F. Sc, 5 = B.A/ B.Sc., 6= M.A / M.Sc., 7= M.Phil./ Ph.D. respectively as illustrated by (Chou & Chi, 2005).

Family Size (FS): The measurement of the family size (FS) is 1 = 1-2 member, 2 = 3-4 members, 3 = 5-6 members, 4 = 7-8 members and 5 = 9 & above supported by (Marpady, Jyothi, & Singhe, 2012).

Marital Status (MS): The numeric dimensions of the marital status are 1 = Unmarried, 2 = Married, 3 = Widowed and 4 = Divorced as in line with Lapierre (2009) and (Simon, 2002).

Number of children (NOC): The measurement of the number of children (NOC) such as 1= No children, 2= Son, 3= Daughter and 4= Both such as depicted by (Hansen, Slagsvold, & Moum, 2009).

Socio-economic status (SES): The domains of the socio-economic status (SES) are 1= below 14,000, 2= 15,000- 30,000 and 3= Above 30,000 correspondingly as supported by (Lorant, Deliege, Eaton, Robert, Philippot, & Ansseau, 2003).

3.5 Pilot Study Procedure

UCLA Loneliness scale and Levenson Multidimensional Locus of Control Scale have been previously used in different published researches. These are standardized scale translated by National Institute of Psychology Quaid-e-Azam University, Islamabad, Pakistan which have content validity. Geriatric Depression Scale (Short form) is translated by using a standardized method of back to back translation. The pretest was conducted on 40 older people, both male and female of ages 60 and above to check the reliability of the instruments. The questionnaires were distributed in various cities of Punjab, Pakistan. The reliability of instruments was checked through internal Consistency of the Cronbach's alpha.

3.6 Procedure

The procedure of the present research was divided into two phases.

3.6.1 Phase I

Initially permission was taken from the higher authorities of Punjab, Pakistan to use of data by Statistical Department of Punjab, Pakistan for research purpose. The

questionnaires were used for the purpose of gathering the information for this research. Questionnaires were administered by giving them personally, depending on the situation. Before starting the study, all participants were assured that their information would be kept confidential and the data will be used only for research purpose.

3.6.2 Phase II

An informed consent was used for this purpose. A brief oral presentation was also given by the researcher covering the purpose of the study. First of all, a screening test was applied to the respondents that were a Mini mental state examination was done as the respondents were very old so it was necessary to check their cognitive state. After the screening test was completed, questionnaires were distributed to the respondents collected upon completion. After the collection of data, the answer sheets were scored.

3.7 Data Analysis

The data for the present study was analyzed using the Statistical Package of Social Sciences (SPSS) software. However, the data were statistically analyzed through the following process in detail. The first step; data were summarized and initially analyzed through descriptive statistics. The second step continued to the multiple regression assumptions. Finally, the hypotheses were tested through correlation analysis, hierarchal regression with bootstrapping, t-test and one-way ANOVA.

3.8 Preparing Data for Multiple Regression Analysis

There are four main assumptions that should be met prior to conducting the regression analysis. These assumptions are: linearity; homoscedasticity, normality and no serious Multicollinearity problem, and finally independence of residuals (Coakes & Steed, 2003; Hair, Anderson, Babin, & Black, 2010). According to Hair *et al*., (2010), sample size has

a direct impact on the power of the multiple regressions. Therefore, there has been no hard rule to determine the observation independent variable ratio. To ensure valid and reliable results, some researchers claim that ideally there should be 15 to 20 observations for each independent variable (Hair *et al.,* 2010).

The coefficient of determination, R^2, is the measure of the goodness of the model where it indicates the variance of the dependent variable that was accounted for by the independent variables (Hair *et al*., 2010). In the estimation, therefore, sufficient attention was given to the econometric norms in the pragmatic measurement and analysis. Formerly to carry out the multiple regression analysis, the incidence of outliers and Multicollinearity were observed. It was found that the data have no stern concerns about Multicollinearity. Additionally, the executed research revealed that all the essential settings were made to do the regression analysis were fulfilled. The measures used in this research are described in the subsequent sub-sections.

3.8.1 Detecting Outliers

outliers are well-defined interpretations that have distinctive qualities and vary noticeably from others (Hair *et al*., 2010). Furthermore, outliers can be distinguished by means of univariate, bivariate and multivariate procedures in the view of the number of variables. The commonly used method to identify outliers is Mahalanobis distance measure. This technique, according to Hair *et al*., (2010), processes the distance of each observation from the mean center of all observations in multidimensional space. In identifying the outlier observations, Mahalanobis distance values were observed and linked to the critical values in Chi-square distribution table. The outcomes of this research exhibited that Mahalanobis distances of all the observations ranged between 4.1217 and 24.9760. Stating to the Chi-Square distribution table, the critical value at 0.001 level of significance and 11 degrees of

freedom was found to be 26.22. This means that there are no outliers in the present study data. In order to detect the outlier observations, an additional investigation of the SPSS package results kept in the data as Mahalanobis distance was equated to using the Chi Square value of 26.22 concluded that there are no outliers in this research. So the next step is to examine other assumption of the regression analysis.

3.8.2 Multicollinearity Check

Multicollinearity check is the indicator of the presence of an extraordinary level of linear correlation amongst two or more predictor variables in a multiple regression. In several concrete check, the relationship between explanatory variable will be no-zero, even if this will commonly be moderately nonthreatening in the logic that a minor amount of link between explanatory variables will practically constantly happen but will not the reason of in large amounts of loss of accuracy. Multicollinearity is the effect of any variable that can be accounted for by other variables (Hair *et al*., 2010). The rise of Multicollinearity increases the effort of explanation of diverse variables' effects. The tolerance value and Variance Inflation Factor (VIF) is used in the present study to inspect the incidence of Multicollinearity problems amongst the variables of the study. According to Hair *et al.,* (2010), tolerance is the variability in a variable that is not accounted for by other variables. Furthermore, the reciprocal of the tolerance variable is the VIF indicator.

Table 3.3
Multicollinearity Test

Variables	Tolerance Value	VIF
Loneliness	.717	1.395
Locus of control	.048	9.883
Locus of control external	.120	8.330
Locus of control Internal	.116	8.651
Locus of control powerful	.295	3.385
Religiosity	.974	1.027
Gender	.780	1.281
Age	.525	1.905
Education	.424	2.356
Family Size	.382	2.617
Marital Status	.731	1.368
Children	.381	2.626
Socioeconomic Status	.297	3.364

The data in Table 3.3 showed that the tolerance values of all variables fluctuated between 0.048 and 0.974. Besides, the VIF values of all the variables were found to be between 1.027 and 9.883. These findings showed that all of the variables of this research have tolerance values more than 0.1 and accordingly the VIF as suggested by Hair *et al*., (2010) were below the threshold value of 10. Conversely, the tolerance and VIF values of the variables involved in this research were within the suggested threshold values, representing that the issue of Multicollinearity was not existing in this research.

Before directing the regression analysis, this research dedicated the following sub-sections to inspect the assumptions of multiple linear regressions over the residual analysis (Hair *et al*., 2010). Additionally, the next sections discussed the assumptions of normality, linearity, homoscedasticity, and finally the independence of error terms.

3.8.3 Testing the Normality of the Error Terms

The normal probability plots of the residuals are used to examine the normality assumption of the error terms. The tools used are histogram and the normal probability plot (P-P Plots) of the regression standardized residual on which the normality was confirmed. The Figures 3.1 and 3.2, relating to the facts exhibited that the behavior of the data distribution did not

deviate substantially from the normal curve associated. Hence, it can be determined that the statistics roughly monitored normal distribution.

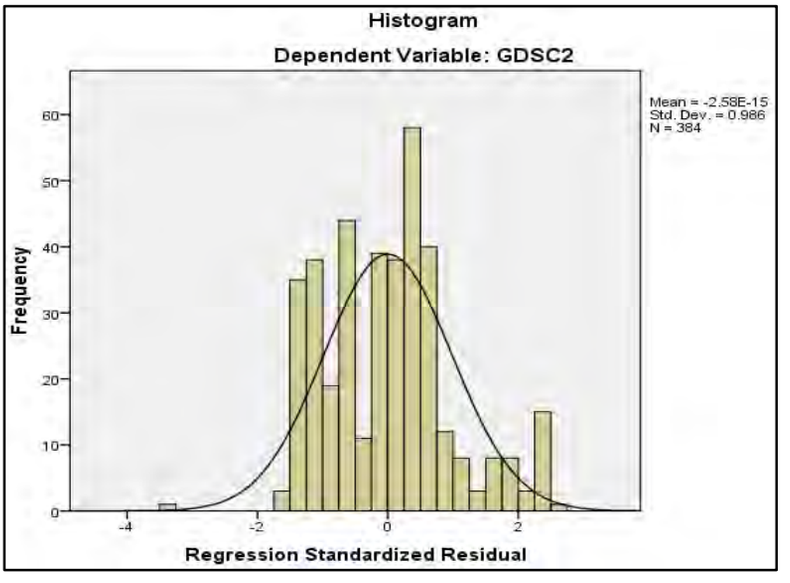

Figure 3.1. Histogram of the Regression Residuals

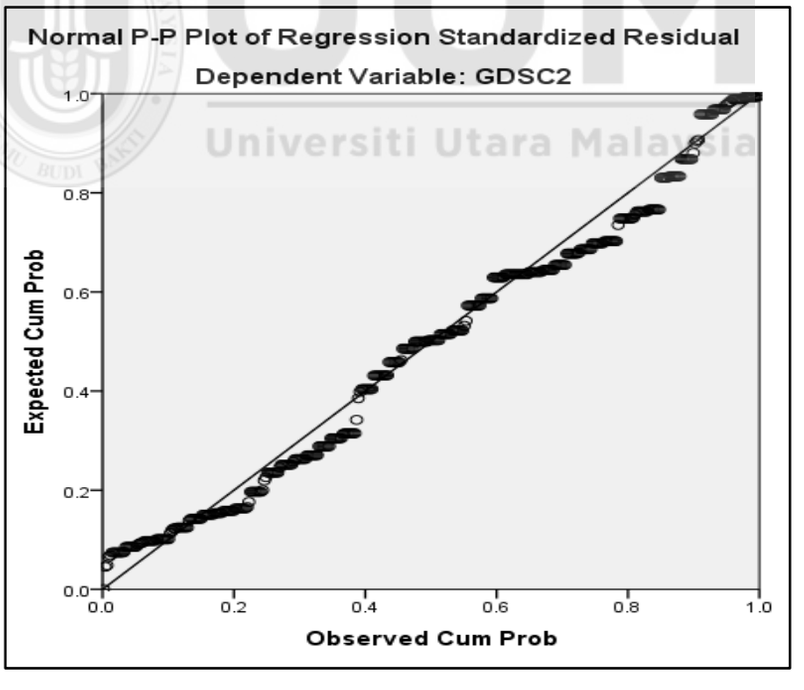

Figure 3.2. Testing Normality using Normal Probability Plot

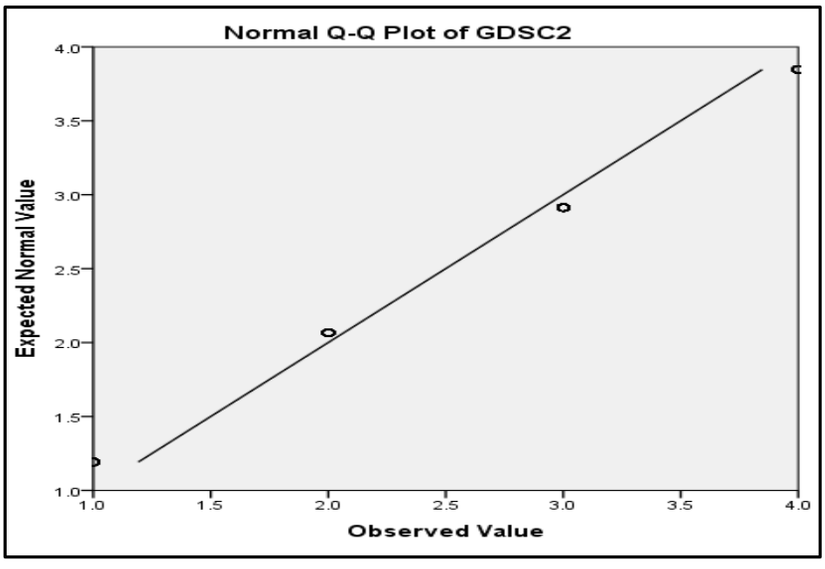

Figure 3.3. Testing Normality using Q-Q Plot

By examining both P-P Plot and Q-Q plot the assumption of normality was also confirmed. The straight lines of two plots in both graphs indicating that the data were approximately normally distributed as depicted in Figure 4.2, and Figure 4.3 As a confirmation, the normality of the data were examined by testing the normality of the residuals. The results of residual analysis, however, showed that there are no major deviations from the normality assumption.

It can be concluded based on the previous discussion that the normality of the error terms was confirmed. After confirming, the assumption of normality of the error terms, the next process is to test the linearity, homoscedasticity and independence of the error terms as argued in the following sub- section.

3.8.4 Testing the Linearity, Homoscedasticity and the Independence of Errors

The scatterplot of the residuals is examined by this study to check the linearity, homoscedasticity and the independence of the error terms. The scatter plot in Figure 4.4 exhibited that the residual and the predicted value have no clear relationship. Since the scatterplot showed no clear relationship between residuals and predicted values, following

the suggestion of Hair *et al*., (2010), it proves the linearity, homoscedasticity and the independence of residuals of the data. Moreover, the linearity assumption was also examined through the scatter plots of each independent variable with the dependent variable or partial correlation plots between each independent variable and the dependent variable.

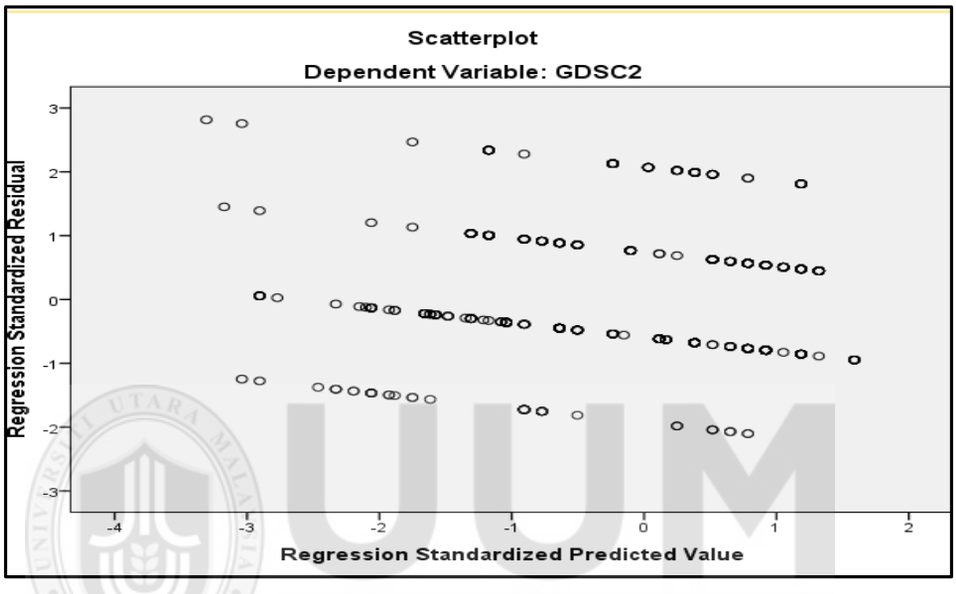

Figure 3.4. The Scatter plot of Residuals

3.9 Relationship among Loneliness, Locus of Control, Religiosity and Depression

Before starting the main analysis of the research, Pearson correlation analysis is run to show the relationships between Geriatric depression, loneliness and locus of control variables and moderating variable religiosity. More specifically, the purpose of using Pearson correlation analysis (PCA) was to explore the relationships between geriatric depression, loneliness and locus of control variables and moderating variable religiosity in affecting respondents.

As illustrated in Table 3.4, there is a positive relationship between loneliness and geriatric depression, which means as the level of loneliness increases the level of geriatric

depression, also increases. There is also a positive relationship between level of locus of control overall and geriatric depression, which shows that as a person have high score on locus of control overall scale it loses control over self and his/her geriatric depression is also very high. However, there is no relationship between locus of control powerful others and geriatric depression.

There is a negative relationship between internal locus of control and geriatric depression as described in Table 3.4. As the level of internal locus of control increases the level of geriatric depression will decrease. External locus of control has a positive relationship with geriatric depression meaning that as the level of external locus of control will increase the geriatric depression also will increase. Similarly, powerful others locus of control also has positive relation, as level of powerful others score increases geriatric depression also increase. Religiosity has a negative relationship with geriatric depression as mentioned in Table 3.4. That means when the level of religiosity increases than the geriatric depression will be decreased.

All the relationships between geriatric depression, loneliness and locus of control variables and moderating variable of religiosity on older people in Pakistan were found to be statistically significant at the 0.01 to 0.05 level of significance.

Table 3.4
Correlation Matrix

	Gdsc	**Lsa**	**Lcsa**	**Lcsea**	**Lcsia**	**Lcspa**	**Rsta**
Gdsc	1						
Lsa	.259**	1					
Lcsa	.119*	.021	1				
Lcsea	.290**	.111*	.894**	1			
Lcsia	-.067*	-.038	.925**	.382**	1		
Lcspa	.050*	-.039	.667**	.330**	.440**	1	
Rsta	-.109*	.056	.006	-.004	.028	-.011	1

*significant at p<0.05 and **significant at p<0.01

Note: Geriatric depression (Gdsc), Loneliness (Lsa), Locus of control external (Lscea), Locus of control internal (Lcsia), Locus of control powerful others (Lcspa), Locus of control (Lcsa), Religiosity (Rsta).

In determining the strength of the relationships between each independent and the dependent variable, Hair *et al.,* (2010), suggested that while the correlation of 0 indicates that there is no relationship, the correlation of ±1.0 indicates the existence of a perfect relationship. In interpreting the degree of correlation between all the independent and dependent variables 0 and 1.0, Cohen (1970) criterion was followed. When the correlation (*r*) is between ±0.1 and ±0.29, the relationship is said to be low, when r is between ±0.30 and ±0.49, the relationship is described as medium. Finally, the relationship is said to be strong when the correlation is above ±0.75. Thus, the strength of the correlation does not indicate the significance of the correlation, so is the rejection of the null hypothesis.

Based on the results in Table 3.4, the Pearson correlation coefficients were found to be significant to 0.01 and 0.05 level of significance. In other words, the data under the present study supported the existence of significant relationships between geriatric depression, locus of control, loneliness and religiosity among older people of Pakistan.

Table3.5

Summary of the Correlation Analysis

	Hypothesized Relationship	Corr.Coeff (r)	Decision
1	There is a positive relation between loneliness and geriatric depression	.259**	Significant
2	There is a positive relation between level of locus of control and geriatric depression.	.119*	Significant
3	There is a no relationship between level of locus of control powerful others and geriatric depression.	.050*	Significant
4	There is negative relation between level of locus of control internal and geriatric depression.	-.067**	Significant
5	There is a positive relation between levels of locus of control external on geriatric depression.	.290**	Significant

3.10 Conclusion

By and large, the study is intended to determine the impact of loneliness and locus of control on geriatric depression among older people of Pakistan in perceiving the due significance of religiosity as a moderating factor. The study tries to provide empirical insight on the geriatric depression for determining different factors of loneliness in Pakistan. The analysis also intended to infer pragmatic policy oriented recommendations for the considerations of the policy makers of Pakistan for older people as well as other developing countries in a similar situation.

CHAPTER FOUR

FINDINGS

4.1 Introduction

The chapter describes the findings of the study on the impact of loneliness and locus of control on geriatric depression among the elderly and the role of religiosity as a moderator. It begins with the demographic profile of the respondents, followed by a description of their levels of locus of control, depression and religiosity. Relationships among variables studied, i.e. loneliness, locus of control, geriatric depression and religiosity were also explored. The chapter then proceeds into analyses of the impact of loneliness and locus of control on geriatric depression among the elderly as well as the role of the moderator is also discussed.

4.2 Socio-demographic Profile of respondents

A total number of 384 male and female were involved in this study. The profile of the respondents is included in Table 4.1. Seven demographic variables were used in this study are gender, age, education, marital status, family size, number of children and socioeconomic status. Each demographic variable is divided into different categories that is explained in the Table 4.1.

The respondents are divided into two categories on the basis of their gender. The gender is equally distributed to see the gender differences in the present study that is 192 females and 192 males. Concerning age, the study classified them into three age groups. These age groups are 60 years to 64 years old, 65 years to 69 years old and 70 years to 74 years old. The majority of respondents falls in the group 65 years to 69 years' old which are 224(58%). On the other hand, the smallest percentages of respondents are in the age group of 60 years to 64 years old which are16(4%) respectively. While the second highest age

group is 70 years to 74 years old which has 144(38%) correspondingly. The mean age of the respondents was 67 years.

The education level is expressed as the maximum number of years of schooling completed. This study has used seven groups based on the education level namely Primary, Middle, Matric, Intermediate, Degree, Masters and MPhil/ Ph.D. The Table 4.1 shows that the two groups have the same number of respondents 16 (4%) which are middle and matric level. So, these two groups have equal no of respondents in terms of middle and matric education. There are 48 (13%) respondents who have a master's degree. 112 (29%) respondents have degree level education. Sixty-four (17%) respondents have higher secondary school (intermediate) education level. Thirty-two (8%) respondents are M. Phil and PhD education. The number of respondents are 96 (25%) have primary education. The mean education level is matric which is the level of nine years to ten years of education.

The marital status of respondents has been divided into four groups Unmarried, Married, Widow and Divorce. There is a same number of respondents 168 (44 %) in two groups, they are married and unmarried. Whereas the widows and divorce are 24 (6%) in each group correspondingly.

Family size is calculated by the number of individuals, including respondents who live in the same house. They are divided into five groups of different family sizes of 1 to 2 members, 3 to 4 members, 5 to 6 members, 7 to 8 members and 9 & above respectively. In the table 4.1 the majority of the older people 160 (42%) has family members between 5 to 6, likewise 16 respondents (4%) have 1 to 2 members, while 48 respondents (12%) of them have 7 to 8 family members, whereas 128 respondents (33%) have 3 to 4 family members however 32 respondents (8%) have 9 & above family members. The Table 4.1 shows that most of the older people respondents have 5 to 6 family member. Which describes that approximately each respondent has 5 to 6 family members including the respondents.

Firstly, the category of having or not having children is identified. One hundred and ninety-two respondents (50%) are those who have children, 192 respondents (50%) are those who have no children. The number of children is further divided into three different categories. Category one number of sons, category two number of daughters and category three both number of sons and daughters. The main reason for this division is socio cultural conditions. In Pakistan, having a son is a matter of pride so, it is necessary to check this main issue. The highest percentage is of a number of children were in both sons and daughter's category, which is 86 (44%) which means all these respondents have both types of children boys and girls. While the other categories 53 (28%) respondents for the daughters only and also 53 (28%) respondents for sons only categories correspondingly. The majority of the respondents have both daughters and sons.

Socioeconomic status of the respondents is divided into three classes lower, middle and upper on the basis of the research by (Siddique, 2003, Pickett & Pearl, 2001).). The table shows that the most of the respondents (160; 42%) belong to middle class and others (112; 29%) are in the upper class. The remaining respondents (112; 29%) lie in the lower class. Socioeconomic status of the respondents in category2 shows most of the respondents belong to the middle class which is the most common class in Pakistan.

Table 4.1
Demographic profile of the respondents

Demographics	Frequency	Percentages%	Min	Max
Gender				
Male	192	50%		
Female	192	50%		
Age			60	74
60-64 years	144	38%		
65-69years	224	58%		
70-74years	16	4%		
Education			1	7
Primary 1-5	96	25%		
Middle 6-8	16	4%		
Matric 9-10	16	4%		
Intermediate 11-12	64	17%		
Degree 13-14	112	29%		
Masters 15-16	48	13%		
M.Phil/ PhD	32	8%		
Marital Status			1	4
Married	168	44%		
Unmarried	168	44%		
Divorced	24	6%		
Widow/Widower	24	6%		
Family Size			1	5
1-2 member	16	4%		
3-4 members	128	33%		
5-6 members	160	42%		
7-8 members	48	13%		
9 & above members	32	8%		
Do you have children				
Yes	192	50%		
No	192	50%		
Gender of children			1	3
Both	86	44%		
Daughters	53	28%		
Sons	53	28%		
Socioeconomic status			1	3
Lower Class(below 14000)	112	29%		
Middle Class	160	42%		
Upper Class	112	29%		

4.3 Profile of the Variables

There are different levels of variables measured in the present study. The characteristics of the variables with respect to the responses of the respondents of the study are discussed in the Table 4.2. There are two independent variables which are loneliness and locus of control, one dependent variable is geriatric depression and a moderator which is religiosity is described in the Table 4.2.

4.3.1 Loneliness

The loneliness of older people has three levels: low, medium and high. These levels are used to check the different level of loneliness in older respondents of the study. The level of loneliness, of the respondents (184, 49%) mostly falls into the level of medium loneliness. While the other highest number of respondents (169, 44%) lies in the low level of loneliness. The least number of respondents (26, 7%) has been on the high level of loneliness.

4.3.2 Locus of control

There were three dimensions of locus of control that was used in the present study. The below Table 4.2 gives the detailed portfolio of the respondents of the research. The Levenson multidimensional locus of scale is divided into three dimensions. The name of the dimensions is locus of control external (chance), locus of control internal and locus of control powerful others. There are 24 items in the scale. Twenty-four items are equally distributed into three subscales or dimensions. Each dimension has eight items each. The maximum number of respondents is in the dimension of locus of control external 165 respondents (43%). The second highest dimension is locus of control powerful others. The number of respondents is 115 (30%). The third dimensions have the least number of respondents which are 104 (27%) respectively.

4.3.3 Religiosity

Religiosity is measured by using a six point Likert scale that are strongly disagree, somewhat disagree, disagree, agree, agree somewhat and strongly agree. There are seventeen items that measure religiosity of the respondents of the present study. Table 4.2 reports the responses of the respondents on the religiosity scale. The majority of the respondents (367, 96%) have extrinsic religiosity. In contrast (17, 4%) respondents have intrinsic religiosity.

4.3.4 Geriatric depression

Geriatric depression is divided into four categories, category one (no depression), category two (mild depression) category three (moderate depression) and category four (severe depression). These categories show either respondent have no depression, mild depression, moderate depression and severe depression. Table 4.2 describes the level of depression of the respondents. It shows that most of the older people fall in the category of moderate depression (156; 41%). On the other hand, the smallest percentage of respondents is in the category of severe depression (34; 9%). While mild depression has respondents (150; 39%), which is higher than the respondents of no depression which is (44; 11%). This shows that depression is common in two categories which is mild depression and moderate depression.

Table 4.2
Profile of the Variables.

Variables	Frequency	Percentages	Min	Max
Loneliness			1	4
Low	26	7%		
Medium	189	49%		
High	169	44%		
Locus of control				
External	165	43%		
Internal	104	27%		
powerful others	115	30%		
Religiosity			1	6
Extrinsic	367	96%		
Intrinsic	17	4%		
Geriatric depression			1	4
No depression	44	11%		
Mild depression	150	39%		
Moderate depression	156	41%		
Severe depression	34	9%		

4.4 Impact of Loneliness, Locus of Control, Demographic variables and Religiosity on Geriatric Depression

After all the regression assumptions were checked and found to be satisfied, this study ran the hierarchical regression analysis using SPSS 21 to examine the predictive power of the hypothesized model. In other words, the main purpose of the multiple regression analysis was to determine the predictive power of each independent variable toward the dependent variable. Moreover, it was used to identify and compare the predictive power of independent variables, i.e. loneliness, locus of control, internal locus of control, external locus of control, powerful others locus of control and demographic variables, and moderator religiosity toward the geriatric depression.

4.4.1 Hypotheses of the Study

Before the final analysis, hypotheses of the study have been explained as follows.

Table 4.3
Hypotheses of Research

Hypothesis No	Hypotheses
H1	There is an impact of loneliness on geriatric depression.
H2	There is an impact of locus of control on geriatric depression.
H2a	There is an impact of internal locus of control on geriatric depression.
H2b	There is an impact of external locus of control on geriatric depression.
H2c	There is an impact of locus of powerful others on geriatric depression.
H3	There is an impact of moderator religiosity on the impact of loneliness on geriatric depression.
H4	There is an impact of moderator religiosity on the impact of locus of control on geriatric depression.
H4a	There is an impact of moderator religiosity on the impact of internal locus of control on geriatric depression.
H4b	There is an impact of moderator religiosity on the impact of external locus of control on geriatric depression.
H4c	There is an impact of moderator religiosity on the impact of powerful others locus of control with geriatric depression
H5	There is an impact of demographic variables such as age, gender, education, family size, marital status, no of children and socioeconomic status on geriatric depression.

4.5 Impact of Loneliness on Geriatric Depression with and without Religiosity as a Moderator

The hierarchical regression results were reported according to the analysis stage. In the first stage the loneliness and geriatric depression were added in model 1 and then loneliness with religiosity as a moderator was added in model 2.

4.5.1 Model Summary of Impact of Loneliness on Geriatric Depression with and without Religiosity as a Moderator

The model summary contains two models. Model 1 refers to the first stage in the hierarchy when only loneliness was used as a predictor. Model 2 refers to the final model in which loneliness, religiosity and loneliness religiosity as a moderator. The model summary of the impact of loneliness on geriatric depression with and without religiosity as a moderator is depicted in Table 4.4.

Table 4.4
Model Summary of Impact of loneliness on geriatric depression with and without religiosity as a moderator

Model	R	R^2	Adjusted R^2	Standard Error of Estimate
1	.259	.067	.065	0.784
2	.313	.098	.091	0.733

The first and second column of Table 4.4 presents the values of the correlation coefficient between the predictors and the outcome variable. While second column is the value of R^2 of the model.

The R^2 measured the amount of the variability in the outcome variable as accounted for by the predictor variables Field (2009). Going by the R-square result of the Model 1 as seen in Table 4.4 therefore, the value is 0.067, which means that Loneliness accounts for 6.7% of the variation in geriatric depression. This shows that the Loneliness explained the variation in geriatric depression by 6.7%. However, for the second model (model 2), the R^2 value increases to 9.8% of the variance in geriatric depression by the introduction of religiosity factor. Therefore, when the religiosity moderator was introduced in model 2 the R-square improved from 6.7% to 9.8%. The adjusted R^2 explained the amount accounted for by geriatric depression as well as the number of observations for the model and its generalization. In the Table 4.4 of the model summarized impact of loneliness on geriatric depression with and without religiosity as a moderator the difference in the final model is a fair bit (0.098-0.067=0.031 or 3.1%). This variation is a justification that, the existence of moderator in the model contributed to fitness of the model since the R-square improved in Model 2 with the moderator as compare to Model 1 without a moderator. This is in line with Guajarati (2009) which argued that, the more the variables in the model, the better the fitness of the model in other words the more the R-square of the model as seen in Model 2 of this study.

4.5.2 The Analysis of Variance on Impact of Loneliness on Geriatric Depression with and without Religiosity as a Moderator

The analysis of variance table tests whether the model is significantly better at predicting the outcome by using the mean square of the model. The F-statistics represent the improvement in prediction of the model as obtained from the results in Table 4.5 where it also predicts the fitness of the models (labeled as 'Regression' in the table) relative to the inaccuracy that still exists in the model (labeled as 'Residual' in the Table 4.5).

Table 4.5
Analysis of Variance on Impact of loneliness on geriatric depression with and without religiosity as a moderator

Model	Tests	Sum of Squares	df	Mean Squares	F	Sig
1	Regression	16.917	1	16.917	27.533	.000*
	Residual	234.708	382	0.614		
	Total	251.625	383			
2	Regression	22.262	3	8.239	13.998	.000*
	Residual	446.940	380	0.597		
	Total	251.625	383			

*significant at p<0.05

Table 4.5 contains two sections, one for each model. If the improvement of regression models is greater than the residual within the models, then the value of F-statistics should be greater than 1. Thus, Model 1 of this study has F-statistics value of 27.533 with corresponding p-value is 0.000 ($p< 0.05$), whereas, the Model 2 has F-statistics value of 13.798 with p-value of 0.000 ($p< 0.05$) which means that both are significant at probability of less than 5%. From this we can interpret that the final model significantly improves to predict the outcome variable which is geriatric depression.

4.5.3 Model Parameters of Impact of Loneliness on Geriatric Depression with and without Religiosity as a Moderator

In Multiple regression analysis the model that takes the form of an equation that contains a coefficient of Beta for each predictor as seen in Table 4.6. The Table 4.6 provides the

estimates for these Betas values which indicates the contribution of each predictor to the criterion variables.

Table 4.6
Model parameters of Impact of loneliness on geriatric depression with and without religiosity as a moderator

Mode1		**Unstandardized coefficient**		**Standardized o-efficient**		
	Variables	Beta	Std. Error	Beta	T	Sig
1	**Constant**	1.649	0.161		10.228	0.000
	Loneliness	0.345	0.066	0.259	5.247	0 .000*
2	**Constant**	-0.411	1.020		-.402	0.368
	Loneliness	1.365	0.398	1.025	3.430	0.001*
	Religiosity	1.990	0.981	0.506	2.028	0.043
	Loneliness & religiosity	-0.981	0.381	-1.020	-2.574	0.010*

The Beta values in Table 4.6 explained the relationship between geriatric depression and each of the predictor variables. All the sign of the Beta in Table 4.8 indicates a positive relationship between the predictor and the criterion variable. The Beta value of the variable loneliness is positive 0.345. This means that, there is a positive relationship between loneliness and geriatric depression of the old folk in this study. Therefore, the higher the loneliness experienced by the old people, the higher the depression will be felt by them.

The second value of the Beta is the interaction of religiosity as a moderator and loneliness. The coefficient value is negative as seen in Table 4.6 with a value of -0.981. The negative value reflected that the moderator (religiosity) has a negative effect on the positive relation between the loneliness and geriatric depression of the old people in this study. This can be explained as follows. The geriatric depression which increases as the loneliness increases will instead decreases in the presence of proper religiosity practices. This is because, as in the second model, the introduction of religiosity in the said relation reversed the direction

of correlation (from a positive to a negative correlation). Thus, as the interaction of religiosity and loneliness of old people in Pakistan increases, the geriatric depression of the said people decreases. This means that, old people who are religious at the same time are lonely their depression will reduce citrus peribus. The parameter found is said to be significant since the p-value is less than 5% as seen in Table 4.6. Therefore, the introduction of the moderator played a significant contribution to the model.

4.5.4 Bootstrapping of Impact of Loneliness on Geriatric Depression with and without Religiosity as a Moderator

Bootstrap confidence intervals provide a way of quantifying the uncertainties in the inferences that can be drawn from a sample of data. The idea is to use a simulation based on the actual data, to estimate the likely extent of sampling error. Wood (2004) explains how simple bootstrapping works, and explores some of its advantages. An important task of statistics is to establish the degree of trust that can be placed in a result based on a limited sample of data. As the sample of present study is limited so the process of bootstrapping is used.

Table 4.7
Bootstrapping of Impact of loneliness on geriatric depression with and without religiosity as a moderator

Bootstrap for Coefficients						
					95% confidence interval	
Model	B	Bias	Std. Error	Sig	Lower	Upper
Constant	1.649	.006	.155	.000*	1.361	1.964
Loneliness	.345	-.003	.062	.000*	.219	.461
Constant	-.411	.022	1.088	.686	-2.668	1.695
Loneliness	1.365	-.009	.385	.000*	.629	2.160
Religiosity	1.990	-.016	1.055	.043*	-.015	4.175
Loneliness & Religiosity	-.981	.006	.370	.004*	-1.743	-.284

*significant at p<0.05

Table 4.7 describes the bootstrapping of the impact of loneliness on geriatric depression with and without moderator religiosity. Table 4.7 suggests that the results of the bootstrapping strengthened the results of the study. This will remove any discrepancy of results or model effectively because of small sample size.

4.6 Impact of Locus of Control Total on Geriatric Depression with and without Religiosity as a Moderator

The impact of locus of control on geriatric depression with and without religiosity as a moderator is discussed in the following section.

4.6.1 Model Summary of Impact of Locus of Control Total on Geriatric Depression with and without Religiosity as a Moderator

The model summary of impact of locus of control total on geriatric depression with and without religiosity as a moderator is explained below.

Table 4.8
Model summary of impact of locus of control total on geriatric depression with and without religiosity as a moderator

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	.016	.026	.021	.802
2	.163	.027	.019	.803

*significant at $p<0.05$

The second column of Table 4.8 explains the values of the correlation coefficient between the predictors and the criterion variable. While second column is the value of R^2 of the model. The R^2 measured the amount of the variability in the geriatric depression as accounted for by the locus of control total. The above mentioned Table 4.8 has R^2 result of the Model 1. The model 1 has its value .026 which means that locus of control total accounts for 2.6% of the variation in geriatric depression (the criterion). This shows that the independent variable (the locus of control total) explained the variation in geriatric depression by 2.6%.

However, for the second model (model 2) the B value increases from .026 to .027 or 2.7% of the variance in geriatric depression. So, it explains that as the moderator was introduced in the model 2 therefore, the R-square improved from 2.6% to 2.7%. The adjusted R^2 explained the amount accounted for the dependent variable as well as the number of observations for the model and its generalization. Its values were very close to the value of R^2. In the Table 4.8 the difference in the model is a fair bit (0.027-0.026= 0.01 or 1%). This variation is a justification that, the existence of the moderator in the model contributed to fitness of the model since the R-square improved in Model-2 with the moderator as compare to Model 1 without a moderator. This is consistent with Guajarati (2009) which argued that, the more the variables in the model, the better the fitness of the model in other words the more the R-square of the model as seen in Model 2 of this study.

4.6.2 The Analysis of Variance on Impact of Locus of Control Total on Geriatric Depression with and without Religiosity as a Moderator

The analysis of variance table tests whether the model is significantly better at predicting the outcome by using the mean square of the model. The F-statistics represent the improvement in prediction of the model as obtained from the results in Table 4.9 where it also predicts the fitness of the models (labeled as 'Regression' in the Table 4.9) relative to the inaccuracy that might still exists in the model (labeled as 'Residual' in the Table 4.9). Therefore, Table 4.9 describes the analysis of variance on impact of locus of control total on geriatric depression with and without religiosity as a moderator.

Table 4.9

Analysis of Variance on impact of locus of control total on geriatric depression with and without religiosity as a moderator

Model	Tests	Sum of Squares	df	Mean Squares	F	Sig
1	Regression	6.591	2	3.295	5.124	.000*
	Residual	245.03	381	0.643		
	Total	251.62	383			
2	Regression	6.71	3	2.24	3.475	.001*
	Residual	244.90	380	0.64		
Total		251.62	383			

*significant at p<0.05,

The table 4.9 contains two sections, one for each model. The Model 1 analysis of this study has done to show the value F is 5.124 (p< .05), whereas, for Model 2 F value is 3.475 with (p< .05) which means that both values are significant at 0.05. From this result we can interpret that the final model significantly improves the prediction of the geriatric depression by the locus of control total.

4.6.3 Model parameters of Impact of Locus of Control Total on Geriatric Depression with and without Religiosity as a Moderator

In Multiple regressions the model takes the form of an equation that contains a coefficient of Beta for each predictor as seen in Table 4.10. The Table 4.10 provides the estimates for these Beta values which indicate the contribution of each predictor to the model.

Table 4.10
Model Parameters of impact of locus of control total on geriatric depression with and without religiosity as a moderator

Model		Unstandardized coefficient		Standardized coefficient		
	Variables	Beta	Std. Error	Beta	T	Sig
1	**(constant)**	2.553	0.262		9.762	.000*
	Locus of control total	0.103	0.044	0.120	2.367	.011*
2	**(constant)**	2.034	1.194		1.703	.008
	Locus of control total	0.249	0.330	0.288	0.755	0.45
	Religiosity	0.078	1.161	0.020	0.067	.947
	Locus of control total and religiosity	-0.143	0 .321	-.214	-0.445	.002*

The Beta value in Table 4.10 explained the relationship between geriatric depression and each of the predictor variables. The Beta coefficient indicates the direction of the relationship, where a positive parameter indicates a positive relationship between the predictor and the outcome variable and a negative coefficient represents a negative relationship between the dependent and independent variable. The Beta value of the variable locus of control total is positive as seen in the Table 4.10 with a value of 0.103. The second value of Beta is the interaction of religiosity as a moderator and the locus of control. The Beta coefficient value is negative as seen in Table 4.10 with a value of -0.143. This means that the moderator (religiosity) has a negative effect on the relationship of locus of control total and geriatric depression of the old folk in this study.

This can be explained when the level of locus of control total increases the geriatric depression decreases in the presence of religiosity. This is because as in the second model, the introduction of religiosity in the said relation reversed the relation, as the interaction of religiosity and locus of control total of old folks increases, the geriatric depression of the said people decreases. This means that old people who are religious at the same time have high level of locus of control overall score of their depression will reduce other things being equal. The parameter found is said to be significant since the p-value is less than 5% ($p < 0.05$) as seen in the Table 4.10. Therefore, the introduction of the moderator has a significant contribution to the model.

4.6.4 Bootstrapping of Impact of Locus of Control Total on Geriatric Depression with and without Religiosity as a Moderator

In order to increase the accuracy of data the process of bootstrapping is used ((Wood, 2004). Table 4.11 illustrated the bootstrapping effect on locus of control total on geriatric depression with and without religiosity as a moderator.

Table 4.11
Bootstrapping of Impact of locus of control total on geriatric depression with and without religiosity as a moderator

Bootstrap for Coefficients						
					95% confidence interval	
Model	B	Bias	Std. Error	Sig	Lower	Upper
Constant	2.55	.003	.153	.000	2.056	3.037
Locus of control total	.103	.000	.041	.012	.025	.184
Constant	2.034	-.043	1.218	.026	-550	4.17
Locus of Control total	.249	.012	.309	.207	-.287	.888
Religiosity	.078	.044	1.186	.916	-1.976	2.586
Locus of Control total and Religiosity	-.143	-.012	.300	.417	-766	.375

Table 4.11 refer to the bootstrapping of the impact of locus of control total on geriatric depression with and without moderator religiosity. Table 4.11 recommended that the results of the bootstrapping reinforced the results of the study. That eradicate any inconsistency of results or model consequences because of small sample size.

4.7 Impact of Internal Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

To see the impact of internal locus of control on geriatric depression with and without moderator which is the religiosity hierarchal regression analysis is used. In hierarchal regression two models are used. The model 1 is impact of internal locus of control on geriatric depression and model 2 is the impact of internal locus of control on geriatric depression with moderator religiosity.

4.7.1 Model Summary of Impact of Internal Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The Table 4.12 discussed the model summary of the impact of internal locus of control on geriatric depression with and without religiosity. There were two models to check the amount of variability in dependent variable because of criterion variable (Field, 2009).

Table 4.12

Model summary of Impact of internal locus of control on geriatric depression with and without religiosity as a moderator

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	.067	.005	.002	.810
2	.151	.023	.015	.804

The R-square result of the Model 1 as shown in Table 4.12, the value of R-square is .005 which means that the internal locus of control accounts for 0.5% of the variation in geriatric depression. This shows that the independent variable explained the variation in the geriatric depression by 0.5%.

However, as far as a second model (Model 2) is concerned, this value increases to 2.3% of the variance in geriatric depression. So, when the moderator introduced in the Model 2, this value increases to 2.3% of the variance in geriatric depression. Consequently, when the moderator was introduced in model 2, the R-square improved from 0.5% to 2.3%. In the above Table 4.12 the difference in the final model is (0.023-0.05=0.018 or 1.8%). This variation is the justification that the existence of moderator in the model contributed to fitness of the model since the R-square improved in the Model 2 with a moderator as compare to Model 1 without a moderator. This is in line with Guajarati (2009) which argued that, the more the variables in the model, the better the fitness of the model in other words the more the value of R-square of the model as seen in Model 2 of this study.

4.7.2 The Analysis of Variance on Impact of Internal Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The analysis of variance table tests whether the model is significantly better at predicting the outcome by using the mean square of the model.

Table 4.13
Analysis of Variance on Impact of internal locus of control on geriatric depression with and without religiosity as a moderator

Model	Tests	Sum of Squares	df	Mean Square	F	Sig
1	Regression	1.138	1	1.138	1.735	.003*
	Residual	250.487	382	0.656		
	Total	251.625	383			
2	Regression	5.719	3	1.906	2.946	.033*
	Residual	245.906	380	0.647		
	Total	251.625	383			

*significant at p<0.05

The model 1 of this study in Table 4.13 has F- statistics value of 1,735 with corresponding p-value of 0.003 (p< 0.05), whereas, the Model 2 has F-statistics value of 2.946 with p-value of 0.033 (p< 0.05) which means that both are significant at 5%. From this we can interpret that the final model significantly improves to predict the outcome variable which is geriatric depression.

4.7.3 Model parameters of Impact of Internal Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The Table 4.14 provides the estimates of the Beta values which indicates the contribution of each predictor to the models.

Table 4.14
Model Parameters of Impact of internal locus of control on geriatric depression with and without religiosity as a moderator

Model		Unstandardized coefficient		Standardized coefficient		
	Variables	Beta	Std. Error	Beta	T	Sig
1	**(constant)**	2.653	.146		18.158	.000*
	Internal locus of control	-0 .048	.036	-.067	-1.317	.003*
2	**(constant)**	1.531	.994		1.541	.004*
	Internal locus of control	.343	.243	.482	1.411	.048*
	Religiosity	1.097	.960	.279	1.142	.004*
	Internal locus of control and religiosity	-0.380	.235	-.683	-1.717	.003*

*significant at p<0.05

The Beta value of internal locus of control is negative as seen in the Table 4.14. The Beta coefficient indicates the direction of the relationship, where a positive parameter indicates a positive relationship between the predictor and the outcome variable and a negative coefficient represents a negative relationship between the dependent and independent variable. Thus in the Table 4.14 the Beta value is -0.048, this means that there is a negative relationship between level of internal locus of control of the people of Pakistan and geriatric depression of the old people in Pakistan. Therefore, it was concluded that the higher the level of internal locus of control of old people the lower the geriatric depression of the old people of Pakistan.

The second value of the Beta is the interaction of religiosity as a moderator and the internal locus of control. The value of beta coefficient is still negative as seen in Table 4.14 with the value of -0.380. This means that a moderator (religiosity) strengthens the relation of internal locus of control and geriatric depression of the old people in Pakistan. This means that old people who are religious at the same time have internal locus of control their depression will decreases other things being equal. The parameter said to be significant since the p-value is less than 5% ($p < 0.05$) as seen in Table 4.14. Therefore, the introduction of the moderator played a significant contribution to the model. In all the models, the independent variables have a significant impact on the dependent variable which is geriatric depression.

4.7.4 Bootstrapping of Impact of Internal Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The uncertainties of the inference are checked by using the process of bootstrapping **(**Wood, 2004). Table 4.15 explained the bootstrapping process of Impact of Internal locus of control on geriatric depression with and without religiosity as a moderator.

Table 4.15
Bootstrapping of Impact of internal locus of control on geriatric depression with and without religiosity as a moderator

Bootstrap for Coefficients						
					95% confidence interval	
Model	B	Bias	Std. Error	Sig	Lower	Upper
Constant	2.653	.001	.142	.000	2.385	2.943
Internal Locus of control	-.048	.000	.037	.200	-.124	.022
Constant	1.531	-.192	1.176	.138	-1.254	3.204
Internal Locus of Control	.343	045	.275	.148	-.049	1.002
Religiosity	1.097	.193	1.151	.284	-.494	3.851
Internal Locus of Control & Religiosity	-.380	-.045	.267	.100	-1.020	-.005

Table 4.15 refers to the bootstrapping of the impact of internal locus of control on geriatric depression with and without moderator religiosity. Table 4.15 endorses that the results of the bootstrapping reinforced the results of the study. That eliminate any contradiction of results or model significances because of small sample size.

4.8 Impact of External Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

Hierarchal regression analysis is used to check the impact of external locus of control on geriatric depression with and without moderator religiosity.

4.8.1 Model Summary of Impact of External Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The model summary of the analysis has 2 models. Model 1 refers to the first stage in the hierarchal regression when the only external locus of control was as a predictor variable. Model 2 refers to the final model in which external locus of control, religiosity and external locus of control religiosity as a moderator was included.

Table 4.16
Model summary of impact of external locus of control on geriatric depression with and without religiosity as a moderator

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	.290	.084	.082	.777
2	.310	.096	.089	.774

The Table 4.16 explains the values of the correlation coefficient between the predictors and outcome variable. The R^2 measured in the Table 4.16 focused on the amount of variability in the dependent variable as accounted for by the independent variable. In the first model R^2 value as seen in Table 4.16 is 0.84 which means that the external locus of control accounts for 8.4% of the variation in geriatric depression. However, for the second model this value increases to 0.096 or 9.6% of variance in geriatric depression. Therefore, when the moderator which is religiosity was introduced in the model 2, R square improves. Therefore, the R square improved from 8.4% to 9.6%. In the above table the difference in the final model is (0.096-0.084 = 0.012 or 1.2%) a justification that the existence of moderator in the model contributed to the fitness of the model. This is in line with Guajarati (2009) which argued that, the more the variables in the model, the better the fitness of the model in other words the more the value of R-square of the model as seen in Model 2 of this study.

4.8.2 The Analysis of Variance on Impact of External Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The analysis of variance table tests whether the model is the significantly better at predicting the outcomes by using mean squares.

Table 4.17
Analysis of Variance on impact of external locus of control on geriatric depression with and without religiosity as a moderator

Model	Tests	Sum of Squares	Df	Mean Square	F	Sig
1	Regression	21.181	1	21.181	35.111	.000**
	Residual	230.444	382	.603		
	Total	251.625	383			
2	Regression	24.129	3	8.043	13.435	.000**
	Residual	227.496	380	.599		
	Total	251.625	383			

*significant at p<0.05

The model 1 of Table 4.17 of this study has F statistics value of 35.111 and p-value of 0.000 which is less than (p< 0.05), whereas, the model 2 has F-statistics value of 13.435 with p- value of 0.000 (p< 0.05) which means that both are significant at less than 5%. From this we can interpret that the final model significantly improves to predict the outcome variable which is geriatric depression.

4.8.3 Model parameters of Impact of External Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The below mentioned Table 4.18 of model parameters give the estimates for Beta values standardized and unstandardized coefficients that indicates the individual contribution of each predictor to the models.

Table 4.18
Model Parameters of impact of external locus of control on geriatric depression with and without religiosity as a moderator

Model		Unstandardized coefficient		Standardized coefficient		
	Variables	Beta	Std. Error	Beta	t	Sig
1	**(Constant)**	1.791	.121		14.789	.000**
	External locus of control	0.188	.032	.290	5.925	.000**
2	**(Constant)**	2.092	.757		2.762	.000**
	External locus of control	.227	.203	.351	1.119	.023**
	Religiosity	-.285	.727	-.0072	-.392	.047**
	External locus of control and religiosity	-0.039	.195	-.072	-.199	.039**

*significant at p<0.05

The Beta value of the variable external locus of control is positive as seen in Table 4.18 with a value of 0.188. This means, there is a positive relationship between external locus of control of the people in Pakistan and geriatric depression of old people in Pakistan. Therefore, the higher the level of external locus of control of old people the higher the level of depression of the people.

The second value of Beta is the interaction of religiosity as a moderator and external locus of control. The coefficient value is negative as seen in Table 4.18 with a value of -0.039. This means that the moderator (religiosity) has a negative effect on the positive relation between external locus of control and geriatric depression of the old people in Pakistan. When the external locus of control increases the geriatric depression decreases in the presence of religiosity. Thus, as the interaction of religiosity and external locus of control of old people in Pakistan increases, the geriatric depression of said people decreases. This means that, old people who are religious at the same time have high level external locus of control their depression will reduce other things being equal. The parameter found is said to be significant since the p-value is less than 5% as seen in Table 4.18. Therefore, the introduction of the moderator played a significant contribution to the model.

4.8.4 Bootstrapping of Impact of External Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

Bootstrapping of Impact of external locus of control on geriatric depression with and without religiosity as a moderator is carried out to remove any uncertainties in the data **(**Wood, 2004). Table 4.19 explains the bootstrapping method.

Table 4.19
Bootstrapping of impact of external locus of control on geriatric depression with and without religiosity as a moderator

Model	Bootstrap for Coefficients					
					95% confidence interval	
Model	B	Bias	Std. Error	Sig	Lower	Upper
Constant	1.791	-.003	.143	.000	1.508	2.062
External Locus of control	0.188	.001	.035	.000	.119	.256
Constant	2.092	-.086	.908	.009	-.177	3.465
External Locus of Control	.227	.017	.213	.199	-.101	.759
Religiosity	-.285	.083	.876	.696	-.1.568	1.948
External Locus of Control and Religiosity	-0.039	-.017	.204	.816	-.553	.266

Table 4.19 refer to the bootstrapping of the impact of external locus of control on geriatric depression with and without moderator religiosity. Table 4.19 endorses that the results of the bootstrapping secure the results of the study. That remove any ambiguity of results or model imports because of small sample size.

4.9 Impact of Powerful Others Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

There are two models to study the impact of powerful others locus of control on geriatric depression with moderator and without a moderator.

4.9.1 Model Summary of Impact of powerful others locus of control on geriatric depression with and without religiosity as a moderator

The model summary of the analysis discussed the impact of powerful others locus of control on geriatric depression with and without depression in Table 4.20.

Table 4.20
Model summary of impact of powerful others locus of control on geriatric depression with and without religiosity as a moderator

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.050	.003	.000	.811
2	.125	.016	.008	.807

The R square measured the amount of the variability in the geriatric depression as accounted for by the predictor variables Field (2009). Going by the R^2 result of the Model 1 as seen in Table 4.20 therefore, the value is .003 which means that powerful others locus of control accounts for 0.3% of the variation in geriatric depression. It shows that the independent variable powerful others locus of control explained the variation in geriatric depression by 0.3%. However, for the second model the R^2 value increases to .016 or 1.6% of the variance in geriatric depression. Therefore, when the moderator was introduced in Model 2 the R-square improved by 0.3% to 1.6%. In the Table 4.20 the difference in the final model is a fair bit (1.6-0.3= 1.3%). This variation is a justification that, the existence of a moderator in the model contributed to fitness of the model since the R-square improved in the Model 2 with a moderator as compare to model 1 without a moderator. This is in line with Guajarati (2009) which argued that, the more the variables in the model, the better the fitness of the model.

4.9.2 The Analysis of Variance of Impact of Powerful Others Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The analysis of variance table predicts the fitness of the (labeled as 'Regression' in the table 4.21) relative to the inaccuracy that still exists in the model (labeled as 'Residual' in the table 4.21).

Table 4.21
Analysis of Variance on impact of powerful others locus of control on geriatric depression with and without religiosity as a moderator

Model	Tests	Sum of squares	df	Mean Square	F	Sig
1	Regression	20.181	1	13.352	34.121	.000*
	Residual	231.444	382	0.657		
	Total	251.625	383			
2	Regression	23.911	3	8.304	13.345	.000*
	Residual	227.714	380	0.652		
	Total	251.625	383			

*significant at p<0.05

The Model 1 of this study has F-statistics value of 34.121 with corresponding p-value is 0.000 (p< 0.05), whereas, the Model 2 the F-statistics value of 13.345 with p value is 0.000 (p< 0.05) which means both are significant at 5%. Thus the final model significantly improves to predict the outcome variable which is geriatric depression.

4.9.3 Model Parameters of Impact of Powerful Others Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The model parameters give the estimates for standardized and unstandardized coefficients Beta values that indicate the individual contribution of each predictor to the model.

Table 4.22
Model Parameters of impact of powerful others locus of control on geriatric depression with and without religiosity as a moderator

Model		Unstandardized Coefficients		Standardized Coefficient		
	Variables	Beta	Std. Error	Beta	t	Sig
1	**(Constant)**	2.336	.142		16.455	.000*
	Powerful others locus of control	0.042	.043	.050	0.979	.000*
2	**(Constant)**	3.441	.968		3.556	.000*
	Powerful others locus of control	-.169	.302	-.202	-.560	0.576
	Religiosity	-1.069	.935	-.272	-.1.143	0.254
	Powerful others locus of control and religiosity	0.206	.293	.300	.703	0 .483

*significant at $p<0.05$

The Beta value in the Table 4.22 enlightened the relationship between geriatric depression and each predictor variable. The Beta value of powerful others locus of control is positive as seen in Table 4.22 with a value of 0.042. This means that there is a positive relationship between powerful others locus of control of the people in Pakistan and geriatric depression of the old people in Pakistan. Therefore, the higher the level of powerful others locus of control scores of old people the higher the depression of the old people.

The second value of the Beta is the interaction of religiosity as a moderator and powerful others locus of control. The coefficient value is positive as seen in the Table 4.22 with a value of 0.206. This means the moderator (religiosity) has no effect on the positive relation between level of powerful others locus of control and geriatric depression of the old people in Pakistan. When the level of powerful others locus of control increases depression also increases, which means that a moderator (religiosity) not playing any role in the relation and the relationship remain the same. This means that old people who are religious at the same time have locus of control powerful others their depression will increase, other things

being equal. The Parameter found is said to be insignificant since the p- value is more than 5% as seen in Table 4.22. Therefore, the introduction of the moderator does not play a significant contribution to the model.

4.9.4 Bootstrapping of Impact of Powerful Others Locus of Control on Geriatric Depression with and without Religiosity as a Moderator

The uncertainties of the inference are checked by using the process of bootstrapping (Wood, 2004). Table 4.23 explained the bootstrapping process of Impact of Internal locus of control on geriatric depression with and without religiosity as a moderator.

Table 4.23
Bootstrapping of impact of powerful others locus of control on geriatric depression with and without religiosity as a moderator

Bootstrap for Coefficients						
					95% confidence interval	
Model	B	Bias	Std. Error	Sig	Lower	Upper
Constant	2.336	-.003	.142	.000	2.105	2.55
Powerful others Locus of control	0.042	.001	.043	.248	-.029	.114
Constant	3.441	-.040	.968	.000	1.510	5.329
Powerful others Locus of Control	-.169	.011	.302	.567	-.831	.455
Religiosity	-1.069	.038	.935	.192	-2.866	.820
Powerful others Locus of Control and Religiosity	0.206	-.010	.293	.475	-.401	.846

*significant at p<0.05

Table 4.23 refer to the bootstrapping of the impact of powerful others locus of control on geriatric depression with and without moderator religiosity. Table 4.23 sanctions that the results of the bootstrapping sheltered the results of the study. That confiscate any vagueness of results or model significances because of small sample size.

4.10 Impact of Demographic Variables (age, family size, number of children and socioeconomic status) on Geriatric Depression

Multiple regression is used to see the impact of demographic variable such as age, family size, number of children, and socioeconomic status.

4.10.1 Model Summary of Impact of Demographic Variables (age, family size, number of children and socioeconomic status) on Geriatric Depression

The model summary of the analysis has 1 model. Model 1 consists of demographic variables as predictor variables.

Table 4.24
Model summary of impact of demographic variables on geriatric depression

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.271	.074	.066	.783

Model summary Table 4.24 presents the value of the correlation coefficient between the predictors and the outcome variable (Field, 2009). Going by the R^2 result of the Model 1 as seen in Table 4.24, therefore, the value is 0.074, which means that demographic variables, i.e. gender, education, family size, marital status, children and socioeconomic status accounts for 7.4% of the variation in geriatric depression. The adjusted R^2 defines the wellness and generalization of the model. Its value was very close to the value of R^2. It is the justification of the fitness of the model. The more the variables the better the fitness of the model in other words the more the R-square of the model as seen in the Table 4.26 of this study. This is in line with Guajarati (2009).

4.10.2 The Analysis of Variance on Impact of Demographic Variables (age, family size, number of children and socioeconomic status) on Geriatric Depression

The analysis of variance table tests whether the model is significantly better at predicting the outcomes by using mean square of the model. The F-statistics represent the improvement in prediction of the model as obtained from the results in Table 4.25 where it also predicts the fitness of the model (labeled as 'Regression' in the table) relative to the inaccuracy that still exists in the model (labeled as 'Residual' in the Table 4.25).

Table 4.25
Analysis of Variance on impact of demographic variables on geriatric depression

Model	Tests	Sum of Squares	df	Mean Square	F	Sig
1	Regression	18.543	3	6.181	10.077	.000**
	Residual	233.082	380	.613		
	Total	251.625	383			

*significant at p<0.05

The Table 4.25 of analysis of variance of this study has F-statistics value of 10.077 with corresponding p-value is (p< 0.05). Which means that it is significant at 5%. Therefore, the interpretation of the above model is significantly predicted the outcome variable which is geriatric depression.

4.10.3 Model parameters of Impact of Demographic Variables (age, family size, number of children and socioeconomic status) on Geriatric Depression

The model parameters give the estimates for Beta values that indicates the contribution of each predictor to the model as seen in Table 4.26.

Table 4.26
Model Parameters of impact of demographic variables on geriatric depression

Model 1	**Unstandardized Coefficients**		**Standardized Coefficient**		
Variables	Beta	Std. Error	Beta	t	Sig
(Constant)	2.741	.225		12.201	.000**
Family size	0.014	.058	.017	3.203	.032**
Children	0.141	.055	.184	2.562	.011**
Socioeconomic	-0.280	.059	-.264	-4.788	.000**

*significant at p<0.05

The Beta value in the above Table 4.26 explained the relationship between geriatric depression and each of the predictor variables. The Beta value of family size is positive as seen in Table 4.26 with a value of 0.014. This means that, there is a positive relation between the family size of the people in Pakistan and geriatric depression of old people in Pakistan. Therefore, the more the family size of the older people the higher the geriatric depression of the people.

The second Beta value is of number of children is negative as seen in Table 4.26 with a value of .141. This means that, there is a positive relation between the number of children of the people in Pakistan and geriatric depression of old people in Pakistan. Therefore, the higher the number of children of the older people the higher the geriatric depression of the people in Pakistan. The third Beta value of socioeconomic status is negative as seen in Table 4.26 with a value of -0.280. This means that, there is a negative relation between the socioeconomic status of the people in Pakistan and geriatric depression of old people in Pakistan. Therefore, the higher the socioeconomic status of older people the lower the geriatric depression of the people in Pakistan. The parameters found is said to be significant since the p- value is less than 5% of all the variables as seen in Table 4.26. Therefore, all the predictors are making a contribution to the model. Overall all the predictors (independent) demographic variables have a significant impact on the dependent variable which is geriatric depression.

4.10.4 Bootstrapping of Impact of Demographic Variables (age, family size, number of children and socioeconomic status) on Geriatric Depression

Bootstrapping of Impact of demographic variables (family size, number of children and socioeconomic status on geriatric depression is conceded to remove any uncertainties in the inferences (Wood, 2004). Table 4.27 explained the procedure.

Table 4.27
Bootstrapping of impact of demographic variables on geriatric depression

Bootstrap for Coefficients						
					95% confidence interval	
Model	B	Bias	Std. Error	Sig	Lower	Upper
Constant	2.741	.004	.247	.000	2.259	3.231
Family Size	0.014	-.002	.068	.000	-.110	.130
Children	0.141	.000	.058	.001	.028	.254
Socio economic	-0.280	.001	.050	.000	-.376	-.180

Table 4.27 refers to the bootstrapping of the impact of demographics on geriatric depression with and without moderator religiosity. Table 4.27 endorses that the results of the bootstrapping endorsed the results of the study. That eradicates any uncertainty of results or model affectivity because of small sample size.

4.11 Impact of Gender, Education and Marital Status on Geriatric Depression

Independent t-test and ANOVA were conducted to test and compare the differences between the two and three groups in terms of their level of depression accordingly.

4.11.1 Impact of Gender on Geriatric Depression

Independent Sample t-test was used to check the impact of gender differences of the old people in geriatric depression.

Table 4.28
Summary of t-test result on impact of gender on geriatric depression

	Gender	N	Mean	Std. dev	t	Sig
Geriatric depression	Male	192	2.50	0.857	.821	0.412
	Female	192	2.43	0.753		

*significant at p<0.05

Table 4.28 showed that the difference of mean and standard deviation between male older people depression and female older people depression was relatively small; (2.50 compared to 2.43). The findings showed that there was no significant difference in geriatric depression level between male and female old folk, $t_{(382)} = 0.821$, $p > .05$. As a result, it is indicating that there was no significant difference in the level of geriatric depression between male and female old folk as depicted in Table 4.28.

4.11.2 Bootstrapping of Gender on Geriatric Depression

Bootstrapping was used to check the impact of gender on geriatric depression (Wood, 2004). Table 4.29 explains the process of bootstrapping.

Table 4.29
Bootstrapping of Gender on geriatric depression

Bootstrap for Coefficients						
					95% confidence interval	
Model	Gender	N	Bias	Std. Error	Lower	Upper
Geriatric depression	Male	.068	.000	.082	-.091	.225
	Female	.068	.000	.082	-.091	.225

Table 4.29 refers to the bootstrapping of the impact of gender on geriatric depression. Table 4.29 sanctions that the results of the bootstrapping reinforce the results of the study. That removes any doubt of results or model imports because of small sample size.

4.11.3 Impact of Marital Status on Geriatric Depression

One-way ANOVA was conducted to see the impact of marital status on geriatric depression of old people of Pakistan. Table 4.30 showed the description of result revealing a significant difference of marital status between four different marital status groups.

Table 4.30
Mean and standard deviation of geriatric depression with respect to Marital Status

Geriatric depression	N	%	Mean	Std. deviation
Married	168	43	2.29	.863
Unmarried	168	42	2.71	.702
Divorce	32	8	2.41	.875
Widow	16	7	1.94	.250

From the results, mean scores for respondents of all four groups have a significant difference on the level of depression among older people of Pakistan. Summary result of one- way ANOVA and multiple comparison of results are shown in Table 4.31 and Table 4.32.

Table 4.31
Summary of ANOVA result on impact of marital status on geriatric depression

	Sum of Squares	Df	Mean Square	F	Sig
Between groups	20.397	3	6.799	11.174	.000*
Within groups	231.228	380	.608		
Total	251.625	383			

*significant at p<0.05

Table 4.31 showed that depression levels at least one is different between the four groups of marital status with p is less than .05 between the four groups [$Fc_{3,380} = 11.174$, $p < .05$]. Since there was a significant difference between these four marital status groups on their level of depression, the researcher examined where the difference of depression level existed. According to the findings of the result F-ratio signified that population means were probably not all equal. Which suggested that any pairs of means were unequal and where the significant differences needed to be worked out through post hoc test using Tukey HSD?

The results depicted in Table 4.32 signified that there was significant difference of respondent's depression level between groups. The depression level of unmarried respondents is significantly different as compared to married respondents. Similarly, the level of depression of widow respondents is significantly different as compared to

unmarried. Thus, it showed that marital status has a significant effect on the level of depression of older people in Pakistan.

Table 4.32
Summary of Multiple comparison results of four marital status groups

Marital Status	Status	Mean difference	Std. Error	Sig
Married	Unmarried	-.429*	.085	.000
	Divorced	-.121	.150	.854
	Widow	.348	.204	.322
Unmarried	Married	.429*	.085	.000
	Divorced	.308	.150	.173
	Widow	.777*	.204	.001
Divorced	Married	.121	.150	.854
	Unmarried	-.308	.150	.173
	Widow	.469	.239	.204
Widow	Married	-.348	.204	.322
	Unmarried	-.777*	.204	.001
	Divorce	-.469	.239	.204

*significant at p<0.05

4.11.4 Bootstrapping of Marital Status on Geriatric Depression

The uncertainties of the inference are checked by using the process of bootstrapping (Wood, 2004). Table 4.33 explained the bootstrapping process of Impact of marital status on geriatric depression with and without religiosity as a moderator.

Table 4.33
Bootstrapping of Marital status on geriatric depression

Bootstrap for Coefficients						
					95% confidence interval	
Marital Status	Status	Mean difference	Bias	Std. Error	Lower	Upper
Married	Unmarried	-.429	.000	.086	-.598	-.260
	Divorced	-.121	-.001	.170	-.437	.226
	Widow	.348	.000	.092	.189	.541
Unmarried	Married	.429	.000	.086	.260	.598
	Divorced	.308	-.001	.164	-.004	.633
	Widow	.777	.000	.084	.632	.955
Divorced	Married	.121	.001	.170	-.226	.437
	Unmarried	-.308	.001	.164	-.633	.004
	Widow	.469	.001	.167	.143	.785
Widow	Married	-.348	-.000	.092	-.541	-.183
	Unmarried	-.777	-.000	.084	-.955	-.632
	Divorce	-.469	-.001	.167	-.785	-.143

Table 4.33 refer to the bootstrapping of the impact of marital status on geriatric depression. Table 4.33 endorses that the results of the bootstrapping secure the results of the study. That removes any ambiguity of results or model imports because of small sample size.

4.11.5 Impact of Education on Geriatric Depression

To see the impact of education on geriatric depression one-way ANOVA was applied. Table 4.34 showed the explanation of result enlightening a significant difference of level of education among seven different educational groups. The mean for every year of education was obtained through the descriptive analysis as depicted in Table 4.34.

Table 4.34
Mean and standard deviation of geriatric depression with respect to years of education

Geriatric depression	N	%	Mean	Std. deviation
Primary	96	25	2.13	.417
Middle	16	4	2.50	.549
Matric	16	4	1.94	.998
F.A./ F.Sc.	64	17	2.73	.733
B.A./B.Sc.	112	29	2.70	.794
M.A./M.Sc.	48	13	2.42	.508
M.Phil./ Ph.D.	32	8	2.50	.811

From the result explained in Table 4.34 depression score for respondents who had level of education primary and matric were at minimal difference at 2.13 and 1.94 respectively. Meanwhile, the mean score for other educational years respondents who had Middle, F.A. / F.Sc., B.A./B.Sc., M.A./ M.Sc. and M.Phil./ Ph.D. had also very minimal difference. Summary results of one-way ANOVA and multiple comparisons are shown in Table 4.35 and 4.36.

Table 4.35
Summary of ANOVA result on impact of education on geriatric depression

	Sum of Squares	Df	Mean Square	F	Sig
Between groups	26.358	6	4.393	7.352	.000*
Within groups	225.267	377	.598		
Total	251.625	383			

*significant at p<0.05

Table 4.35 exhibited that there is an effect of education on depression $F_{(6,377)} = 7.352$, p<.05 since there was a significant difference between these seven educational groups on their level of depression, the researcher examined where the difference of depression level existed. According to the result, F-ratio signified that population means were probably not all equal. This suggested that any pair of means was unequal and where the significant differences needed to be worked out through post hoc test using Tukey HSD.

The results are depicted in Table 4.36. The result signified that there was significant difference of respondent's depression level between different educational groups. The depression level of the respondents who had education level of F.A / F.Sc, B .A / B.Sc. and M.A / M.Sc. was higher compared to the respondents who had education below and above. Meanwhile, the level of depression was lower for respondents had B.A / B.Sc. as compared to others respondents who had matric education. Similarly, level of depression of respondents had 12 years of education was lower compared to respondents had primary education. Consequently, respondents had B.A / B.Sc. education their level of depression was higher in contrast to respondents had primary and matric level of education. This means that the level of education has an impact on geriatric depression of people of Pakistan.

Table 4.36
Summary of Multiple comparison results of seven educational groups

Education Level	Years of Education	Mean difference	Std. Error	Sig
Primary	Middle	-.375	.209	.551
	Matric	.188	.209	.973
	F.A/F.Sc	-.609*	.125	.000
	B.A/B.Sc.	-571*	.108	.000
	M.A/M.Sc.	-.292	.137	.335
	M.Phil./ PhD	-.375	.158	.211
Middle	Primary	.375	.209	.551
	Matric	.563	.273	.380
	F.A/F.Sc	-.234	.219	.932
	B.A/B.Sc.	-.196	.207	.964
	M.A/M.Sc.	.083	.223	1.000
	M.Phil./ PhD	.000	.237	1.000
Matric	Primary	-.188	.209	.973
	Middle	-.563	.273	.380
	F.A/F.Sc	-.797*	.216	.005
	B.A/B.Sc.	-.759*	.207	.005
	M.A/M.Sc.	-.479	.223	.327
	M.Phil./ PhD	-.563	.237	.211
F.A./F.Sc.	Primary	.609*	.125	.000
	Middle	.234	.216	.932
	Matric	.797*	.216	.005
	B.A/B.Sc.	.038	.121	1.000
	M.A/M.Sc.	.318	.148	.324
	M.Phil./ PhD	.234	.167	.801
B.A/B.Sc.	Primary	.571*	.108	.000
	Middle	.196	.207	.964
	Matric	.759*	.207	.005
	F.A./F.Sc.	-.038	.121	1.000
	M.A/M.Sc.	.280	.133	.356
	M.Phil./ PhD	.196	.155	.866
M.A/M.Sc.	Primary	.292*	.137	.335
	Middle	-.083	.223	1.000
	Matric	.479	.223	.327
	F.A./F.Sc.	-.318	.148	.324
	B.A/B.Sc.	-.280	.133	.356
	M.Phil./ PhD	-.083	.176	.999
M.Phil./ Ph.D.	Primary	.375	.158	.211
	Middle	.000	.237	1.000
	Matric	.563	.237	.211
	F.A./F.Sc.	-.234	.167	.801
	B.A/B.Sc.	-.196	.156	.866
	M.A/M.Sc.	.083	.176	.999

*significant at p<0.05

4.11.6 Bootstrapping of Education on Geriatric Depression

Bootstrapping on Impact of education on geriatric depression with and without religiosity as a moderator is carried out to remove any uncertainties in the data (Wood, 2004). Table 4.37 explains the bootstrapping method.

Table 4.37
Bootstrapping of Education on geriatric depression

Bootstrap for Coefficients						
					95% confidence interval	
Education Level	Years of Education	Mean difference	Std. Error	Bias	Lower	Upper
Primary	Middle	-.375	.385	.004	-1.122	.383
	Matric	.188	.252	.005	-.309	.676
	F.A/F.Sc	-.609*	.128	.003	-.855	-.352
	B.A/B.Sc.	-571*	.081	.000	-.723	-.411
	M.A/M.Sc.	-.292	.123	.002	-.529	.045
	M.Phil./ PhD	-.375	.101	.000	-.571	-.179
Middle	Primary	.375	.385	-.004	.383	-1.122
	Matric	.563	.454	-.010	.676	-.309
	F.A/F.Sc	-.234	.402	.002	-.352	-.855
	B.A/B.Sc.	-.196	.390	-.004	-.411	-.723
	M.A/M.Sc.	.083	.398	-.002	.045	-.529
	M.Phil./ PhD	.000	.394	-.004	-.179	-.571
Matric	Primary	-.188	.252	.005	-.676	.309
	Middle	-.563	.454	.010	-1.450	.333
	F.A/F.Sc	-.797*	.274	.008	-1.319	-.245
	B.A/B.Sc.	-.759*	.256	.006	-1.252	-.249
	M.A/M.Sc.	-.479	.275	.007	-1.008	.062
	M.Phil./ PhD	-.563	.266	.006	-1.073	.14
F.A./F.Sc.	Primary	.609*	.128	-.003	.352	.855
	Middle	.234	.402	.002	-.537	1.038
	Matric	.797*	.274	-.008	.245	1.319
	B.A/B.Sc.	.038	.140	-.002	-.241	.316
	M.A/M.Sc.	.318	.167	.000	-.015	.646
	M.Phil./ PhD	.234	.151	-.002	-.064	.527
B.A/B.Sc.	Primary	.571*	.081	.000	.411	.723
	Middle	.196	.390	.004	-.560	.985
	Matric	.759*	.256	-.006	.249	1.252
	F.A./F.Sc.	-.038	.140	.002	-.316	.241
	M.A/M.Sc.	.280	.134	.002	-.020	.543
	M.Phil./ PhD	.196	.116	.000	-.036	.421
M.A/M.Sc.	Primary	.292*	.123	-.002	-.045	.529
	Middle	-.083	.398	.002	-.869	.700
	Matric	.479	.275	-.007	-.062	1.008

	F.A./F.Sc.	-.318	.167	.000	-.646	.015
	B.A/B.Sc.	-.280	.134	-.002	-.543	-.020
	M.Phil./ PhD	-.083	.146	-.002	-.380	.201
M.Phil./ Ph.D.	Primary	.375	.101	.000	-.179	.571
	Middle	.000	.394	.004	-.776	.800
	Matric	.563	.266	-.006	.033	1.073
	F.A./F.Sc.	-.234	.151	.002	-.527	.064
	B.A/B.Sc.	-.196	.116	.000	-.421	.036
	M.A/M.Sc.	.083	.146	.002	-.201	.380

Table 4.37 refers to the bootstrapping of the impact of education on geriatric depression. Table 4.37 endorses that the results of the bootstrapping secure the results of the study. That removes any ambiguity of results or model imports because of small sample size.

4.11.7 Impact of Age on Geriatric Depression

To see the impact of age on geriatric depression one-way ANOVA was applied. Table 4.38 showed the explanation of result enlightening a significant effect of age between three different age groups. The mean for every year of age was obtained through the descriptive analysis as depicted in Table 4.38.

Table 4.38
Mean and standard deviation of geriatric depression with respect to years of age

Geriatric depression	N	%	Mean	Std. deviation
60-64	144	38	2.40	.712
65-69	224	58	2.55	.840
70-74	16	4	1.94	.998

From the result depicted in Table 4.38 depression score for respondents who had ages of 60-64 and 65-69 were at minimal difference at 2.40 and 2.55 respectively. Meanwhile, the mean score for other 70-74 years' respondents had a mean score of 1.94 have a significant difference. Summary results of one-way ANOVA are shown in Table 4.39.

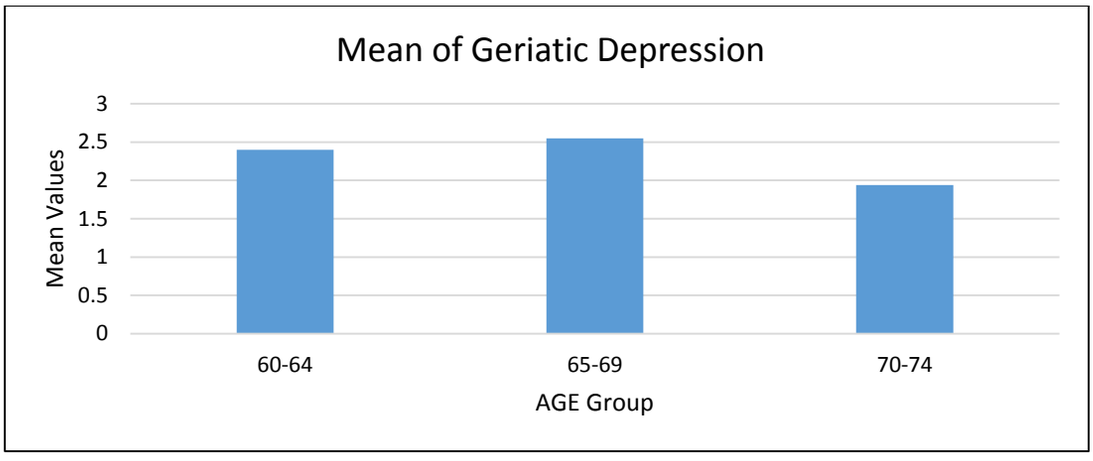

Figure 4.1. Mean of Geriatric Depression

Fig 4.1 demonstrates the mean of depression score for respondents of different age groups. It is evident from the Fig 4.1 that there is a minimal difference among mean scores of ages 60-64 and 65-69. While the mean score of age group 70-74 years has a significant difference. Table 4.39 explains the summary of ANOVA result on impact of age on geriatric depression.

Table 4.39
Summary of ANOVA result on impact of age on geriatric depression

	Sum of Squares	Df	Mean Square	F	Sig
Between groups	6.893	2	3.446	5.365	.005*
Within groups	244.732	381	.642		
Total	251.625	383			

*significant at p<0.05

Table 4.39 showed that depression levels were significantly different between the three age groups [F $(_{2,381})$ = 5.365, p<.05]. Since there was a significant difference between these three age groups on their level of depression, the researcher examined where the difference of depression level existed. According to the findings of the result F-ratio signified that population means were probably not all equal. This suggested that any pairs of means were unequal and where the significant differences needed to be worked out through post hoc test using Tukey HSD.

The results depicted in Table 4.40. The results signified that there was significant difference of respondent's depression level between groups. There exists a significant difference of level of depression of between 70-74 and 65-69 age groups of respondent. Thus, it showed that age groups have a significant effect on the level of depression of older people in Pakistan.

Table 4.40
Summary of Multiple comparison results of the depression level of three age groups

Age groups	Age	Mean difference	Std. Error	Sig
60-64	65-69	-.158	.086	.157
	70-74	.458	.211	.078
65-69	60-64	.158	.086	.157
	70-74	.616*	.207	.009
70-74	60-64	-.458	.211	.078
	65-69	-.616*	.207	.009

*significant at p<0.05

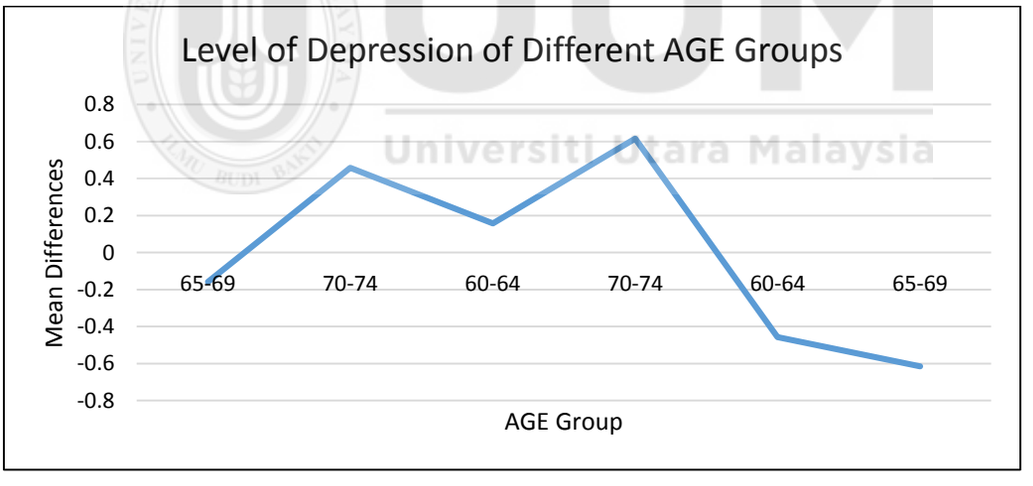

Figure 4.2. Level of Depression of Different Age Groups

Fig 4.2 illustrates the mean differences of level of depression between different age groups. There is a significant difference exits between levels of depression among age groups. In the Fig 4.2 trends are showing the significant difference between 70-74 and 65-69 age groups of respondent. Thus, it showed that age groups have a significant effect on the level of depression of older people in Pakistan.

4.11.8 Bootstrapping of Age on Geriatric Depression

Bootstrapping of Age on geriatric depression has been carried out to remove the uncertainties of data (Wood, 2004).

Table 4.41
Bootstrapping of Age on geriatric depression

Bootstrap for Coefficients						
					95% confidence interval	
Age groups	age	Mean difference	Std. Error	Bias	Lower	Upper
60-64	65-69	-.158	.081	.000	-.317	-.002
	70-74	.458	.257	.002	-.068	.961
65-69	60-64	.158	.081	.000	-.002	.317
	70-74	.616	.257	-.002	.090	1.118
70-74	60-64	-.458	.257	.002	-.961	.069
	65-69	-.616	.257	.002	-1.118	-.090

Table 4.41 refers to the bootstrapping of the impact of age on geriatric depression. Table 4.41 endorses that the results of the bootstrapping secure the results of the study. That removes any ambiguity of results or model imports because of small sample size.

4.12 Summary of the Findings

This chapter discussed the findings of the present study. The study is done by using cross sectional data of 384 older people from the big state of Pakistan (Punjab). Before starting the data analysis, the basic assumptions of the data analysis procedure were accomplished. SPSS 22 version was used to do the data analysis.

In the process of empirical analysis, correlation and hierarchical multiple linear regression were employed. The results of this study supported majority of the hypothesis in the testing. Apparently, the findings support the hypotheses in the testing. However, Table 4.42 reported the findings related to hypothesis testing procedure at 0.05, level of significance.

Table 4.42
Summary of the Hypotheses testing results

H	Hypothesis statements	Independent Variable	Dependent Variable	Moderator	Statistical Technique	Decision
H_1	Loneliness has a significant effect on geriatric depression	Loneliness	Geriatric depression		Multiple regression	Significant
H_2	Locus of control total has a significant effect on geriatric depression	Locus of control total	Geriatric depression		Multiple regression	Significant
H_{2a}	Internal locus of control has a significant effect on geriatric depression	Internal Locus of control	Geriatric depression		Multiple regression	Significant
H_{2b}	External locus of control has a significant effect on geriatric depression	External Locus of control	Geriatric depression		Multiple regression	Significant
H_{2c}	Powerful others locus of control has a significant effect on geriatric depression	Powerful others Locus of control	Geriatric depression		Multiple regression	Significant
H_3	Religiosity moderates the relationship between loneliness and geriatric depression	loneliness	Geriatric depression	Religiosity	Multiple regression	Significant
H_4	Religiosity moderates the relationship between locus of control total and geriatric depression	Locus of control total	Geriatric depression	Religiosity	Multiple regression	Significant
H_{4a}	Religiosity moderates the relationship between internal locus of control and geriatric depression	Internal Locus of control	Geriatric depression	Religiosity	Multiple regression	Significant
H_{4b}	Religiosity moderates the relationship between external locus of control and geriatric depression	External Locus of control	Geriatric depression	Religiosity	Multiple regression	Significant
H_{4c}	Religiosity moderates the relationship between powerful others locus of control and geriatric depression	Powerful others Locus of control	Geriatric depression	Religiosity	Multiple regression	Insignificant
H_5	Demographic variables has a significant effect on geriatric depression	Number of children, family size, and socio-economic status	Geriatric depression		Multiple regression	Significant
H_{5a}	Demographic variables has a significant effect on geriatric depression	Gender	Geriatric depression		T-test	Insignificant
H_{5b}	Demographic variables has a significant effect on geriatric depression	Age, Education and Marital status	Geriatric depression		Onaway ANOVA	Significant

In conclusion, the results of this study obtained from Pearson correlation and hierarchical regression, T- test and Onaway ANOVA analyses revealed that while certain hypotheses were supported by the empirical results, and the rest was found not being supported. In specific terms, Table 4.34 showed that H_1, H_2, H_{2a}, H_{2b}, H_{2c}, H_3, H_4, H_{4a}, H_{4b} and H_5 were supported, Whereas, H_{4c} and H_{5a} were not supported.

The hypothesis supported variable like loneliness, locus of control total, external locus of control, internal locus of control, powerful others locus of control, demographic variables and religiosity are very crucial in the life of older people in Pakistan. The results of the study are supported in the growth and favor of older people in case of Pakistan. Further discussions and conclusions relating to these findings and their practical and theoretical implications have been elaborated in the next chapter.

CHAPTER FIVE

DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Introduction

This chapter explains and discusses the findings of the study and relates it to previous findings. Also, this chapter integrates the finding inferences, its limitation, suggestions for future studies as well as the conclusion of the chapter. To review, this research test hypothesis by looking at the hierarchal regression and influence of independent variables, moderating variable and the dependent variable. In this manner, the following objectives of the study is

5.2 Objectives of the Study

1. To examine the impact of loneliness on depression.
2. To examine the impact of locus of control on depression.

2a. To examine the impact of internal locus of control on depression.

2b. To examine the impact of external locus of control on depression.

2c. To examine the impact of powerful others locus of control on depression.

3. To describe the moderating effect of religiosity on the impact of loneliness on depression.
4. To examine the moderating effect of religiosity on the impact of locus of control on depression.

4a. To examine the moderating effect of religiosity on the impact of locus of control internal on depression.

4b. To examine the moderating effect of religiosity on the impact of locus of control external on depression.

4c. To examine the moderating effect of religiosity on the impact of locus of control powerful others on depression.

5. To examine the impact of demographics such as Gender, Age, Education, Family size, Marital status, No of children and Socioeconomic status on the level of depression.

5.3 Discussions of the Findings

The main aim of this study is to investigate the impact of loneliness and locus of control on geriatric depression and how religiosity as a moderator effect their impact on geriatric depression of older people in Pakistan. The research is based on quantitative research design using questionnaire responses of 384 respondents.

5.3.1. Impact of Loneliness on Geriatric Depression

In order to achieve the first objective of this study regarding the effect of loneliness on geriatric depression, the paths regression between loneliness, geriatric depression was examined. The findings revealed that loneliness had a significant positive correlation with the geriatric depression. It is indicated that when the level of loneliness among older population increase, the level of depression also increases. Hierarchal regression showed that loneliness has a positive impact on geriatric depression. Thus, result illustrates that when there is an increase in the level of loneliness there is also an increase in the level of depression in older people of Pakistan. This finding, in turn, gives emphasis the negative effect of loneliness on geriatric depression.

Findings of the present study is consistent with the previous researches signifying the relationship between loneliness and depression such as Allen and Sigafoos (2000), Baskin, *et al*., (2010), Bettmann (2006), Daniel *et al.,* (2009), Erozkan, (2011), Grygiel, *et. al.,* (2013), Naik and Sundaramoorthy, (2016b), Singh, (2015), Stek, *et al*., (2005); Vanhalst,

et. al., (2009) and Wei, *et al*., (2005), who emphasized on the positive relation between the level of loneliness and geriatric depression, if the level of loneliness increases level of geriatric depression also increases. Thus, as per the results of the current research, loneliness is one of the leading factors in old age that is significantly related with depression.

Findings of the current study could be interpreted that the reason behind the relationship between loneliness and depression is when the person is getting old, his or her life go through certain changes. Old people lose their energy that was their power in young age. As they reached at the time of retirement, their social circle gets reduced. They kept themselves in their houses alone. Their children might move to other places to pursue better future. Some of them also lose their partners. Their kids have little time to give them. All these are the contributing factor in developing loneliness in old age in the case of Pakistan. Moreover, due to loneliness, negative thoughts prevail over older people and might lead to depressive feelings. Therefore, relating this finding to the Beck Theory of Depression (1979), it could be illustrated that loneliness and consequent negative thoughts are the contributing factor towards old age depression.

5.3.2 Impact of Locus of Control Total on Geriatric Depression

In order to fulfill the second objective of the present study highlighting the relationship between level of locus of control (total scale) and geriatric depression, hierarchical regression was computed. The second objective of the study was further divided into three sub objectives. These were intended to see the effects of internal, external and powerful others locus of control on geriatric depression. On the whole, result of the regression analysis results illustrated the positive impact of locus of control total on geriatric depression among older adults.

The findings exhibited by the present research is consistent with the findings of previous studies such as Afifi (2007), Jaswal and Dewan (1997), Naik and Sundaramoorthy (2016a), Zawawi and Hamaideh (2009), illustrating the positive relationship between depression and locus of control. Hence, all the previous researches and the current research strengthened that there is a positive relation between level of locus of control total and depression. As the level of locus of control (total) increases, geriatric depression also increases among older population.

The main logic ahead this reasoning is as the growing population is increasing in Pakistan, elderly people are facing the problem of having no future securities when they are reaching to their age of retirement. They have no social welfare programs that will help them in their future. They have to face many problems such as living alone, economic constrains and loss of life partner. These contributing factors will lead them to lose their control over themselves and develop depression in their old age. Therefore, the present findings in turn supported the effect of locus of control total on geriatric depression, in the case of Pakistan; however, it is an important factor while dealing with old age. Beck cognitive theory (1979), postulate a strong effect of the cognitions that plays important role in the life of older people. Circumstances of life turn old people to think in the way that they lose control on their circumstances and thus develop depression.

5.3.2.1 Impact of Internal Locus of Control on Geriatric Depression

In order to measure *2a* objective of the present study hypothesizing the relationship between internal locus of control and geriatric depression, the statistical analysis was computed. The analysis reported a negative impact of internal locus of control on geriatric depression. This finding is supported by previous studies such as Bagherian, Ahmadzadeh, and Baghbanian (2009), Moshki and Cheravi (2016), Valdovinos and Gonzalez (2005),

Valdovinos, Gonzalez, Echeverry, and Kermah, (2006) and Wardle, *et al.,* (2004). Consequently, the findings of these previous researches and the present research focused on the negative relation between internal locus of control and depression. The respondent who scored high on the scale measuring internal locus of control shows low scores on the scale measuring depression. It could be interpreted from the current findings that the individuals who take personal responsibility for their actions are less likely to develop depression. Hence, the older individuals of Pakistan who are high in internal locus of control suffer from low level of depression.

Furthermore, the main reason behind this finding and all the previous finding is that an individual with an internal locus of control have a tendency to be less affected by others. They are also usually more interested to accomplish. A person with internal locus of control prompts a prominent feeling of self-governance and more pleasure. They have faith in that the consequences of their activities are an outcome of their own particular struggles and capabilities. They have confidence that solid work and individual capacities prompts positive results. Consequently, these persons infer supports they get from their surroundings as dependent upon their own behavior. For internal locus of control people, key associations exist between behavior and consequences, and between outcome and personal effort. This trust involves that they are rulers of their destinies. So, they have less chance to develop depression, that's why internality is negatively correlated with depression (April, Dharani, & Peters, 2012).

Considering the Beck cognitive theory, it could safely be stated that his theory strongly supports the present study findings. As Beck cognitive theory postulates that cognitions of a person play an important role in the development of depression. People who thought

that their outcomes and sufferings are because of their own personal actions, they are less likely to develop depressive traits in old ages.

5.3.2.2 Impact of External Locus of Control on Geriatric Depression

The relationship between external locus of control and geriatric depression was also determined. The result of the study demonstrated a positive impact of external locus of control on geriatric depression. This means as level of external locus of control increases geriatric depression also increases. Individuals who identify that result are controlled by external forces like good fortune; possibility and destiny have an external locus of control orientation (Lachman, Neupert, & Agrigoroael, 2011). Depression might originate from external locus of control and the affected person might believe that he has no control over the events in his or her life or it could result from external locus of control as the person connects every event and happening to himself.

There is a positive relationship between external locus of control and depression. The external locus of control has an interactive effect on the person's self-confidence also. Depression includes the presence of a morbid mental state with disenchantment, despair and fatigue; in most cases, it comprises some anxiety. For this reason, depression is known as one of the world's most crucial issue that has been associated with external locus of control (Sadock & Sadock, 2008). Subsequently, older people in their later life develop external locus of control due to their circumstances that leads them towards depression in old age. This finding is supported by many previous researches such as Maltby and Macaskill, (2010), McLaughlin, Pachana, and McFarland (2010), Mohammad (2013), Sobati, Khaefi, and Sabeti (2015), Twenge, Zhang and Im (2004), who vividly signifies that relying on external events as determinants of various actions in life leads to depression or depression like symptoms in old age.

In view of the Beck Cognitive Theory, it might securely be indicated that his theory strongly acknowledges the current research outcomes. Beck Cognitive Theory proposes that cognitions of a person play an important role in the development of depression. People who thought that their outcomes and sufferings are because of external factors, they are more likely to develop depressive traits in old ages.

5.3.2.3 Impact of Powerful Others Locus of Control on Geriatric Depression

In order to achieve objective 2c of the present study, the relationship between powerful others locus of control and geriatric depression was examined. The result of this study showed a positive impact of powerful others locus of control on geriatric depression. This means that as the level of powerful others locus of control score increases, geriatric depression also increases. This finding is in line with the previous findings such as Clarke (2004), Pearlin, *et al.,* (2007), Khairudin *et al.,* (2011), Zampieri and Pedroso, 2011).

Many investigations have faith in that there is a contributory positive relationship between powerful others locus of control and depression (Aflakseir & Mohammad, 2016). It implies that who relies on other powerful people and are certain of that their achievement is because of external powers they come up with failure. They believe that they cannot change the outcomes by making more effort. This creates a feeling of loss and person feel hopeless and helpless and it leads towards depression. Therefore, this belief strengthens that their destiny is under control by powerful others. They move more towards depression in their later life (Fayyaz, Fayyaz, & Besharat, 2011).

Thus, it is evident from the literature and present study that a positive relation exists between powerful others locus of control and geriatric depression. Age is an important factor in developing powerful others locus of control because as a person ages he becomes

dependents on others for his survival and existence. Moreover, he develops powerful others locus of control due to the faulty cognitions like feeling of dependency, low self-esteem and low self-worth and eventually it turns him towards depression. This particular finding was also supported by the notion depicted by Beck Cognitive theory who postulated that negative and faulty thinking leads to depression and low feelings about oneself. As the people with powerful others locus of control have low feeling about themselves they have more chance to develop depression in their later ages.

5.3.3 Impact of Loneliness on Geriatric Depression with Religiosity as a Moderator

In order to achieve the third objective of this study regarding the impact of loneliness on geriatric depression with religiosity as moderator was examined. Religiosity was used to increase high power and personal strength that could help a person to cope with the increasing intensity of depression in old age (Pokorski & Warzecha, 2011). The results of the present study revealed that religiosity as a moderator have positive effect on the relationship between loneliness and depression of older people. It is likewise obvious that people experiencing depression might understand their issues in religious or spiritual terms.

It was seen that medically ill elderly persons who were diagnosed with a depressive disorder. It is found that intrinsic religiosity (following religion as an end in itself, rather than as a means to another end) was prognostic of shorter time to decrease in depressive disorder, after controlling for various other forecasters of remission because they can accept and believe in Allah. They follow the religious practices more than others, who don't follow the religious practices. They might be a practicing Muslims as compared to others. This is the main reason that the more they are religious they might have less chance

of having the feeling of loneliness and eventually lowers the depression in old age (Hefti, 2011).

This finding is consistent with the observations of previous studies such a Bonelli *et al.,* (2013), Brown (2013), Carpenter, Laney, and Mezulis (2011), Klocker, Trenerry, and Webster (2011); Levin (2010), McCullough and Willoughby (2009), Pokorski and Warzecha (2011). Hence, all of these researches focused on the positive relation between depression and religiosity. This finding in turn supported the positive role of religiosity and has been widely reported in literature. The person who is religious have a little time to be alone as the person performs his religious duties; he/she might develop a strong connection with Allah. They feel less lonely and in turn do not develop depression. So, religiosity acts as a moderator in the positive relation of loneliness and depression and lessens it in old age.

According to Beck cognitive theory, which is the basis of this study, all the elements negative view of the self, negative view of the world and negative view of the future in the cognitive triad (1979) would be interrelated with each other. The primary cause of depression is negative thoughts, generated by dysfunctional beliefs and far from religion and religious practices. A person may develop loneliness that leads towards depression. Hence, in the present study, loneliness and depression are interrelated and religiosity may act as a moderator to affect the feeling of loneliness, which in turn might reduce depression. As a person who feels lonely might have a lack of faith in Allah. This is the main contributing factor in developing loneliness. Religiosity might lead to lessen feelings of loneliness that might further lessen depression. Thus, it is evident from the results of the present study that positive cognitions in old age reduce the threat of depression in old

age. Therefore, in order to decrease level of depression of elderly in Pakistan. The focus must be on their cognitive behavior in old age.

5.3.4. Impact of Locus of Control Total on Geriatric Depression with Religiosity as a Moderator

In order to achieve the fourth objective of this study the impact of locus of control total on geriatric depression with religiosity as moderator was observed. The present study focused on the impact of locus of control total on geriatric depression with respect to religiosity as a moderator. The role of religion is an important aspect of health in old age. Religiosity and depression have a complex relation. The impact of religion on individuals' geriatric depression is very genuine Maselko, Gilman, and Buka (2009). The result of the study emphasized a positive impact of religiosity on the relationship between loneliness and depression of older people. According to different researches such as Koenig (2009) religiosity is negatively associated with depressive symptoms. The more religious one is the less chance of having depression. Those individuals who consider religion as one of the most important entities in their lives had a lower chance of having depression as compared to those who did not make religious faith an important thing in their lives.

Religion acts as a shield against psychological pressures. The relation between religion and psychological health are really multi-dimensional and complex. In many cases, religion can have an effective role in depression and in evaluation of the situation, cognitive assessment of individuals, actions and supportive sources, religion can cause reduction in psychological problems (Tooranlu, Jamali, & Ghafoori, 2007). In fact, many researches have shown that being religious can moderate sever crisis of life (Amirmohamadi, Borhani, Kiani, Almasi-Hashiani, & Naghavi, 2017). Studies show that there is a strong relationship between religion and meaning of life and signs of physical

and psychological health (Sheikholeslami, Navroudi, omid, Zeinali, & Talebi, 2013). Atashzar and Tezerji (2017) has investigated the relationship between religious orientation, pleasure and mental health. Thus, their faith on Allah makes them strong and they achieve control over themselves.

Religion is typically measured and analyzed in relationship to mental and physical wellbeing results. This finding is supported by previous researches such as Ano and Vasconcelles (2005), Bukhari, Saad, and Mahamood (2017), Chiu, Julia, Lynn, Rick, and Heather (2004), Eliassen, Taylor, and Lloyd (2005), Koenig (2009), Klocker, Trenerry, and Webster (2011), Maltby, Day, and Macaskill (2010). The result of these studies showed a positive impact of religiosity on the relationship of locus of control total on geriatric depression. The result of the current study also endorsed the positive impact of religiosity on the relationship of locus of control total on geriatric depression. Religiosity might help the people to reduce depression in their old age.

A cognitive behavior theory also supported this notion that all the behavior is the result of events or circumstances which a person's face in life. As people grow older they lose control over themselves and this cause depression in them. If the factor of religiosity is considered to be important then person feel free from these negative thoughts. Their strong faith on Allah might help them to remain cognitively positive. When some people believe that the circumstances are not in their favor. Their faith on Allah helps them to be psychologically healthy in their later life. As religion and depression relationship is very old. Religion makes a person contended on what he has and what he has not. Therefore, religious orientation might change their negative thinking and they believe in themselves and their negative thoughts might increase their positive behavior. Religious person is near to Allah and gets help from Allah in their all matters of life. So, if a person is religious

his cognitions might not be faulty and he trust in Allah for good or bad happen in his life (Ano & Vasconcelles, 2005).

5.3.4.1 Impact of Internal Locus of Control on Geriatric Depression with Religi0sity as a Moderator

In order to achieve the objective 4a of this study the impact of internal locus of control on geriatric depression with religiosity as moderator was viewed. Religiosity has negative and direct relation with depression. The significant effect of religiosity can be seen in reducing depression in old age. Therefore, religiosity is considered as an important contributing factor in reducing depression (Melgar, Neuman, & Rossi, 2012). In the present study, religiosity is taken as a moderator. In case of a moderator, it is observed that initially the relationship between internal locus of control and depression was negative. When the moderator interacts with them the relation remains the same, which shows that the moderator which is religiosity that strengthens the relationship between internal locus of control and geriatric depression. This indicates that the religiosity has an effect on the relationship between internal locus of control and geriatric depression. Religiosity plays an important role in moderating the impact of internal locus of control on geriatric depression. The belief of an individual in which he/she takes the responsibility of his situation is less likely to develop depression in old age. Their belief in themselves is strengthening by the religious beliefs. A religion makes a person to believe in oneself. Being religious is an integral part of a Muslim life. Religiosity uplifts a person's belief on him and on Allah. Therefore, religiosity strengthens the cognitive belief of a person and this belief act as a moderator in moderating the depression in old age.

This finding is in line with the previous findings such as Cirhinlioglu and ozdikmenli (2012), Haruna and Ibrahim (2014), Ryan, Rigby, and King (1993), Ryan and Francis,

(2012), Stanke and Taylor (2004) illustrating the strong moderating effect of religiosity on relationship between depression and internal locus of control. Hence, all the previous researches and the current research strengthened the moderating role of religiosity on the impact of internal locus of control and depression among elderly. Therefore, the level of religiosity moderates geriatric depression among older population.

Therefore, the present study is supported the cognitive behavior theory, which is the basis of this study. The results of the present finding are supported by all the previous researches such as Ryan and Francis (2012), Stanke and Taylor (2004). People who have an internal locus of control are negatively associated with depression in old age. The more internal locus of control the less are the chances of depression in old age. This is particularly true in case of people of Pakistan. As old age is a transition period, there are so many apprehensions about the future life. Negative thoughts are very strong in this age group which leads to depression in old age. Therefore, relating this finding to the Beck Theory of Depression (1979), it could be illustrated that religiosity as a moderator and consequent negative thoughts are the contributing factor towards old age depression.

5.3.4.2 Impact of external locus of control on geriatric depression with religiosity as a moderator

The impact of external locus of control on geriatric depression with religiosity as moderator was scrutinized. Religion is an entity that is differentiated by beliefs and practices of an individual and also it reflects the mode of social organization. Therefore, religion can have been seen as fundamentally social phenomenon. For the purpose of present study, religiosity is used as a moderator between the impact of external locus of control and depression in old age of people of Pakistan. It is seen that the moderator religiosity positively affects the relationship between external locus of control and

geriatric depression. This shows that the moderator religiosity has positive impact on the relationship between external locus of control and geriatric depression. The moderating effect of religiosity is found to be significant. Religion is an important aspect of an individual's life. The more religious the individual is the least like to develop depression. Old age is a period of transition and old people have more tendencies to develop external locus of control which leads to depression in their later life. Religion acts as a moderator in later life.

External locus of control states to the insight of positive or negative occasions being unconnected to one's own behavior and along these lines consider beyond personal control. In the meantime, the role of religiosity plays an important role and moderates the relationship between external locus of control and depression. Therefore, the present study is supported the cognitive behavior theory, which is the basis of this study. Hence, negative cognitions lead to an external locus of control that leads to depression that might be moderated by the religiosity and this is also supported by the Beck Cognitive theory. The focus of the Beck Cognitive theory is on negative thinking pattern, which is the contributing factor in the development of external locus of control that further leads to depression. This thinking can be changed by the religiosity, which in turn reduces depression.

This finding is consistent with the previous findings such as Arslan, Dilmac, and Hamarta (2009), Fiori, Brown, Cortina, and Antonucci (2006), Leong, Molassiotis, and Marsh (2004), Graffeo and Silvestri (2006), Takeda, Futoyu, Kirino, Nakajim, and Takai (2009). The previous researches illuminate the resilient moderating effect of religiosity on relationship between depression and external locus of control. Hence, all the previous researches and the current research strengthened the moderating role of religiosity on the

impact of internal locus of control and depression among elderly. Therefore, the level of religiosity can moderate geriatric depression among older population.

5.3.4.3 Impact of powerful others locus of control on geriatric depression with religiosity as a moderator

In order to achieve the 4c objective of this study regarding impact of powerful others locus of control on geriatric depression with religiosity as moderator was monitored. Religious beliefs and practices can be major factors in identifying psychological health of an individual. Religiosity is considered as peace of mind and body. Some people find comfort while reciting Holy verses from Quran. The focus of the present study was on the moderating role of religiosity in decreasing relationship between powerful others locus of control and depression in old age respectively. Moreover, in the case of the moderator, the result of the study showed that there is no impact of moderator on relationship of powerful others locus of control on geriatric depression. That shows moderator is not playing a significant role on the relationship between powerful others locus of control and depression in the context of present study.

Therefore, there are many reasons of the results of the present study. First reason is small sample size. In future the increase in Sample size may affect the results (Faber & Fonseca, 2014). The second reason is Cultural factors and environmental factors. The environment in which an individual is living plays a vital role, if the environment is facilitating the powerful others control then the religiosity does not play any role. In traditional Asian cultures, it is common for one member of the family to work hard and share a paycheck with the entire extended family. Some authors suggest that because people from collectivistic cultures are not encouraged to place much importance on personal gratification, they do not spend time feeling frustrated about their failure to achieve

personal success. As a result, the lack of focus on the self can lead to a decrease or absence of the development of depressive disorders and lessen the role of religiosity in Islamic countries like Pakistan (Mavric, Alp, & Kunt, 2017). Thus it is evident from this research that cultural factors might affect the result of the present study. Another most important factor is aging. As people ages they feel helpless in their decision and most likely to develop powerful others locus of control and that diminished the role of religiosity as a moderator (Fiske, Gatz, & Pedersen, 2003).

5.3.5 Impact of Demographic Variables on Geriatric Depression

In order to attain objective 5 of the present research related to the impact of demographic variables on geriatric depression, the role of demographic variables on geriatric depression was examined. The result of all the demographic variables of the present study was discussed one by one.

The first demographic variable is gender. The independent sample t-test was used to check the impact of gender differences on geriatric depression. The result of present study found that there was no significant difference in geriatric depression of the older people of Pakistan. That means both genders of elderly persons had equally experience depression in old age. In contrast to previous researches which showed that there was an impact of gender on the level of geriatric depression of Pakistani people such as Allison, Roeger, Martin, and Keeves (2001), Black, Roberts, and Li-Leng (2012), Masten *et al.,* (2003), Piccinelli and Wilkinson (2000) and Ryba and Hopko (2012). These researchers found that females are more prone to depression as compare to men. They attributed difference due to the fact that this differential risk may primarily stem from biological sex differences and depend less on race, culture, diet, education and numerous other potentially confounding

social and economic factors. The present study finding reveals that there is no gender difference. The main reason behind this is at ages older than 65 years, both men and women have similar depression rates and the prevalence becomes same between them (Bebbington, Dunn, Jenkins, Lewis, Brugha, Farrell, & Meltzer, 2003).

Furthermore, there are also many reasons such as may be the socio cultural differences the sex ratio ought to be unaffected by the sociocultural factors. Bebbington (2003) and others studied different sociocultural group. They concluded groups in which the social differences between men and women are minimized often show a reduced sex difference because in old age gender differences diminished. As at that stage being old is more significant as compare to differentiate in terms of gender. These may be some of the reasons why the hypothesis is rejected.

The second demographic variable is age. The relationship between age and geriatric depression was studied. The result of the present study showed a positive impact on geriatric depression. It is concluded that age has a positive correlation with geriatric depression. When the age increases, the chance of having depression in old age also increases. The prevailing pragmatic works propose that depressive symptoms increase with age. Health status is associated with depressive symptoms in later life (Medalia, 2012). Most of the point of view for the positive association between age and depression is related to the aging process. Aging is generally linked with the lowering of physical and cognitive health states they are often related to living in with a partner to being widowed, living alone, and possibly living in a nursing home, retirement and reductions in financial stability. All of these reasons are positively associated with depression, thus it would make sense if aging led to an increase in depression (Medalia, 2012).

Aging and depression are interrelated. As the age increases geriatric depression also increases. The gross outcome of the aging process, aging itself, could be depressing. For instance, older age might be more depressing because people's social networks constricted as their peers die, a cognitive function may decline, or people feel uneasy as their vicinity decreases to death (Fiske, Gatz, & Pedersen, 2003). This present finding is in line with the previous findings such as Buber and Engelhardt, (2011), Fiske, Gatz, and Pedersen (2003), Medalia (2012), Schieman, Gundy, and Taylor (2002), Stordal, Mykletun, and Dahl (2003), Tomitaka, Kawasaki, Ide, Yamada, Furukawa, ono (2016) and Weiss, *et al.,* (2015) illustrating the positive relationship between depression and aging. Hence, all the previous researches and the current research strengthened that there is a positive relation between age and depression. As the age increases geriatric depression also increases among older population.

The Cognitive behavior theory also supports this phenomenon as cognitions play an important role in understanding life as a person's age. Thus, faulty cognition may lead to depression in old age. Therefore, relating this finding to the Beck Theory of Depression (1979), it could be illustrated that age and consequent negative thoughts are the contributing factor towards old age depression.

The third demographic variable is education. The effect of different level of education on geriatric depression was examined by applying one-way ANoVA. The result of the present study showed that education level has a significant effect on geriatric depression. Education has been observed to be one of the most grounded demographic variables in forecasting the person's psychological health. It is a contributing factor in the incidence of depression among the elderly. Older adults with a high level of education especially at inter and bachelor levels are in danger for depression. Highly educated people have many

expectations from the world. Positive aspirations can also have negative well-being consequences when ungrounded in reality. Person has high hopes from the future. They work hard to achieve their goals. When these high aspirations and goals are not fulfilled after their long hard work then they develop depression in their later life. This is the main reason (Greenaway, Frye, & Cruwys, 2015).

Likewise, higher Education in a country like Pakistan is very difficult to achieve. Thus, people who have higher level of education have very high dreams and expectations from the future. When these hopes may not be fulfilled in later ages, they might develop depression. In Pakistan, there are no social security programs for the senior citizens of Pakistan. People who is highly educated and run his own business or doing job in private sector faced many problems in their later ages as their expectations might not be fulfilled in spite of the fact that they have higher education level. Once they aged, they have to face many problems as they become dependent on their kids for their survival. To most of them working hard in their early year and have good educational level would make them happier later in life. Unfortunately, they still face the psychological problems in their later life. The present study showed a significant high level of depression experienced by the more educated old folks then the less educated ones.

The present study did not support the results regarding the effect of education level on the geriatric depression. The findings could be explained by a number of justifications. Being a developing country, Pakistan has limited resources. In Pakistan, attaining good education is a key to have good job and secured future. Pakistani individuals acquire high education and professional trainings for high status in the society. But unfortunately well learned individuals fail to get the expected success both economically and socially. They also do not get any proper benefits at the time of retirement. They are also deprived of old age

benefits at later ages. Therefore, due to lack of proper resources and expected outcomes, Pakistani individuals develop depression in old age.

Beck cognitive theory focuses on the cognitions of the individuals as determinant of developing depression. According to the theory, due to constant failures in life resulting in lack of resources and social problems (mentioned above), the people develop a faulty cognition system and tend to perceive everything negative and pessimistic. This perception of negativity and pessimism leads towards depression in old age. The findings of the present study therefore support the Beck's theory that focuses on the role of irrational cognitions in the development of depression especially in older population.

The fourth demographic variable is family size. The result of the present study showed a negative impact on geriatric depression. It is clear from the findings that family size has a negative effect on geriatric depression. As family size increases geriatric depression decreases. In this era of modernization, the traditional style of living has been changed. Extended family is the traditional style of living in contrast to a nuclear family. The increase in the setup of nuclear family increases depression in old age. The reduction in family size increases depression due to isolation from peers and family. As the family size reduce from extended family size to nuclear family size, people feel lonelier and upset. This condition leads them towards depression.

Moreover, urbanization, modernization and globalization have driven the fluctuations in the financial structure, the loss of societal ethics, fading of social values, and social associations such as the joint family. In this changing fiscal and societal situation, the older people reduce their social life and remain themselves in the houses away from their children that lead them towards depression. The changing financial structure has abridged

the need of rural families on land that has provided strength to bonds between generations (Dubey, Bhasin, Gupta, & Sharma, 2011).

This finding is consistent with the previous studies such as Banth and Sharma (2014), Dubey, Bhasin, Gupta, and Sharma (2011), Lowry (2009), Macrory (2012), Middeldrop, Souza, Pelegrini, Ribeiro, Pereira, and Mendes (2015). The prior studies enlighten the negative relationship between depression and family size. Hence, all the previous researches and the current research strengthened the negative effect of small family size on depression among elderly. Therefore, the large sample size decreases geriatric depression among older population.

The Beck Cognitive Theory also supported this as the cognitive thinking distorted due to small family size as no one is here to discuss the sufferings of old people. There is no one to discuss and talk to them when they are aged. They developed negative thinking and their cognitions deteriorate and they change their cognitions to faulty cognitions. This further develops depression in old age.

The fifth demographic variable is marital status. The effect of marital status and geriatric depression was analyzed by using one-way ANoVA. The result of the present study indicated that there is an effect of marital status on geriatric depression. Married people have companionship, they have source of support. They have strong ties with their partners that are beneficial for them and the disturbance in the ties leads them towards depression in old age. In Pakistani culture dependency of partners are very evident. In contrast, the unmarried people in their old age lack commitments because of their single life and they are at greater risk of having depression in old age as compare to married people. Married

people have connection with their partners and mostly they lived with their children so they are less prone to their depression in old age.

It is evident from the previous researches that marital status has effected geriatric depression such as Allison, Roeger, Martin, and Keeves (2001), Black, Roberts, and Li-Leng (2012), Masten, Cadwell, Colbert, Williams, Jerome, Mosby, Barrios, and Helton (2003), Piccinelli and Wilkinson (2000), Ryba and Hopko (2012). Therefore, the present study finding is consistent with the previous findings. The prior studies enlighten the relationship between depression and marital status. Hence, all the previous researches and the current research strengthened the effect of marital status on depression among elderly. Therefore, the marital status effected geriatric depression among older population.

Beck cognitive theory also postulates this fact that the emotional bindings are important in dealing with depression in old age. A married person is emotionally sounder as compared to unmarried person. When an individual is emotionally sound, then negative feelings may not arise and their feelings of depression may have not developed. Therefore, the focus of beck cognitive theory is also on the cognitive behavior of the individual. As a person grow, older the cognitive pattern may change but it is observed that married people have more positive cognitions as compared to unmarried.

The sixth demographic variable is number of children. The relationship between no of children and geriatric depression was determined. The result of the present study has determined a negative impact on geriatric depression. It is evident from the results that no of children negatively affect geriatric depression. Increase in no of children decreases geriatric depression. Parenthood is essential to evocative and satisfying life, and that the lives of childless people are void, less fulfilling, and are lonelier in old age as compared

to parents. People incline to rely on parenting that bring about significant communal (companionship, intimacy, support), growing (maturity and growth), and existential (expansion of self and opportunities to love, be loved, and feel useful and needed) benefits. The expected benefits of children, along these lines are strictly related with central mental requirements for connectedness, engaging activity, meaning to life, safety and control (e.g., reliable support in old age), and facing a positive self, the contentment of which seems to be key associates of subjective well-being.

Hence, number of children has an impact on the mental health of the elder people. Apprehensions over the mental health of childless and less children, aged individuals have risen out of the customary views about the significance of grown-up children as bases of emotional, physical, psychological and financial support for aged parents. Investigators have recommended that the ordinary information that children are there to assist if they are required may well add significantly to the mental health of the aged. Furthermore, children as well as grandchildren can offer elderly family members with a sense of connotation and safety, immortality, accomplishment, comradeship, and warmth. Infertile people are supposed to fare a smaller amount of fitness at older ages than parents, for the reason that infertile aged people have a shortage of essential social support network formed by children. Therefore, as the number of children increases psychological health is also increases (Zhang & Hayward, 2001).

This finding is consistent with the previous researches such as Abas, *et al.,* (2013), Hansen, Slagsvold, and Moum (2009), Lim and Kua (2011), Umberson, Pudrovska, and Reczek (2010), Zhang and Hayward (2001). Hence, all the previous researches and the current research strengthened the negative effect of increase in number of children on depression

among elderly. Therefore, the increase in number of children decreases geriatric depression among older population.

Beck cognitive theory also argued that cognitive disturbances may result in a consequence that is the main cause of depression in old age. Having more number of children may result in a good cognitive thought that make them satisfied and healthy in their later life. The increase in number of children supports parents in their old age. Their social family system keeps them intact with the reality. This support retains them away from faulty cognitions. Therefore, increase number of children plays an important role in the development of cognitions at are unharmed in old age.

The seventh demographic variable is socioeconomic status (SES). The relationship between socioeconomic status and geriatric depression was examined. The result of the present study presents a negative impact on geriatric depression. Depression is higher in old folk with low SES. High income, high job-related standing and highly qualified people tend to be happier and less likely to suffer from depression then people with low socioeconomic status. It is obvious from the findings that socioeconomic status has a negative effect on geriatric depression. As socioeconomic status increases the geriatric depression of the old folk also decreases.

This is because according to Lorant, Deliege, Eaton, Robert, Philippot, and Ansseau (2003) indicated that those with high psychiatric morbidity, more disability and poorer access to health care generally have low socioeconomic status (SES). Depression exhibits a more controversial association with SES among psychiatric disorders. Some examples of psychiatric risk factors that are more prevalent in lower SES groups are poorer coping styles, ongoing life events, stress exposure, weaker social support and depression. The

consequences of such greater psychological illness have also been initiated to be unequally circulated. Lower SES groups faced more disabilities and a poorer prognosis for the same level of severity. In countries, where there is less generous welfare support, lower SES groups faced less favorable access to health care. Whatsoever the well-being coverage, they were less likely to use specialized mental care. Depression exhibits a stronger association with low socio-economic status among all psychiatric disorders, (Lorant, Deliege, Eaton; Robert, Philippot, & Ansseau, 2003).

This finding is in line with the previous studies such as Ardington and Case (2010), Eaton, Muntaner, Bovasso, and Smith (2001), Freeman, Tyrovolas, Koyanagi, Chatterji, Leonardi, Ayuso-Mateos, and Haro (2016), Hudson (2005), Jokela and Keltikangas-Jarvinen (2011), Lorant, Croux, Weich, Deliege, Mackenbach, and Ansseau (2007), Santos, Kawamura and Kassouf (2012). Henceforth, all the earlier studies and the present study supported the negative effect of SES on depression among elderly. Therefore, the increase SES decreases geriatric depression among older population.

Beck Cognitive Theory also postulates that low socioeconomic status (SES) affects older people cognitive thoughts and develop negativity in old age and this negativity leads them towards many psychological problems and depression is one of them. As it is evident from the literature that low income countries have poor mental health facilities (Christopher & Hudson, 2005). Therefore, poor people who have low socio economic status has less chance to get benefits from the medical services. The medical services in low income countries are expensive that's why they remain in depression throughout their life.

5.4 Contributions of the Study

All the way through this study, many insights have been provided related to the issues of older people in Pakistan. This study is one of the pioneering studies in a developing country in tracing the effects of research variables like loneliness and locus of control on the geriatric depression. As, the previous literature focus on one and another variable such as loneliness, locus of control and geriatric depression not the variables of present study thoroughly. Their focused is limited (Ahmed, Saeed, Mubashir, Latif, & Mumford, 2001; zeem & Naz, 2015).

In addition, this study attempts to magnify the periphery of the existing work as it explored the moderating effect of the religiosity. The hierarchical regression analysis was used to study the relationship of study variables old age and geriatric depression. The present study can claim significant relevant contributions to the literature by integrating the effect of loneliness and locus of control and religiosity. Moreover, it entails pragmatic suggestions for the considerations of the policy makers as well. Many studies focused on direct relationship of religiosity but not mainly on the role of religiosity as a moderator. As Pakistan is an Islamic country, where culture and values of Pakistan are mainly based on Islamic teaching and practices therefore, the focus of present study is to explore the moderating role of religiosity in the context of Pakistan. The essence of contribution of this study is presented below.

5.4.1 Contribution to Literature

The contribution of the study underlined the importance of older people and their situation in a developing country such as Pakistan. In addition, this research contributed to the literature by examining the impact of loneliness and locus of control phenomenon on the geriatric depression. As, the previous studies focused only on depression, but other

precipitating events like loneliness and locus of control is not discussed in older people's life. A review of the literature regarding this relationship discovered that the pragmatic results were different in different situations. Nevertheless, the broad research work in the literature that examined the impact of moderator religiosity and geriatric depression, there has been evident discrepancies. Due to these inadequate results, many academics and practitioners have questioned the relevance of measures such as old age benefit programs that will affect the psychological well-being of older people.

Secondly, the contribution of this study has several dimensions as described below. First, from the theoretical perspective, this study revealed the importance of older people in the country. This study helps the people of Pakistan that depression is not the part of aging and older people have their own life and their problems must be considered as a priority. Likewise, it contributed to the literature by reexamining the relationship between loneliness, locus of control and geriatric depression. In particular, the evident differences in the literature regarding the research variables such as loneliness, locus of control and religiosity on geriatric depression called for additional thorough examination under the present study. This study, thus, significantly contributed to the existing literature by integrating the effect of research variables loneliness and locus of control to geriatric depression in the growth process of developing country such as Pakistan. It is observed that the research variables such as loneliness and locus of control are significant with geriatric depression for older people in the country.

Third, the findings of this study discovered the importance of religiosity in moderating the effect of loneliness and locus of control on the geriatric depression. Moreover, the results of this study suggested that religiosity as a moderator will reduce the geriatric depression, the more religious the people the better the psychological health in older people that will

enhance the lives of older people. This was clear from the results that the religiosity has a positive effect on the level of geriatric depression. Besides, comparing the effect of loneliness and locus of control directly, the present study tested the importance of religiosity as a moderator in tracing the effects of their dimensions on geriatric depression.

Fourth, the study emphasized the significant role of geriatric depression among older people. The results of this study revealed that the older population mental health should be taken into account on priority basis and measures should be taken to improve their mental health and wellbeing. The lack of country's facilities for older people may lead to unsuccessful, unhealthy growth of the country. Hence, the results of the study support the Beck's Cognitive Theory also in highlighting the faulty cognitions that play a significant role in development of depression among older adults thus leading to geriatric depression.

Fifth, the contribution of the present study is concentrated on the older people extended the existing literature concerning healthy environment for older people such as old age benefits plan. It will increase stability of the older people in old age and will have a positive effect on the growth of Pakistan. As people are free from the apprehensions of the old age, they will perform better in their young age. Moreover, this study on the Pakistan older population has been an attempt to provide empirical insights in revealing that stability of old age in Pakistan is very important to enhance the psychological well-being of the country.

Sixth, the translation and validation of the geriatric depression scale is an important accomplishment as before this there was no scale in Urdu was available to measure the level of depression of the older population. This scale will help at the initial level for the

diagnosis purposes of depression in old age. The development and validation of religiosity scale in the context of Pakistan are an integral part of the present research. The authorities might use this as a reference to study and evaluate the plans for future endeavors. Last but not the least; in addition to testing the proposed hypotheses, this study directed a difficult goodness of the fit with sounds analysis to validate the model. By and large, on research methodology criterion this study rigorously validated the research instrument to ensure valid and reliable results since poorly validated measures often yield inaccurate conclusions.

5.4.2 Practical Contribution

The findings of this study has significant contributions and policy implications for the consideration of clinical Psychologists, academicians, Psychiatrists and policy-makers. This study chiefly emphasizes on the emergence of depression in old age, but with the help of religiosity older people play the positive role in their later life. Some of these contributions and insights are directed in the following order.

Firstly, the findings of this study can raise the awareness among policy makers and the government of Pakistan about the importance of enhancing the older population psychological health in the country. Moreover, the results also improved the psychological health of older people, as it is evident from the result of present study that old age depression is increasing due to the ignorance. This study emphasized on the importance of psychological health of older people, which is one of the main aims of the present study. Taking the clue from these findings, the policy makers of Pakistan should make effective plans to enhance the mental of the older population of the country. A precise short term and long term goals may be implied referring to policies, opportunities, approaches and incentives that are needed to increase the mental health of the older population of Pakistan.

Thus, the government should provide services and upgrade them according to present needs.

Secondly, the study highlighted more important factors that play role in increasing the good psychological health of the older population. The results of this research revealed that, in line with the Beck Cognitive Theory. Activating event and consequences plays an important role in the behavior of the older population. In the country, many programs that benefit older people can facilitate or impede mental health and environmental change initiatives. Therefore, policy makers can ensure the success the future plans through the establishment of a supportive environment. In other words, the finding of this study suggests that policy makers and clinicians, psychologists and social workers in Pakistan should vigorously seek to improve and maintain mental health of the country.

Thirdly, the findings of this study suggested that the government of Pakistan should establish the country several plans that provide attractive packages to the older population so they can adopt these benefits to protect their life in their old age. The government should also enact new laws to protect the old age benefits of the older population. As there is no such planning as social security programs for older population? Government should provide the facilities to the older population comparable to developed countries. Pakistan policy makers should provide the incentive packages in old age similar to other developed countries such as the United Kingdom, Canada and America. Policy makers and government and create a conducive environment for the older population. In short, the Pakistani government should endeavor to establish a friendlier and reliable environment for the older population in the country.

Fourthly, the findings of this study confirmed that religiosity positively moderates geriatric depression and loneliness and locus of control relationship. It follows that as Muslims religiosity is a crucial factor in the development of a good environment of a country. As Pakistan is a religious country, it is more important that people may develop faith on Allah. This suggests that the religious activities may increase which virtually designed to be in a good alignment and consistent with the cultural values of the country. That further facilitates psychological health. Finally, this study is also of a great value to other developing countries as well as policy-makers and academia. As it is the case of research work, the following sub-section discussed the policy-making contribution of this study.

5.4.3 Policy Making Contribution of the Study

The psychological health of the people of the country is very important for its growth. As we know that Pakistan is an under developing country with poor mental health facilities. Mental health program, strategy and law is present in the country, but are not executed. The well-being system is not recognized soundly and has shortages of adequate funds. Communal effort is restricted to limited hospitals and in big cities. The ratio of facilities is only 1% of 1.926 beds per 100,000 populations, in the public psychiatric inpatient units are accessible for youngsters and juveniles, and not for older people because they consider depression as a part of aging. Communal centered housing services and day cure amenities are not obtainable in the republic. Training at the graduate level is inadequate that only three psychiatrists proceeded in the last year in theoretical and learning institutions.

The circulation of human capitals among city and countryside zones is uneven. The compactness of therapists from one place to another in the biggest city is 2.29 times more than the compactness of therapists in the whole realm. The bulk of nurse is 0.15 times greater in the bigger metropolises than the whole realm. The compactness of clinical

psychologists and social workers, employed in the regime region is fairly small. Not a single psychological ailment is shielded by communal insurance organizations. Only 0.4% of health care expenses by the management well-being division are zealous to psychological well-being (Who-Aims Report, 2009).

So, the present research provides evidence to make plans by introducing small packages and reforms for older people. This creates harmony and growth in the country like Pakistan, who is a low income country. Unlike, big countries such as the United Kingdom, Canada and America, in a smaller country such as Pakistan the resolution of issues of the older population can deem to be a real starter not just an academic exercise in her policy strategies. In order to enhance mental health in the country on a large scale, small incentives for older people in the financial sector of Pakistan should be globally competitive.

It should be well understood by the Pakistan's policy makers that as Pakistan is a low income country in order to avoid financial constraints in old age, government should imply old age benefits programs in order to get the full potential of people in their young age. This is because when they are free from financial bindings and future apprehensions they will give the best of their potentials to their country. Thus, the present study found that the psychological well-being of people of a country is very important for the country's future. Pakistani strategy-producers should acquire instructions from the developed countries such as the United Kingdom, Canada and America in managing people and having a peaceful life.

Governmental health department might also enhance the development of older person's well-being by offering progressive interferences in a constant, organized and fixated

manner. The provision of necessary information, services, factual, tools, backing, and extra means to the old population they might experience good mental health under their personal control. As it is the case in any research work, the following sub-section admits the limitations of the present study.

5.5 Limitations of the Study

There are limitations of the research that should be acknowledged while anticipating the results of the study. No matter what, necessary actions were carried out to guarantee these shortcomings did not jeopardize the outcomes of the study. The first limitation of the research was related to the geriatric depression construct and its measurement. The investigator faced difficulty in finding existing investigation substantial pertinent to the study that concentrated on depression on old age especially with context to Pakistan. Research studies and measuring instruments of individual psychological health were found to focus only on certain aspects of depression. Respondents of these studies were also not relevant as they are not old people. Geriatric depression research on the older population in broad-spectrum was not many in Pakistan. This lead to a restriction of having a native exploration needs on earlier researches of western culture influenced individual wellbeing.

The geriatric depression tool was still not authenticated for broad use in Pakistan in Urdu (the national language of Pakistan), as it was the first-ever application of it in Pakistan. The upcoming contest, thus, is to test it in combination with the western adaptation culture.

Furthermore, the dependence on the only usage of self-report measure was seen as additional constraint, as it was merely quantifiable in nature. This might have exaggerated or theatrically overstated relations between different variables. A distinctive prospect is present that further unbiased and explorative signs of worth of older individual's well-

being might yield an altered established result, a blend of self-report methods and qualitative pointers of well-being might provide ironic outcomes.

Adding another drawback on the measurement of the construct was regarding the religiosity measurement specifically for older people. The religiosity instrument that was used specifically for older people in Pakistan had not been authenticated used for wide usage in Pakistan as well, as it was also the first-ever use of it in this country. Thus, the challenge was validating the instrument based on Pakistani culture and background through the proper translation procedure. Moreover, geriatric depression research specifically for older people in Pakistan was quite rare and in fragments, resulting limitation of referencing the study based on local needs. The statistical challenge was to carry out experiments on the adapted instrument taken and used the instrument on local older people as respondents.

5.6 Conclusion

Principally, the research objectives had been achieved and research questions were responded irrespective of numerous boundaries in the study. The study answered all five research questions whish directly accomplished the five objectives of the study. Although research in loneliness, locus of control and geriatric depression were many in social sciences study, this research reduced the knowledge gap in well-being related to the older population, particularly in Pakistan through indicating religiosity as an important moderating variable between loneliness, locus of control and geriatric depression.

Briefly to describe the moderating effect of religiosity on the relationships between loneliness, locus of control and geriatric depression the study met distinguished findings. Religiosity was statistically proven as noteworthy moderator on the relationship between

loneliness, locus of control and geriatric depression. With these findings, this research contributed to the boundary of knowledge in geriatrics research and clinical psychology research relating to practical contribution, the investigation of older person's well-being reinforced the health department to make interventions. As a while, the results of this research contributed in diverse ways through the literature content and the potential outlook in researching the behavior of geriatrics in Pakistani system as well as to the progress of the old age practices in Pakistan through accepting the psychological aspects of the whole process.

5.7 Directions for Future Research

This study provides much-needed analysis of the relationship between loneliness and locus of control with geriatric depression in Pakistan. Furthermore, in this study focus has been on moderating effect of religiosity on loneliness and locus of control with geriatric depression in Pakistan.

There is a necessity to include other variables, which are not focused in this study. For example, variables like self-esteem, self-efficacy and anxiety variables and related variables must be examined for further studies to trace their overwhelming effects and impact on the level of depression of the elderly people. On the whole, the missing connection in the present study can inspire further in-depth and broaden study on the issues of geriatric depression and growth of Pakistan in the future course of direction. The issues of psychological health and other related problems in Pakistan can also be probed by the researchers in the range of community government. The role of loneliness and locus of control and geriatric depression may further be investigated in the context of other nations in comparison with Pakistan.

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APPENDICES

APPENDIX A

Questionnaire

Respondent. No: ----------

A. Demographic Variables

1	Gender	Male	Female		
2	Age	50- 55 1	56- 60 2	61- 65 3	66-70 4
3	Education	Primary 1	Middle 2	Matric 3	F.A/FSc 4
		B. A/B.SC 5	M.A./M. Sc 6	M.phil/P.hd. 7	
4	Socio Economic Status	Lower 1	Middle 2	Upper 3	
5	Family Size	1-2 members	3-4 members	5-6 members	
		7-8 members	9 & above		
6	Marital Status	Married 1	Unmarried 2	Divorced	Widow
7	Children	No children 1	Son 2	Daughter 3	Both 4
8	Income	Below 14,000 1	15,000-30,000 2	Above 30,000 3	

APPENDIX B

B. Mini-Mental State Examination(MMSE)

No	Questions	Score
1	"What is the year? Season? Date? Day? Month?"	
2	"Where are we now? State? County? Town/city? Hospital? Floor?"	
3	The examiner names three unrelated objects clearly and slowly, then the instructor asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible.	
4	"I would like you to count backward from 100 by sevens." (93, 86, 79, 72, 65, …) Alternative: "Spell WORLD backwards." (D-L-R-O-W)	
5	"Earlier I told you the names of three things. Can you tell me what those were?"	
6	Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.	
7	Repeat the phrase: 'No ifs, ands, or buts.'"	
8	Take the paper in your right hand, fold it in half, and put it on the floor	
9	"Please read this and do what it says	
10	Make up and write a sentence about anything	
11	Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.)	

APPENDIX C

C. Levenson Multidimensional Locus of Control

Definition of scale

1 Very strongly disagree

2 Strongly disagree

3 Disagree

4 Agree

5 Strongly agree

6 Very strongly agree

1. Internal Locus of Control

	Items Internal Locus of Control	Very strongly disagree 1	Strongly disagree 2	Disagree 3	Agree 4	Strongly agree 5	Very strongly agree 6
1	Whether or not I get to be a leader depends mostly on my ability.						
2	To a great extent my life is controlled by accidental happenings.						
3	I feel like what happens in my life is mostly determined by powerful people.						
4	Whether or not I get into a car accident depends mostly on how good a driver I am.						
5	When I make plans, I am almost certain to make them work.						
10	I have often found that what is going to happen will happen.						
19	I am usually able to protect my personal interests.						
21	When I get what I want, it's usually because I worked hard for it.						

2. External(Chance) Locus of Control

	Items External(chance) Locus of Control	Very strongly disagree 1	Strongly disagree 2	Disagree 3	Agree 4	Strongly agree 5	Very strongly agree 6
6	Often there is no chance of protecting my personal interests from bad luck.						
7	When I get what I want, it's usually because I'm lucky.						
8	Although I might have good ability, I will not be given						

	leadership responsibility without appealing to those in positions of power.						
9	How many friends I have depends on how nice a person I am.						
13	People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.						
22	In order to have my plans work, I make sure that they fit in with the desires of people who have power over me						
23	My life is determined by my own actions.						
24	It's chiefly a matter of fate whether or not I have a few friends or many friends.						

3. Powerful others Locus of Control

	Items Powerful others Locus of Control	Very strongly disagree 1	Strongly disagree 2	Disagree 3	Agree 4	Strongly agree 5	Very strongly agree 6
11	My life is chiefly controlled by powerful others.						
12	Whether or not I get into a car accident is mostly a matter of luck.						
14	It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune						
15	Getting what I want requires pleasing those people above me.						
16	Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time						
17	If important people were to decide they didn't like me, I probably wouldn't make many friends.						
18	I can pretty much determine what will happen in my life.						
20	Whether or not I get into a car accident depends mostly on the other driver.						

APPENDIX D

D. The Revised UCLA Loneliness Scale

No	Items	Never 1	Often 2	Sometimes 3	Always 4
1	I feel in tune with the people around me				
2	I lack companionship				
3	There is no one I can turn to				
4	I do not feel alone				
5	I feel part of a group of friends				
6	I have a lot in common with the people around me				
7	I am no longer close to anyone				
8	My interests and ideas are not shared by those around me				
9	I am an outgoing person				
10	There are people I feel close to				
11	I feel left out				
12	My social relationships arc superficial				
13	No one really knows me well				
14	I feel isolated from others				
15	I can find companionship when I want it				
16	There are people who really understand me				
17	I am unhappy being so withdrawn				
18	People are around me, but not with me				
19	There are people I can talk to				
20	There are people I can turn to				
21	There are people I can contact to				

APPENDIX E

E. Bukhari Saad Religiosity Scale

No	Items	Very strongly disagree 1	Strongly disagree 2	Disagree 3	Agree 4	Strongly agree 5	Very strongly agree 6
1	Islam is a way of life.						
2	I feel calm when listening and reciting to the verses from the Holy Quran.						
3	I tried to understand the meaning of the verses of the Holy Quran.						
4	I go to masjid because it helps me to make friends and talk with religious scholars.						
5	It is important to me to spend time in muhasabah and solah						
6	Islam offers me comfort when afflicted with calamity/ misfortune.						
7	In addition to religious duty Solah can also leads to peace and happiness						
8	In addition to offer five times farz solah I try to increase the practice of the teaching of Sunnah						
9	I ensure that all of my family members to practice the Sunnah of Prophet (S.A.W.)						
10	I always say Salam to my all Muslim fellows as I meet them.						
11	I have good relations with neighbors						
12	I always tried to do my job as well as possible						
13	I immediately apologize if I am wrong						
14	I like to help anyone who needed						
15	I treat the guests well						
16	I accept the fact that I am not perfect						
17	Although Duniya is important, but akhirah is more important than anything else in my life.						

APPENDIX F

F. Geriatric Depression Scale

No	Items	Yes	No
1	Are you basically satisfied with your life?		
2	Have you dropped many of your activities and interests?		
3	Do you feel that your life is empty?		
4	Do you often get bored?		
5	Are you in good spirits most of the time?		
6	Are you afraid that something bad is going to happen to you?		
7	Do you feel happy most of the time?		
8	Do you often feel helpless?		
9	Do you prefer to stay at home rather than going out and doing new things?		
10	Do you feel you have more problems with memory than most?		
11	Do you think it is wonderful to be alive now?		
12	Do you feel pretty worthless the way you are now?		
13	Do you feel full of energy?		
14	Do you feel that your situation is hopeless?		
15	Do you think that most people are better off than you are?		

APPENDIX G

Correlation Matrix

Correlations

		GDSC2	lsa	lcsa2	lcsea	lcsia	lcspa	rsta
GDSC2	Pearson Correlation	1	.259**	.119*	.290**	-.067	.050	-.109*
	Sig. (2-tailed)		.000	.020	.000	.189	.328	.033
	N	384	384	384	384	384	384	384
Lsa	Pearson Correlation	.259**	1	.021	.111*	-.038	-.039	.056
	Sig. (2-tailed)	.000		.688	.029	.455	.443	.277
	N	384	384	384	384	384	384	384
lcsa2	Pearson Correlation	.119*	.021	1	.894**	.925**	.667**	.006
	Sig. (2-tailed)	.020	.688		.000	.000	.000	.913
	N	384	384	384	384	384	384	384
Lcsea	Pearson Correlation	.290**	.111*	.894**	1	.832**	.330**	-.004
	Sig. (2-tailed)	.000	.029	.000		.000	.000	.936
	N	384	384	384	384	384	384	384
Lcsia	Pearson Correlation	-.067	-.038	.925**	.832**	1	.440**	.028
	Sig. (2-tailed)	.189	.455	.000	.000		.000	.589
	N	384	384	384	384	384	384	384
Lcspa	Pearson Correlation	.050	-.039	.667**	.330**	.440**	1	-.011
	Sig. (2-tailed)	.328	.443	.000	.000	.000		.831
	N	384	384	384	384	384	384	384
Rsta	Pearson Correlation	-.109*	.056	.006	-.004	.028	-.011	1
	Sig. (2-tailed)	.033	.277	.913	.936	.589	.831	
	N	384	384	384	384	384	384	384

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

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

Descriptive statistics of Demographical Variables

[DataSet1] E:\bootstttrapping folder\data for resampling.sav

Statistics

		age	gender	education	familysize	marital	children	socioeconomic
N	Valid	384	384	384	384	384	384	384
	Missing	0	0	0	0	0	0	0
Minimum		3	1	1	1	1	1	1
Maximum		5	2	7	5	4	4	3

Frequency Table

age

		Frequency	Percent	Valid Percent
Valid	60-64	144	37.5	37.5
	65-69	224	58.3	58.3
	70-74	16	4.2	4.2
	Total	384	100.0	100.0

gender

		Frequency	Percent	Valid Percent
Valid	male	192	50.0	50.0
	female	192	50.0	50.0
	Total	384	100.0	100.0

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PRIMARY	96	25.0	25.0	25.0
	MIDDLE	16	4.2	4.2	29.2
	MATRIC	16	4.2	4.2	33.3
	FA/FSc	64	16.7	16.7	50.0
	BA/BSc	112	29.2	29.2	79.2
	MA/MSc	48	12.5	12.5	91.7
	MPhil/PhD	32	8.3	8.3	100.0
	Total	384	100.0	100.0	

Family size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	4.2	4.2	4.2
	2	128	33.3	33.3	37.5
	3	160	41.7	41.7	79.2
	4	48	12.5	12.5	91.7
	5	32	8.3	8.3	100.0
	Total	384	100.0	100.0	

marital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	168	43.8	43.8	43.8
	unmarried	168	43.8	43.8	87.6
	divorced	24	6.2	6.2	93.8
	widow	24	6.2	6.2	100.0
	Total	384	100.0	100.0	

Children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	86	45.4	45.4	45.4
	2	53	27.3	27.3	72.7
	3	53	27.3	27.3	100.0
	Total	192	100.0	100.0	

socioeconomic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	112	29.2	29.2	29.2
	2	160	41.7	41.7	70.8
	3	112	29.2	29.2	100.0
	Total	384	100.0	100.0	

Profile of the Variables

Statistics

		lsa	lcsa2	rsta	GDSC2
N	Valid	384	384	384	384
	Missing	0	0	0	0

Frequency Table

lsa

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low	26	6.8	6.8	6.8
	mild	189	49.2	49.2	56.0
	severe	169	44.0	44.0	100.0
	Total	384	100.0	100.0	

lcsa2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extrernal	165	42.5	42.5	42.5
	Internal	104	27.5	27.5	70.0
	Powerful others	115	30.0	30.0	100.0
	Total	384	100.0	100.0	

Rsta

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	intrinsic religiosity	367	95.6	95.6	95.6
	extrinsic relirioisty	17	4.4	4.4	100.0
	Total	384	100.0	100.0	

GDSC2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No depression	44	11.5	11.5	11.5
	mild depression	150	39.1	39.1	50.5
	Moderate depression	156	40.6	40.6	91.1
	Severe depression	34	8.9	8.9	100.0
	Total	384	100.0	100.0	

Impact of loneliness on geriatric depression with and without religiosity as a Moderator (Hypothesis 1 & 3)

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Bootstrap

Regression

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	lsa[b]	.	Enter
2	rsta, lsarsta[b]	.	Enter

a. Dependent Variable: GDSC2
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.259[a]	.067	.065	.784
2	.313[b]	.098	.091	.773

a. Predictors: (Constant), lsa
b. Predictors: (Constant), lsa, rsta, lsarsta

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.917	1	16.917	27.533	.000[b]
	Residual	234.708	382	.614		
	Total	251.625	383			
2	Regression	24.717	3	8.239	13.798	.000[c]
	Residual	226.908	380	.597		
	Total	251.625	383			

a. Dependent Variable: GDSC2
b. Predictors: (Constant), lsa
c. Predictors: (Constant), lsa, rsta, lsarsta

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.649	.161		10.228	.000
	Lsa	.345	.066	.259	5.247	.000
2	(Constant)	-.411	1.020		-.402	.688
	Lsa	1.365	.398	1.025	3.430	.001
	Rsta	1.990	.981	.506	2.028	.043
	lsarsta	-.981	.381	-1.020	-2.574	.010

a. Dependent Variable: GDSC2

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	1.649	.003	.155	.000	1.352	1.965
	Lsa	.345	-.001	.062	.000	.220	.465
2	(Constant)	-.411	.015[b]	1.067[b]	.677[b]	-2.529[b]	1.638[b]
	Lsa	1.365	-.006[b]	.377[b]	.001[b]	.639[b]	2.126[b]
	Rsta	1.990	-.012[b]	1.035[b]	.039[b]	-.011[b]	4.043[b]
	lsarsta	-.981	.004[b]	.363[b]	.005[b]	-1.701[b]	-.293[b]

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples
b. Based on 4998 samples

Impact of locus of control total on geriatric depression with and without religiosity as a Moderator (Hypothesis 2 & 4)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Regression

Variables Entered/ Removed[a]

Model	Variables Entered	Variables Removed	Method
1	lcsa2[b]	.	Enter
2	rsta, Lcsa2rsta[b]	.	Enter

a. Dependent Variable: GDSC2
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.016[a]	.026	.021	.802
2	.163[b]	.027	.019	.803

a. Predictors: (Constant), lcsa2
b. Predictors: (Constant), lcsa2, rsta, Lcsa2rsta

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.591	2	3.295	5.124	.000[b]
	Residual	245.030	381	.644		
	Total	251.625	383			
2	Regression	6.719	3	2.240	3.475	.001[c]
	Residual	244.906	380	.644		
	Total	251.625	383			

a. Dependent Variable: GDSC2
b. Predictors: (Constant), lcsa2
c. Predictors: (Constant), lcsa2, rsta, Lcsa2rsta

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.554	.263		9.762	.000
	lcsa2	.103	.044	.120	2.367	.001
2	(Constant)	2.034	1.194		1.703	.008
	lcsa2	.249	.330	.288	.755	.451
	rsta	.078	1.161	.020	.067	.947
	Lcsa2rsta	-.143	.321	-.214	-.445	.002

a. Dependent Variable: GDSC2

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	2.558	.003	.153	.000	1.805	3.037
	lcsa2	.103	.000	.041	.012	.025	.184
2	(Constant)	2.034	-.043	1.218	.026	-.550	4.176
	lcsa2	.249	.012	.309	.207	-.287	.888
	rsta	.078	.044	1.186	.916	-1.976	2.586
	Lcsa2rsta	-.143	-.012	.300	.417	-.766	.375

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Impact of Internal locus of control on geriatric depression with and without religiosity as a Moderator (Hypothesis 2a & 4a)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	lcsia[b]	.	Enter
2	rsta, lcsiarsta[b]	.	Enter

a. Dependent Variable: GDSC2
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.067[a]	.005	.002	.810
2	.151[b]	.023	.015	.804

a. Predictors: (Constant), Lcsia
b. Predictors: (Constant), lcsia, rsta, lcsiarsta

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.138	1	1.138	1.735	.003[b]
	Residual	250.487	382	.656		
	Total	251.625	383			
2	Regression	5.719	3	1.906	2.946	.033[c]
	Residual	245.906	380	.647		
	Total	251.625	383			

a. Dependent Variable: GDSC2
b. Predictors: (Constant), Lcsia
c. Predictors: (Constant), lcsia, rsta, lcsiarsta

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.653	.146		18.158	.000
	lcsia	-.048	.036	-.067	-1.317	.003
2	(Constant)	1.531	.994		1.541	.004
	lcsia	.343	.243	.482	1.411	.048
	rsta	1.097	.960	.279	1.142	.004
	lcsiarsta	-.380	.235	-.683	-1.617	.003

a. Dependent Variable: GDSC2

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	2.653	.001	.142	.000	2.385	2.943
	lcsia	-.048	.000	.037	.200	-.124	.022
2	(Constant)	1.531	-.192[b]	1.176[b]	.138[b]	-1.254[b]	3.204[b]
	lcsia	.343	.045[b]	.275[b]	.148[b]	-.049[b]	1.002[b]
	rsta	1.097	.193[b]	1.151[b]	.284[b]	-.494[b]	3.851[b]
	lcsiarsta	-.380	-.045[b]	.267[b]	.100[b]	-1.020[b]	-.005[b]

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples
b. Based on 4999 samples

Impact of External locus of control on geriatric depression with and without religiosity as a Moderator (Hypothesis 2b & 4b)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	lcsea[b]	.	Enter
2	rsta, lcsearsta[b]	.	Enter

a. Dependent Variable: GDSC2
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.290[a]	.084	.082	.777
2	.310[b]	.096	.089	.774

a. Predictors: (Constant), lcsea
b. Predictors: (Constant), lcsea, rsta, lcsearsta

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.181	1	21.181	35.111	.000[b]
	Residual	230.444	382	.603		
	Total	251.625	383			
2	Regression	24.129	3	8.043	13.435	.000[c]
	Residual	227.496	380	.599		
	Total	251.625	383			

a. Dependent Variable: GDSC2
b. Predictors: (Constant), lcsea
c. Predictors: (Constant), lcsea, rsta, lcsearsta

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.791	.121		14.789	.000
	Lcsea	.188	.032	.290	5.925	.000
2	(Constant)	2.092	.757		2.762	.000
	Lcsea	.227	.203	.351	1.119	.026
	Rsta	-.285	.727	-.072	-.392	.048
	lcsearsta	-.039	.195	-.072	-.199	.039

a. Dependent Variable: GDSC2

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	1.791	-.003	.143	.000	1.508	2.061
	lcsea	.188	.001	.035	.000	.119	.256
2	(Constant)	2.092	-.086	.908	.009	-.177	3.465
	lcsea	.227	.017	.213	.199	-.101	.759
	rsta	-.285	.083	.876	.696	-1.568	1.948
	lcsearsta	-.039	-.017	.204	.816	-.553	.266

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Impact of powerful others locus of control on geriatric depression with and without religiosity as a Moderator (2c & 4c)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Regression

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	Lcspa	.	Enter
2	rsta, lcsparsta[b]	.	Enter

a. Dependent Variable: GDSC2
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.050[a]	.003	.000	.811
2	.125[b]	.016	.008	.807

a. Predictors: (Constant), Lcspa
b. Predictors: (Constant), lcspa, rsta, lcsparstab

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.181	1	13.352	34.121	.000[b]
	Residual	231.444	382	.657		
	Total	251.625	383			
2	Regression	23.911	3	8.304	13.345	.000[c]
	Residual	227.714	380	.652		
	Total	251.625	383			

a. Dependent Variable: GDSC2
b. Predictors: (Constant), Lcspa
b. Predictors: (Constant), lcspa, rsta, lcsparstab

Coefficients*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.336	.142		16.455	.000
	Lcspa	.042	.043	.050	.979	.000
2	(Constant)	3.441	.968		3.556	.000
	Lcspa	-.169	.302	-.202	-.560	.576
	Rsta	-1.069	.935	-.272	-1.143	.254
	lcsparsta	.206	.293	.300	.703	.483

a. Dependent Variable: GDSC2

Bootstrap for Coefficients

Model		B	Bootstrap				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	2.336	-.003	.142	.000	2.105	2.554
	Lcspa	.042	.001	.043	.248	-.029	.114
2	(Constant)	3.441	-.040	.968	.000	1.510	5.329
	Lcspa	-.169	.011	.302	.567	-.831	.455
	Rsta	-1.069	.038	.935	.192	-2.867	.820
	lcsparsta	.206	-.011	.293	.475	-.401	.846

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Impact of demographic variables (Children, Socioeconomic status & Family size on geriatric depression (Hypothesis 5)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Regression

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	children, socioeconomic, family size	.	Enter

a. Dependent Variable: GDSC2
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271[a]	.074	.066	.783

a. Predictors: (Constant), children, socioeconomic, family size

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.543	3	6.181	10.077	.000[b]
	Residual	233.082	380	.613		
	Total	251.625	383			

a. Dependent Variable: GDSC2
b. Predictors: (Constant), children, socioeconomic, family size

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.741	.225		12.201	.000
	Family size	.014	.058	.017	.243	.032
	socioeconomic	-.280	.059	-.264	-4.788	.000
	children	.141	.055	.184	2.562	.011

a. Dependent Variable: GDSC2

Bootstrap for Coefficients

Model		B	Bootstrap				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	2.741	.004	.247	.000	2.259	3.231
	family size	.014	-.002	.062	.000	-.110	.130
	socioeconomic	-.280	.001	.050	.000	-.376	-.180
	children	.141	.000	.058	.001	.028	.254

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Impact of Gender on geriatric depression (Hypothesis 5)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
GDSC2	Equal variances assumed	4.223	.041	.821	382	.412
	Equal variances not assumed			.830	381.450	.407

Bootstrap for Independent Samples Test

			Bootstrap			
					95% Confidence Interval	
		Mean Difference	Bias	Std. Error	Lower	Upper
GDSC2	Equal variances assumed	.068	.000	.082	-.091	.225
	Equal variances not assumed	.068	.000	.082	-.091	.225

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Impact of Marital status on geriatric depression (Hypothesis 5)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

One way

ANOVA

GDSC2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20.397	3	6.799	11.174	.000
Within Groups	231.228	380	.608		
Total	251.625	383			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: GDSC2

	(I) marital	(J) marital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	married	unmarried	-.429*	.085	.000	-.65	-.21
		divorced	-.121	.150	.854	-.51	.27
		widow	.348	.204	.322	-.18	.87
	unmarried	married	.429*	.085	.000	.21	.65
		divorced	.308	.150	.173	-.08	.70
		widow	.777*	.204	.001	.25	1.30
	divorced	married	.121	.150	.854	-.27	.51
		unmarried	-.308	.150	.173	-.70	.08
		widow	.469	.239	.204	-.15	1.09
	widow	married	-.348	.204	.322	-.87	.18
		unmarried	-.777*	.204	.001	-1.30	-.25
		divorced	-.469	.239	.204	-1.09	.15

*. The mean difference is significant at the 0.05 level.

Impact of Education on geriatric depression (Hypothesis 5)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

One way

ANOVA

GDSC2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	26.358	6	4.393	7.352	.000
Within Groups	225.267	377	.598		
Total	251.625	383			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: GDSC2
Tukey HSD

(I) education	(J) education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
PRIMARY	MIDDLE	-.375	.209	.551	-.99	.24
	MATRIC	.188	.209	.973	-.43	.81
	FA/FSc	-.609*	.125	.000	-.98	-.24
	BA/BSc	-.571*	.108	.000	-.89	-.25
	MA/MSc	-.292	.137	.335	-.70	.11
	MPhil/PhD	-.375	.158	.211	-.84	.09
MIDDLE	PRIMARY	.375	.209	.551	-.24	.99
	MATRIC	.563	.273	.380	-.25	1.37
	FA/FSc	-.234	.216	.932	-.87	.41
	BA/BSc	-.196	.207	.964	-.81	.42
	MA/MSc	.083	.223	1.000	-.58	.74
	MPhil/PhD	.000	.237	1.000	-.70	.70
MATRIC	PRIMARY	-.188	.209	.973	-.81	.43
	MIDDLE	-.563	.273	.380	-1.37	.25
	FA/FSc	-.797*	.216	.005	-1.44	-.16
	BA/BSc	-.759*	.207	.005	-1.37	-.15
	MA/MSc	-.479	.223	.327	-1.14	.18
	MPhil/PhD	-.563	.237	.211	-1.26	.14
FA/FSc	PRIMARY	.609*	.125	.000	.24	.98
	MIDDLE	.234	.216	.932	-.41	.87

	MATRIC	.797*	.216	.005	.16	1.44
	BA/BSc	.038	.121	1.000	-.32	.40
	MA/MSc	.318	.148	.324	-.12	.76
	MPhil/PhD	.234	.167	.801	-.26	.73
BA/BSc	PRIMARY	.571*	.108	.000	.25	.89
	MIDDLE	.196	.207	.964	-.42	.81
	MATRIC	.759*	.207	.005	.15	1.37
	FA/FSc	-.038	.121	1.000	-.40	.32
	MA/MSc	.280	.133	.356	-.12	.68
	MPhil/PhD	.196	.155	.866	-.26	.66
MA/MSc	PRIMARY	.292	.137	.335	-.11	.70
	MIDDLE	-.083	.223	1.000	-.74	.58
	MATRIC	.479	.223	.327	-.18	1.14
	FA/FSc	-.318	.148	.324	-.76	.12
	BA/BSc	-.280	.133	.356	-.68	.12
	MPhil/PhD	-.083	.176	.999	-.61	.44
MPhil/PhD	PRIMARY	.375	.158	.211	-.09	.84
	MIDDLE	.000	.237	1.000	-.70	.70
	MATRIC	.563	.237	.211	-.14	1.26
	FA/FSc	-.234	.167	.801	-.73	.26
	BA/BSc	-.196	.155	.866	-.66	.26
	MA/MSc	.083	.176	.999	-.44	.61

*. The mean difference is significant at the 0.05 level.

Bootstrap for Multiple Comparisons

Dependent Variable: GDSC2

Tukey HSD

(I) education	(J) education	Mean Difference (I-J)	Bootstrap[a]			
			Bias	Std. Error	95% Confidence Interval	
					Lower	Upper
PRIMARY	MIDDLE	-.375	.004	.385	-1.122	.383
	MATRIC	.188	-.005	.252	-.309	.676
	FA/FSc	-.609	.003	.128	-.855	-.352
	BA/BSc	-.571	.000	.081	-.723	-.411
	MA/MSc	-.292	.002	.123	-.529	-.045
	MPhil/PhD	-.375	.000	.101	-.571	-.179
MIDDLE	PRIMARY	.375	-.004	.385	-.383	1.122
	MATRIC	.563	-.010	.454	-.333	1.450
	FA/FSc	-.234	-.002	.402	-1.038	.537
	BA/BSc	-.196	-.004	.390	-.958	.560
	MA/MSc	.083	-.002	.398	-.700	.869
	MPhil/PhD	.000	-.004	.394	-.800	.776
MATRIC	PRIMARY	-.188	.005	.252	-.676	.309
	MIDDLE	-.563	.010	.454	-1.450	.333
	FA/FSc	-.797	.008	.274	-1.319	-.245
	BA/BSc	-.759	.006	.256	-1.252	-.249
	MA/MSc	-.479	.007	.275	-1.008	.062
	MPhil/PhD	-.563	.006	.266	-1.073	-.033
FA/FSc	PRIMARY	.609	-.003	.128	.352	.855

	MIDDLE	.234	.002	.402	-.537	1.038
	MATRIC	.797	-.008	.274	.245	1.319
	BA/BSc	.038	-.002	.140	-.241	.316
	MA/MSc	.318	.000	.167	-.015	.646
	MPhil/PhD	.234	-.002	.151	-.064	.527
BA/BSc	PRIMARY	.571	.000	.081	.411	.723
	MIDDLE	.196	.004	.390	-.560	.958
	MATRIC	.759	-.006	.256	.249	1.252
	FA/FSc	-.038	.002	.140	-.316	.241
	MA/MSc	.280	.002	.134	.020	.543
	MPhil/PhD	.196	.000	.116	-.036	.421
MA/MSc	PRIMARY	.292	-.002	.123	.045	.529
	MIDDLE	-.083	.002	.398	-.869	.700
	MATRIC	.479	-.007	.275	-.062	1.008
	FA/FSc	-.318	.000	.167	-.646	.015
	BA/BSc	-.280	-.002	.134	-.543	-.020
	MPhil/PhD	-.083	-.002	.146	-.380	.201
MPhil/PhD	PRIMARY	.375	.000	.101	.179	.571
	MIDDLE	.000	.004	.394	-.776	.800
	MATRIC	.563	-.006	.266	.033	1.073
	FA/FSc	-.234	.002	.151	-.527	.064
	BA/BSc	-.196	.000	.116	-.421	.036
	MA/MSc	.083	.002	.146	-.201	.380

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Impact of Age on geriatric depression (Hypothesis 5)

Bootstrap

Bootstrap Specifications

Sampling Method	Simple
Number of Samples	5000
Confidence Interval Level	95.0%
Confidence Interval Type	Percentile

One way

ANOVA

GDSC2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.893	2	3.446	5.365	.005
Within Groups	244.732	381	.642		
Total	251.625	383			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: GDSC2
Tukey HSD

(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
60-64	65-69	-.158	.086	.157	-.36	.04
	70-74	.458	.211	.078	-.04	.96
65-69	60-64	.158	.086	.157	-.04	.36
	70-74	.616*	.207	.009	.13	1.10
70-74	60-64	-.458	.211	.078	-.96	.04
	65-69	-.616*	.207	.009	-1.10	-.13

*. The mean difference is significant at the 0.05 level.

Bootstrap for Multiple Comparisons

Dependent Variable: GDSC2
Tukey HSD

(I) age	(J) age	Mean Difference (I-J)	Bootstrap			
			Bias	Std. Error	95% Confidence Interval	
					Lower	Upper
60-64	65-69	-.158	.000	.081	-.317	-.002
	70-74	.458	-.002	.260	-.069	.961
65-69	60-64	.158	.000	.081	.002	.317
	70-74	.616	-.002	.259	.090	1.118
70-74	60-64	-.458	.002	.260	-.961	.069
	65-69	-.616	.002	.259	-1.118	-.090

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples