

Life Satisfaction and Basic Needs among Elderly People in Pakistan: Evidence from the PSES Data

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1. INTRODUCTION

1.1. Background

As an outcome of demographic transition the composition of the world's population has changed. In turn percent share of population above 60 years of age will be doubled from 11 percent in 2010 to 22 percent in 2050 worldwide [United Nations (2011)]. Those countries which encountered demographic transition early are now facing the problem of ageing societies. In developing countries, demographic transition started late, and they have not yet encountered the problem of a large proportion of elderly in the population. However, in the coming years with the high proportion of elderly, these countries will also have to face the problems with their poor economic situation and burden of diseases. Therefore it will be a difficult task for developing countries to combat the problem of the large proportion of elderly in the population in the coming years if concrete steps have not been taken at this time.

Pakistan, where demographic transition started in the 90's, has almost six percent (more than nine million) of the population above 60 years of age in the year 2005, and it will rise to 16.5 percent (48 million) in the year 2050. If we look at the ageing index, which is the number of persons 60 years of age or above per hundred persons below 15 years of age, the value was 15.9 in 2005. It will rise to 29 in 2025 and further to 75.5 in the year 2050 due to decline in fertility and steady increase in life expectancy. The old-age dependency ratio has also increased from seven in 2005 to nine in 2025 and will reach 16 in the year 2050 [UN (2006)].

Propelled by declining mortality and increasing life expectancy, the large population in Pakistan will grow older, facing serious health and income security issues [Alam and Karim (2006)]. In Pakistan, it is still presumed that families will take care of the parents, and for this reason no policies have been formulated. But in the coming years, informal family-based old-age support will be a difficult proposition [Alam and Karim (2006)]. In Pakistan, one third of the population is living under the poverty line, and a high proportion of elderly in the population will multiply this problem in the coming years.

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Akram and Khan (2007) concluded that in Pakistan the health care system is inadequate, inefficient, and expensive. The health budget is only 3.9 percent of gross domestic product, whereas the per capita total expenditure on health is 85 international \$ with one-quarter share of per capita government expenditure on health [WHO (2004) cited in WHO (2006)]. In addition to that, for elderly people there is no formal plan to address the increasing need of health care facilities, especially for the older old (80 years and above), although their proportion is expected to be much higher in the coming years. General hospitals do not provide special services to the elderly nor is geriatrics a common medical specialty.

Another important aspect of the life of the elderly is mental health, as mental disorders accounted for 13 percent of the world's burden of disease in 2005 and is expected to gain two percent points by 2020 [WHO (2002)]. Due to loneliness in the older ages, the elderly population is more vulnerable to acquire any mental disorder. For example, Buber and Engelhardt (2006) have reported higher levels of depression among the childless elderly. Mental health problems will be, in the coming years, the disease group with the second heaviest toll globally [EC (2004a), cited by Buber and Engelhardt (2006)]. For this reason, mental health problems are a public health priority, as the social and economic costs of these problems are of huge importance. In addition, depressive illness and dementia are the two major mental diseases in later life [Copeland, *et al.* (1999) cited by Buber and Engelhardt (2006)]. Furthermore, in Pakistan there are no studies on the prevailing mental health of the elderly at the national level.

From the above discussion it is clear that elderly people are vulnerable in the satisfaction of their basic needs: economic situation, health status and mental condition, although situation of these variables in the other segments of the population in Pakistan is also not so encouraging. Therefore it is important to determine the level of well-being among the elderly population in Pakistan based on these variables.

Well-being has been the focus of many studies during the last few decades, looking at it in two different angles, the social indicators approach and SWB approach [Diener and Suh (1997)]. Social indicators are societal measures reflect objective circumstances of people in a given culture. In contrast, subjective well-being refers to individuals' subjective experience of their lives. Here it is assumed that well-being comprises of conscious experiences of people in terms of emotional feelings and cognitive satisfactions. The field of subjective well-being assumes it appropriate to examine the feelings of a person about his life based on his perceptions [Diener and Suh (1997)]. This study is design to understand the state of affairs of basic needs among the elderly in Pakistan, and to explore its relationship with subjective well-being. Further we aim to explore determinants of SWB among the elderly.

Section 2 presents different studies on SWB using different approaches. Furthermore, theory and conceptual framework of this study is also presented in this chapter. Section 3 discusses the research design, including the hypotheses, the operationalisation of the main variables, data and data collection. Section 4 is devoted to results of the analysis. Section 5 summarises the main findings of the study and discusses the conclusion.

2. THEORY AND CONCEPTUAL FRAMEWORK

2.1. Background Literature

As in this study our focus is on SWB, we will provide an overview only on studies related to SWB in the following lines.

Subjective well-being/satisfaction with life has been studied by many researchers in the perspective of satisfaction in different domains of life [Cummins (1996, 1998, 2003); Headey and Wearing (1992); Headey, *et al.* (1984); Meadow, *et al.* (1992); Rampichini and D'Andrea (1998); Salvatore and Munoz Sastre (2001); Saris and Ferligoj (1996); Sirgy, *et al.* (1995); Veenhoven (1996) cited by Rojas (2006)]. Domains refer to conceivable areas of life of a person [Rojas (2004)]. Further, the relationship between life satisfaction and satisfaction in domains of life is well-accepted, but the nature of relationship is debatable [Rojas (2006)]. However, various researchers came up with different domain of life [c.f. Cummins (1996); Argyle (2001); Day (1987); Flanagan (1978); Heady and Wearing (1992)].

Regarding personal income, it was initially concluded that it exerts little influence over the SWB [Campbell, *et al.* (1996); Diener, *et al.* (1999); Headey and Wearing (1992); King and Napa (1998); Ng (1997) cited by Cummins (2000)]. Some studies show that there is a little or no existent relationship between income and well-being/happiness. Consequently income-based poverty based does not necessarily imply loss of well-being. However, there is an enormous body of empirical evidence showing that income has substantial impact on subjective well-being. Ali and Kiani (2003) concluded poverty status to be the main determinant of the elderly's quality of life. Cummins (2000) has concluded that money does matter but there is a ceiling beyond which income can no longer influence levels of the SWB. So the influence of economic status is well-established, but there is debate about the level at which it maximised the SWB.

The other important factor in the SWB is health status, and for the elderly it becomes much more important. The study by Wolinsky, *et al.* (1985) has shown that health status has a significant effect on the SWB. According to Spreitzer and Snyder (1974), perceived health status is the main determinant of life satisfaction among the Americans.

As far as mental condition is concerned, studies show that good mental health contributes to the SWB of the elderly [Meddin and Vaux (1988); Snow and Crapo (1982)]. Psycho-social indicators of well-being had more explanatory power than health indicators of well-being in explaining 'will to live' among the elderly [Carmel (2001)]. Research shows a clear link between reduced well-being and high Depressive Symptomatology (DS): well-being is a significant predictor of DS and well-being increases as DS decreases [Davey (2004)].

Apart from that there are a number of studies focusing on well-being at macro level. Some of these studies constructed district level objective well-being ranking [Akhtar and Sarwar (2007); Ghaus, *et al.* (1996); Hasan (2008); Jamal and Amir (2007); UNDP (2003); Midhet (2004); Pasha and Naeem (1999); Pasha, *et al.* (1990); Siddiqui (2008) cited by Haq and Zia (2008)]. On the other hand Haq and Zia (2008) moved a one step further and constructed both objective and subjective measures of well-being at district level in Pakistan.

There are a few studies related to the issues of the elderly people in Pakistan. Recently, Ul Haq (2012) conducted a comprehensive study on the issue of subjective well-being of the elderly from goals' perspective. However, the study only focused on Islamabad. Hence the results of the study cannot be generalised for the country. Ali and Kiani (2002) attempted to study the relationship of quality of life index with that socio-economic condition of the elderly in Pakistan using nationally representative data. The results showed that quality of life for the elderly depend on the per capita food and non-food consumption along with type of residence and sex. In this study, an attempt had been made to construct an overall indicator of the well-being of the elderly, while combining subjective and objective indicators of the well-being. No theoretical justification, however, was given for combining these two types of indicators.

Other studies, most of which are case studies, usually addressed the income-related problem faced by the elderly in Pakistan, with that of some information related to the availability of health facilities. Most of these studies simply reported statistics [see Clark, *et al.* (2002)].

Summing up, many studies have been under taken to study SWB in relation to all major domains of life. The purpose of this study is to have a glimpse into the life of the elderly in Pakistan through their SWB using it as a tool. For this purpose the SWB of the elderly will be studied in relationship with those domains which can be regarded as basic needs required by any person. More over in this study effort will also be made to find out which basic needs are fulfilled and which have more priority over other in connection with the SWB of the elderly. Maslow's theory of motivation is one of the appropriate theories in order to achieve the objective of this study. This theory is further elaborated in the next section.

2.2. Theory

Maslow's theory of motivation (1970) was proposed to explain human motivation focusing on workplace behaviour. In this theory he explained the emergence of basic human needs, how these needs are fulfilled, and what characteristics do these needs possess. According to Maslow, there are two types of needs: fundamental and every day needs, and for achieving the fundamental needs people from different cultures adopt different every day needs. He classified these fundamental needs as physiological, safety, love, esteem and self-actualisation. According to Maslow, these needs are hierarchical in nature, and when some needs are fulfilled others emerge (see Figure 1). In other words satisfaction of low level needs serves as a pre-requisite to the higher-level needs' satisfaction [Maslow (1970)].

The first set of hierarchical needs is the physiological or basic needs as proposed by Maslow (1970). Basic needs include air, water, food, sleep and sex. These needs are the most prepotent of all needs. These needs can be attained at a low level of income and hence do not depend on increasing income [Hagerty (1999)].

Once the physiological needs are met, next set of needs which emerge is the safety needs which are psychological rather than physiological. The safety needs depend on the safety of the living area, medical insurance, job and financial security. According to Maslow's hierarchy, until a person feels safe, higher needs will not receive much consideration [Maslow (1970)].

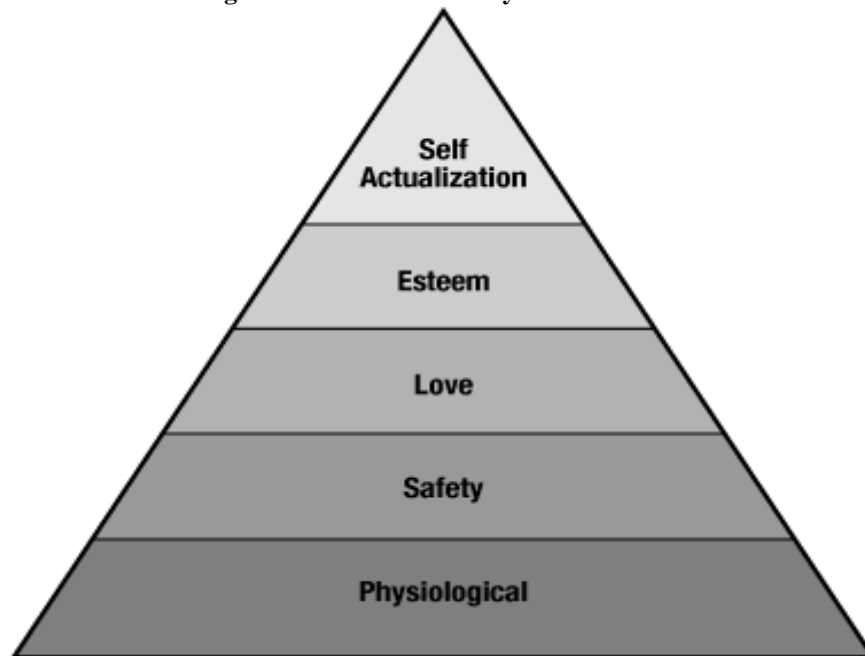
After meeting the lower level of needs; physiological and safety needs, higher level needs become important. The belongingness or love needs comes first in that list. It is related to interaction with other people and may comprise of need of belonging and love and include both giving as well as receiving love [Maslow (1970)].

The esteem needs arise when one feels a sense of belonging. Esteem needs are those related the need for reputation, status, fame and glory. Satisfaction of these needs leads to feelings of self-confidence and thwarting of these needs produces feelings of inferiority [Maslow (1970)].

Maslow proposed that when all above-mentioned needs are satisfied, new needs emerge: the self-actualisation needs. These newly emerged needs will not be satisfied unless the individual is doing what he is fitted for. The self-actualisation needs are the highest of the Maslow's hierarchy of needs. The specific form of these needs varies across different people [Maslow (1970)].

As we go from lower to higher needs, individual differences become more diversified. The physiological needs are fixed for all individuals whereas the self-actualisation needs are more diversified. In one individual it may take the form of the desire to be an ideal mother, in another it may be expressed artistically. About the nature of the hierarchy of these needs, Maslow proposed that these needs emerge in a fixed order but with some exceptions. About the emergence of needs in such a fashion that if one need is satisfied, then another emerges, Maslow clarified that it does not mean that a need must be satisfied 100 percent before the next need emerges. He stated that every normal person in any society has partially satisfaction and partially dissatisfaction in all his needs, at the same time [Maslow (1970)].

Fig. 1. Maslow's Hierarchy of Basic Needs

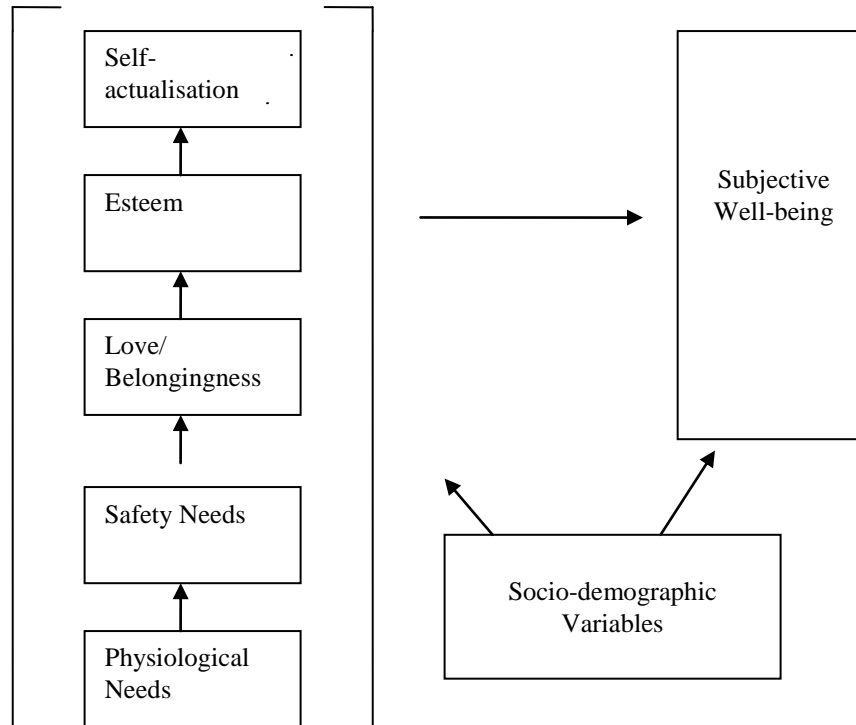


Source: Maslow (1970) cited by <http://www.randsinrepose.com/archives/2006/04/20/10.html>

2.3. Conceptual Framework

The objective of this study is to find out current level of the SWB of the elderly in Pakistan. The conceptual framework of this study will be based on Maslow's theory of hierarchical needs. This theory has previously been used to measure well-being and quality of life (QOL) of different countries (macro) level [Clarke, *et al.* (2006); Hagerty (1999)]. However, in this study it will be used to measure the SWB of the elderly at individual (micro) level. So the conceptual model of this study is given by Figure 2.

Fig. 2. Conceptual Framework



Source: Based on Maslow's theory of hierarchical needs (1970).

2.3.1. Definitions of Concepts

The Physiological Needs

The physiological needs include air, water, food and sex.

The Safety Needs

The safety needs include safe place of living, safety from assault, murder and from chaos [Hagerty (1999)]. Clarke, *et al.* (2006) have regarded safety needs as psychological needs.

The Love/Belongingness Needs

The love/belongingness needs include belongingness to friends, a family and community and to be loved and acceptance by the others [Hagerty (1999)].

The Esteem Needs

Esteem includes status and confidence of a person particularly regarded as a judicious decision maker confidence [Hagerty (1999)].

The Self-actualisation

The Self-actualisation is “to become everything that one is capable of becoming” [Maslow (1970), pp. 46].

Life Satisfaction

Life satisfaction shows one’s satisfaction level with present and future life [Diener, *et al.* (1999)].

3. STUDY DESIGN

3.1. Introduction

As, in the previous chapter it is discussed that at the moment proportion of elderly in Pakistan is not alarming but given the socio-economic, health and emotional condition of the elderly, it would be a great challenge for the policy-makers in the coming years. Further, there are no national level studies focusing on the basic needs of the elderly to examine the prevailing situation of the elderly in those domains of life. This study is aimed at to see what the level of SWB of the elderly is, to see which are the main determinants and what is the prevailing situation of those main determinants of the SWB of the elderly. In this study design of this study is discussed.

The outline of this chapter is as follow. Main hypotheses of this study are formulated in Section 3.2. Description of the data is given in Section 3.3. Methodology of this study is discussed in Section 3.4. Section 3.5 contains the data quality issue. Operationalisation of the main concepts is discussed in Section 3.6. Ethical issues are discussed in Section 3.7. Section 3.8 is dedicated to short comings of this study.

3.2. Hypotheses

The following hypotheses are made for this study to be tested based on the conceptual framework.

- (1) Based on the Maslow’s hierarchy of needs, all the needs have a positive effect in the SWB of the elderly in Pakistan with lower needs being more prepotent than the higher ones.
- (2) As there is an assumed hierarchy in the needs and lower needs being more prepotent than the higher needs, basic needs would have greater effect on the SWB of the elderly.
- (3) Sociodemographic variables have positive relationship; higher level of education, gender, living in the urban areas and age (60-64), with that of SWB of the elderly.

3.3. Data

The analysis in this study is based on the data of Pakistan Socio-Economic Survey (PSES) Round-2 that was carried out in the year 2001 covering almost 96 percent of the population of Pakistan [Ali and Kiani (2003)].

In PSES phase II, which was a continuation of PSES phase I, 4021 households (2577 rural and 1444 urban) were successfully enumerated including a total of 1174 elderly who were successfully interviewed [Ali and Kiani (2003)].

3.4. Methodology

To explore the unadjusted effect of the basic needs and other sociodemographic variables on the SWB of the elderly, chi square test will be applied with that of cross tabulations. Multinomial logistic regression will be applied to explore the net effect of each variable on the SWB. The model is presented by the following equation.

$$\log\left(\frac{\pi}{1-\pi}\right) = \beta_0 + \beta_1 x_i + \beta_2 x_i + \dots + \beta_n x_i$$

where, π is the probability of success.

3.5. Operationalisation of Main Concepts

The purpose of this study is to find out prevailing situation of elderly with respect to basic needs and SWB throughout Pakistan. PSES round II provides some data on elderly. These data will be used to answer the research questions of this study. Due to data constraint, as this study was not focused on elderly, effort is being made to operationalise the main concepts as valid as possible. Basic concepts are operationalised in the following manner:

The Physiological Needs

The physiological needs will be assessed by the poverty status in terms of basic needs and calorie intake of the elderly [Hagerty (1999)]. In the data, information on the calorie intake and basic needs are available. These two scores are converted in rupees (Pakistani currency). By factor analysis these two variable are combined and a new variable of 'basic needs', which is a continuous variable, is constructed in such a way that higher value of 'basic needs' refer to higher level of basic needs enjoyed by the elderly.

The Safety Needs

The safety needs will be assessed by the health status [Clarke, *et al.* (2006); Hagerty (1999)] and suitable place of residence. It is regarded as psychological needs [Clarke, *et al.* (2006)], so thinking about the future life will also be included in safety needs. As suggested by Clarke, *et al.* and Hagerty, variable of safety needs is constructed by combining these three variables using Factor analysis. Newly constructed variable is a continuous variable in such a way that higher the value of 'safety needs' means higher level of safety needs enjoyed by the elderly.

The Love/Belongingness Needs

Belongingness will be assessed by the time given by children to the elderly. There is a question in the survey asking the elderly “Do children or other member of the household share their time with you?” with two options of either ‘yes’ or ‘no’ which are coded as ‘1’ and ‘2’ respectively. So those elderly whose children and other members of the household give time to them are regarded as having belongingness and love and vice versa. Measurement scale of this variable is ordinal.

The Esteem Needs

Role in the decision making will be used to find out the level of esteem needs satisfied among the elderly. In the questionnaire there was a question related to the role in the decision making: “What is your role in decision making in the household?”. The possible responses in ordinal scale are: “Take most of the decision by myself”, “Take most decisions with joint consent”, “Children take most of the decisions”, and “No role at all in the decision making” and they are coded as ‘1’, ‘2’, ‘3’ and ‘4’, respectively.

The Self-actualisation Needs

Achievement of the aim in the life will be used to assess the level of self-actualisation needs satisfied among the elderly. Answer to the question “Do you think that you have achieved what you aimed for in the life?” is used as an indicator. Possible options were ‘very much’, ‘To some extent’, ‘Not so much’, and ‘Not at all’ which are coded in ordinal scale as ‘1’, ‘2’, ‘3’, and ‘4’, respectively.

Sociodemographic Status

Sociodemographic status will include age, sex, education and place of residence. Age is taken as a continuous variable. Sex and place of residence are measured at nominal scale with ‘male’ and ‘living in urban areas’ coded as ‘1’ and ‘female’ and ‘living in rural areas’ as ‘2’. Education, which is measured at ordinal scale, is divided in four categories: ‘10 grade and above’, ‘grade 5 to grade 9’, ‘grade 1 to grade 4’, and ‘no education’.

Life Satisfaction

Life satisfaction of the elderly in Pakistan will be evaluated by the perception of the elderly about the level of their satisfaction from present. For that purpose answer to the following question is: ‘Overall how satisfied are you with your present living conditions?’ There are three possible answers to this question: ‘Very much satisfied’, ‘moderately satisfied’, and ‘not satisfied’ which are coded as ‘1’, ‘2’, and ‘3’ in ordinal scale of measurement.

4. RESULTS

4.1. Introduction

In order to find out the prevailing situation of the SWB and other different variables, hierarchy of the basic needs proposed by Maslow and relationship between the

SWB and the basic needs, bivariate and multivariate analysis were carried out. In this section results of the analysis are presented.

4.2. Relationship of the SWB and Basic Needs with Sociodemographic Variables

In order to find out the relationship of different variable under study, bivariate analysis¹ and binary logistic regression analysis were carried out. In this section prevailing situation of the dependent variable as well as that of basic needs, in addition to their relationship with different sociodemographic variables under study, will be discussed. Cross tabulations suggest about the trend among different categories of a variable whereas chi square tests the significance of the association between two variables.

Relationship of 'Level of Satisfaction' with Love Needs, Esteem Needs, Self-actualisation and Sociodemographic Variables

First of all unadjusted effect of all the variables will be explored with that of dependent variable 'Subjective well-being'. Male elderly are slightly well off as far as satisfaction with life is concerned as they are six percentage ahead from female elderly in the category of 'very much satisfied' and four percentage points less in the category of 'not satisfied'. Association between the two variables is also highly significant as suggested by chi square test. This result is quite anticipated one as in Pakistani society male are dominant and women are deprived of many basic rights due to cultural norms.

To find out what is the age-wise level of satisfaction with life among the elderly, they are divided in three groups according to their age; 60-64, 65-74 and 75 or above. The elderly in the age group 65-74 are slightly better than other two age groups although it the relationship is not significant as suggested by chi square test.

Place of residence has a significant effect on the level of satisfaction among the elderly. Although the life of people living in the urban areas is not too good but in comparison with the rural areas they are quite well off. People in the village are deprived of the basic necessities like roads, gas and electricity.

The level of satisfaction improves as the level of education rises with highly significant level of association as suggested by chi square test. In Pakistan a majority of the people is illiterate and this proportion is worse among the elderly people.

The elderly whose physiological needs are fulfilled 43 percent of the elderly are very much satisfied and 48 percent are 'moderately satisfied'. On the other hand among the elderly whose physiological needs are not met, percentage points are 20 and 68 for the elderly who are 'very much satisfied' and 'moderately satisfied' respectively. Chi square test reveals that there is highly significant association present between the two variables. From the results it can be observed that due to absence of physiological needs elderly are not worse off with respect to their SWB, although there is significant association present between the two variables. It shows some sort of contentment among the elderly in Pakistan.

Among the elderly, whose safety needs is not fulfilled, 20 percent are 'very much satisfied' as compared to 34 percent whose safety need is met. Similarly only 3 percent of

¹Due to the limited space, bivariate analysis tables were omitted from the paper.

the elderly enjoying safety needs are in the category of 'not at all satisfied' as compared to 27 percent whose safety needs are not fulfilled. Chi square provides the evidence of highly significant association between SWB and safety needs. The trend of this association is also clear that as the safety needs are met, person is satisfied and vice versa.

Looking at the relationship between 'time given by children', which is used as a proxy of love needs, those elderly who are given time by their children and other household members are better off as far as their level of satisfaction in life is concerned. Among the elderly who are not given time by their household members 14 percent feel 'very much satisfied' as compared to 28 percent of those elderly whose family member entertain them. Similarly only 9 percent of the elderly who are given time by their household members feel 'not at all satisfied' as compared to 37 percent who are not given time by the family members. Chi square test suggests that there is a highly significant relationship between these two variables.

If we look at the relationship between 'role in the decision making', which is used as a proxy of esteem needs among the elderly, with level of satisfaction, these two variables are highly associated as the chi square test is highly significant. As the level of decision making becomes pivotal, the level of satisfaction increases. Among the elderly, who take most of the decision by themselves, 45 percent are very much satisfied as compared to 21 percent of those who take decision with joint consent, 19 percent of those whose children take decisions and 8 percent of those who have no role in the decision making. Similarly only 12 percent of the elderly who take decision by themselves feel 'not at all satisfied' as compared to 29 percent of those elderly who have no role in the decision making.

In the analysis variable of achievement in the life is taken as a proxy of self-actualisation needs of the elderly in Pakistan. The chi square test depicts a highly significant association between the variable of achievement in the life and level of satisfaction. Among the elderly who have achieved their aim in life are 79 percent 'very much satisfied' as compared to 24 percent for those who have achieved their aim 'to some extent', 8 percent of those who have achieved their aim 'not so much' and 14 percent of those who have achieved their aim in life 'not at all'.

From the bivariate analysis of the relationship of level of satisfaction of the elderly with that of all the variable under study, it is clear that those elderly who are more educated, live in the urban areas, have time from their family members, have a pivotal role in the decision making and have some sense of achievement in their life are better off with respect to their satisfaction in life as compared to other categories of each variable. Sex and age has no significant association with the variable of level of satisfaction.

Relationship of Physiological Needs with Different Sociodemographic Variables

Overall situation of physiological needs among the elderly is not so good. Among the elderly only 32 percent are provided with the physiological need. This proportion is very low as in Pakistan almost 33 percent of the population lives under the poverty line.

The situation is almost same for both the sexes as far as physiological needs is concerned. Chi square test reveals the same result as it is insignificant. In order to find out the adjusted effect of sex of the elderly on the fulfillment of the physiological needs after controlling the effect of all other control variables, binary logistic regression is applied. It reveals that the odds for male elderly that their physiological needs are fulfilled are almost 60 percent higher than female elderly with a highly significant coefficient.

Unadjusted relationship of level of education and physiological need is quite clear. As the level of education increases, proportion of elderly whose physiological needs are fulfilled, rises and vice versa. Chi square test also suggests that there is highly significant association present between the two variables. Same trend can be observed from the results of binary logistic regression, which shows that as higher the level of education of the elderly, the higher are chances of fulfillment of the physiological needs among the elderly with highly significant coefficients.

Relationship among elderly in different age groups and physiological needs is not associated suggested by both chi square test and binary logistic regression although the 'older old' are a bit deprived of as compared to other two younger groups.

Higher proportion of elderly people living in the rural areas is deprived of the physiological needs as compared to the elderly in the urban areas (73 percent versus 55) and vice versa. Association between the two variables is highly significant according to chi square test. Same trend of the results can be observed in binary logistic regression with highly significant coefficient.

Relationship of Safety Needs with Different Sociodemographic Variables

Overall 65 percent of the elderly have safety needs fulfilled.

Higher percentage of male elderly is enjoying safety needs as compared to female elderly (70 percent versus 60 percent). The association is highly significant suggested by chi square test. Binary logistic regression, which gives adjusted effect of the sex of the elderly on the fulfillment of the safety needs, reveals same trend with highly significant coefficient.

Among the elderly with different levels of education, those who have no education are worse of as compared to elderly having education at any level. Those who are in the category of education from 5 to 9 standards are a bit better than those who have education between 1-4 standards and 10 standards or above. Test of association between two variables is highly significant. Adjusted relationship between these two variables shows same trend with highly significant coefficients.

There is not much difference among the elderly in different age groups as far as safety needs is concerned.

The prevailing situation of the variable of time given by children and other household members to elderly is given encouraging as 93 percent of the elderly are given time by their family members.

Elderly belonging to different place of residence, sex and age groups enjoy same level of love needs. Level of education has a significant association with the variable of time given by members of household. There is not much difference in the percentage points of the elderly who are given time at different levels of education although those elderly who have no education are slightly smaller in terms of percentages points than the elderly in other categories of the level of education.

Relationship of Esteem Needs with Different Sociodemographic Variables

Role in decision making is used as a proxy for 'esteem need'. Overall majority of the elderly have a vital role in decision making and 59 percent of them take decision with joint consent whereas 29 percent take decision by them selves. On the other hand there is a small proportion of 5 percent who have no role in the decision making among the

elderly. This could be due to the religious and cultural norms to abide by the orders of the elderly parents as majority of the population in the country is Muslim.

There is highly significant association between the two variables as chi square test is highly significant. Male have more authority in the decision making than their female counterparts and it is due the male dominant society where mostly head of the household is a male. Binary logistic regression also reveals the same result with highly significant coefficient.

Role in the decision making has also strong association with different age groups of the elderly as suggested by the highly significant chi square value: authority of the elderly people diminishes with the age. Regression analysis shows same relationship between age and esteem needs among the elderly.

Elderly living in the urban areas are slightly better off with respect to decision making. The regression analysis endorses the result of the test of association between place of residence and esteem needs among the elderly.

Similarly variable of education and role in the decision making are significantly associated. As the level of education increases there is an increase in the role in the decision making.

Relationship of Self-actualisation Needs with Different Sociodemographic Variables

Overall 13 percent of the elderly have the view of achieving their aim in life as 'very much' whereas 60 percent have 'to some extent' on the other hand only 5 percent of the elderly responded as 'not at all'.

There is not too much difference between the two sexes as suggested by chi square test. On the other hand the regression analysis shows that female elderly are better off than male elderly.

Highly significant association can be observed between self-actualisation need and place of residence. Overall these are mixed results although urban inhabitants are slightly well off. Reason for higher percentage of urban residents, responding that they have achieved their aim in life 'very much', is the opportunities available to them. The regression analysis, with highly significant coefficients, demonstrates the same trend as suggested by the test of association.

Education has a vital role in the achievement of the aim in life among the elderly in Pakistan as suggested by chi square test the regression analysis.

From the above bivariate unadjusted analysis, it is clear that the main factors which are significantly associated with the perception about the achievement of aim in the life are level of education and place of residence whereas sex of the elderly also plays a vital role, as male elderly, with higher level of education and living in the urban areas have higher percentages of the responses towards achievement of aim in life as compared to other categories of these variables. On the other hand age of the elderly does not have any association with the perception about the aim in life.

4.3. Multivariate Analysis

4.3.1. Introduction

Multinomial logistic regression is applied to find out the net effect of each variable included in the model while controlling the effect of all others. The reference category is

'not at all satisfied' for the dependent variable. Comparison for each category of the dependent variable with that of reference category is given for all the models in a separate table.

4.3.2. Results

'Very Much Satisfied' Relative to 'Not at All Satisfied'

In the basis model variables of age, sex, education and place of residence are included. Looking at Table 1 it is evident that only education has a significant effect on the overall well-being of the elderly in Pakistan as suggested by the PSES round II data while comparing 'Very much satisfied' relative to 'not at all satisfied' whereas the coefficients for each level of education are also quite high in magnitude comparing with that of 'no education'.

In the second model the variable of physiological needs is included with that of all the control variables. In Table 1 it is evident that the impact of this variable is statistically highly significant. Looking at the relationship of physiological needs with that of satisfaction in life in terms of the odds ratio, the odds are almost 70 percent higher ($\exp(0.53)$) for the elderly to be 'very much satisfied' relative to the odds of 'not at all satisfied' with an increase of one unit of the basic physiological needs. In this model too, education is the only variable which is significant among the control variables although its level of significance and the magnitude of the coefficients for all the different levels of educations are a bit lower than what were observed in the basic model but they are still highly significant with high levels of magnitudes of the coefficient.

In the next model safety needs are added in the previous model. The variable of safety needs is highly significant with more than 600 percent higher odds ($\exp(2.01)$) that the elderly would be 'very much satisfied' as compared to the odds of 'not at all satisfied' if there is an increase of one unit in the safety needs. Results show that with the inclusion of the variable of safety needs in the model, the variable of physiological needs is no more highly significant with relatively lower magnitude of the coefficient as compared to the magnitude observed in the previous model. Level of education has lost its significance for the highest level: 10+, whereas other two levels are still highly significant but with a lower level and a decreasing level of magnitude of the coefficients than what were observed in the previous model.

Looking at the next model where love needs are also included in the model, which are highly significant with high magnitude of coefficient. In terms of odds ratio those elderly whose children and other household members did not give time, the odds are almost 68 percent less ($\exp(-1.148)$) that they will be 'very much satisfied' than the odds that they are 'not at all satisfied' as compared to those elderly who are entertained by their children and other household members. Variable of safety needs is still highly significant with a relatively lower coefficient value whereas there is a subsequent decrease in the levels of significance and magnitudes of the coefficients of the variables of physiological needs and level of education from the previous model. Other control variables remain insignificant in this model too.

In the next model when 'esteem needs' are added in the previous model, the odds that elderly who have 'No role at all in decision making' are 'very much satisfied' are 93 percent less ($\exp(-2.661)$) than the odds of being 'not at all satisfied' as compared to

Table 1
 Multinomial Logistic Regression Results for Very Much Satisfied
 Relative to Not at All Satisfied

Very Much Satisfied		Basic Model		Physiological Needs		Physiological and Safety Needs	
		Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Intercept		0.388	0.962	0.512	0.972	0.359	1.115
Age		-0.001	0.0.014	-0.002	0.014	0.007	0.016
Sex	Male	0.042	0.242	0.195	0.246	0.047	0.284
	Female	0.000	.	0.000	.	0.000	.
Education	Education 10+	2.141***	0.629	1.665***	0.643	0.979	0.689
	Education 5-9	1.813***	0.500	1.562***	0.506	1.206**	0.568
	Education 1-4	1.937**	0.756	1.741**	0.762	1.646**	0.828
	No education	0.000	.	0.000	.	0.000	.
Place of Residence	Urban	0.295	0.245	0.149	0.250	0.071	0.288
	Rural	0.000	.	0.000	.	0.000	.
Physiological Needs				0.530***	0.167	0.264	0.167
Safety Need						2.011***	0.157
Love Needs	No						
	Yes						
Esteem needs	Not at all						
	Not so much						
	To some extent						
	Very much						
Self-actualisation Needs	Not at all						
	Not so much						
	To some extent						
	Very much						
	N	1055		1055		1055	
	nagelkerke R2	0.094		0.132		0.344	
	-2 Likelihood	718.54		1765.78		1532.11	
	Chi-square	85.99		123		356.68	
	df	12		14		16	
Intercept		0.470	1.123	0.110	1.149	4.082**	1.606
Age		0.007	0.0.016	0.021	0.017	0.008	0.018
Sex	Male	0.085	0.286	-0.139	0.298	-0.144	0.316
	Female	0.000	.	0.000	.	0.000	.
Education	Education 10+	0.904	0.688	0.928	0.697	0.243	0.744
	Education 5-9	1.215**	0.585	1.118	0.601	0.756	0.622
	Education 1-4	1.513*	0.823	1.441	0.821	0.935	0.850
	No education	0.000	.	0.000	.	0.000	.
Place of Residence	Urban	0.099	0.291	0.032	0.295	-0.034	0.318
	Rural	0.000	.	0.000	.	0.000	.
Physiological Needs		0.253	0.167	0.224	0.172	0.091	0.182
Safety Need		1.969	0.158	2.009***	0.162	1.253***	0.170
Love Needs	No	-1.148	0.462	-1.197**	0.475	-1.556***	0.516
	Yes	0.000	.	0.000	.	0.000	.
Esteem Needs	Not at all			-2.661***	0.716	-3.095***	0.777
	Not so much			-0.888*	0.528	-1.484**	0.587
	To some extent			-0.540*	0.314	-1.122***	0.352
	Very much			0.000	.	0.000	.
Self-actualisation Needs	Not at all					-4.372***	1.164
	Not so much					-4.141***	1.078
	To some extent					-1.693	1.058
	Very much					0.000	.
	N	1055		1055		1055	
	nagelkerke R2	0.354		0.404		0.499	
	-2 Likelihood	1520.1		1455.53		1321.6	
	Chi-square	368.67		433.25		567.18	
	df	18		24		30	

Source: Original data file of PSES 2001 round II.

Values in parenthesis are percentages.

those elderly who 'take most of the decisions by them selves' with highly significant coefficient. Similarly the odds that elderly whose children take most of the decisions and those elderly who take decision with joint consent are 'very much satisfied' are 59 percent ($\exp(-0.888)$) and 42 percent ($\exp(-0.54)$) less than the odds that the elderly are 'not at all satisfied' respectively as compared to those who 'take most of the decisions by them selves' with slightly significant coefficients. The variables of love needs, safety needs and level of education have almost same level of significance and magnitudes of the coefficients as observed in the previous model. Other control variables are still insignificant.

In the final model where all the basic needs are included with that of control variables, the odds that the elderly have 'not at all achieved their aim in life', 'not so much achieved their aim in life' or 'to some extent achieved their aim in life' are 'very much satisfied' are 98 ($\exp(-4.372)$), 98 ($\exp(-4.141)$) and 81 ($\exp(-1.693)$) percent less than the odds that the elderly are 'not at all satisfied' as compared to those who have achieved their aim in the life, respectively. Coefficients of first two categories of the variable 'achievement of aim in life' are highly significant whereas the third category is slightly significant. All other variables in the model have same level of significance and magnitude of the coefficient as observed in the previous model except for the level of education which is no more significant.

From the above results, which are comparison between 'very much satisfied' and 'not at all satisfied', except from physiological needs, all other needs add to the SWB of the elderly with highly significant magnitudes of the coefficients. Among the control variables none of them is important in the final model but initially level of education proved to be an important predictor of SWB of the elderly.

'Moderately Satisfied' Relative to 'Not at All Satisfied'

In the basic model, in which only control variables i.e. age, sex, education and place of residence are included, none of them is significant as given in Model 2. It means that none of these control variables have any significantly effect on the elderly as far as relationship between 'moderately satisfied' relative to 'not at all satisfied' is concerned.

In the second model the variable of physiological needs is included with that of all the control variables. Impact of Physiological needs on the SWB on the elderly is also insignificant.

In the next model safety needs are added in the previous model. The variable of safety needs is highly significant with more than 200 percent higher odds that the elderly would be 'moderately satisfied' as compared to the odds of 'not at all satisfied' if there is an increase of one unit in the safety needs. Model 2 shows that with the inclusion of this variable there is no difference in the significance of all other variables.

Looking at the next model where love needs are also included in the model, which are highly significant with high magnitude of coefficient. In terms of odds ratio those elderly whose children and other household members did not give time, the odds are almost 68 percent less ($\exp(-1.157)$) that they are 'moderately satisfied' than the odds that they are 'not at all satisfied' as compared to those elderly who are entertained by their children and other household members. Variable of safety needs is still highly significant with a relatively lower coefficient value whereas all other variables are still insignificant.

Table 2
 Multinomial Logistic Regression Results for Moderately Satisfied
 Relative to not at All Satisfied

Moderately Satisfied		Basic Model		Physiological Needs		Physiological and Safety Needs	
		Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Intercept		1.952**	0.852	1.943**	0.854	2.345**	0.951
Age		-0.006	0.012	-0.006	0.012	-0.002	0.014
Sex							
	Male	0.212	0.212	0.210	0.214	0.092	0.243
	Female	0.000	.	0.000	.	0.000	.
Education							
	Education 10+	0.573	0.630	0.542	0.639	0.083	0.668
	Education 5-9	0.740	0.490	0.724	0.493	0.478	0.542
	Education 1-4	0.976	0.745	0.964	0.747	0.945	0.790
	No education	0.000	.	0.000	.	0.000	.
Place of residence							
	Urban	0.009	0.223	0.004	0.224	-0.019	0.253
	Rural	0.000	.	0.000	.	0.000	.
Physiological needs				0.045	0.162	-0.144	0.161
Safety need						1.106***	0.107
Love needs							
	No						
	Yes						
Esteem needs							
	Not at all						
	Not so much						
	To some extent						
	Very much						
Self-actualisation needs							
	Not at all						
	Not so much						
	To some extent						
	Very much						
	N	1055		1055		1055	
	nagelkerke R2	0.094		0.132		0.344	
	-2 Likelihood	718.54		1765.78		1532.11	
	Chi-square	85.99		123		356.68	
	df	12		14		16	

Moderately Satisfied		Physiological, Safety and Love Needs		Physiological, Safety Love and Esteem Needs		Full Model	
		Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Intercept		2.462**	0.962	1.935**	0.971	3.699**	1.476
Age		-0.002	0.014	-0.001	0.014	-0.011	0.015
Sex							
	Male	0.129	0.245	0.189	0.253	0.078	0.269
	Female	0.000	.	0.000	.	0.000	.
Education							
	Education 10+	0.008	0.667	0.112	0.676	-0.443	0.719
	Education 5-9	0.492	0.559	0.566	0.572	0.358	0.589
	Education 1-4	0.810	0.786	0.749	0.783	0.221	0.807
	No education	0.000	.	0.000	.	0.000	.
Place of residence							
	Urban	0.010	0.257	-0.005	0.259	0.067	0.278
	Rural	0.000	.	0.000	.	0.000	.
Physiological needs		-0.156	0.161	-0.140	0.166	-0.179	0.172
Safety need		1.063***	0.108	1.058***	0.110	0.772***	0.121
Love needs							
	No	-1.157***	0.327	-1.030***	0.337	-1.230***	0.376
	Yes	0.000	.	0.000	.	0.000	.
Esteem needs							
	Not at all			-0.455	0.464	-0.950*	0.507
	Not so much			0.309	0.434	-0.056	0.472
	To some extent			0.710**	0.282	0.177	0.316
	Very much			0.000	.	0.000	.
Self-actualisation needs							
	Not at all					-2.823**	1.118
	Not so much					-1.445	1.056
	To some extent					0.251	1.060
	Very much					0.000	.
	N	1055		1055		1055	
	nagelkerke R2	0.354		0.404		0.499	
	-2 Likelihood	1520.1		1455.53		1321.6	
	Chi-square	368.67		433.25		567.18	
	df	18		24		30	

Source: Original data file of PSES 2001 round II.
 Values in parenthesis are percentages.

In the next model when 'esteem needs' are added in the previous model, the odds that elderly who 'take decision with joint consent' are 'moderately satisfied' are almost 100 percent higher ($\exp(0.71)$) than the odds of being 'not at all satisfied' as compared to those elderly who 'take most of the decisions by them selves' with highly significant coefficient. Other two categories of this variable are insignificant. The variables of love needs and safety needs have almost same level of significance and magnitudes of the coefficients as observed in the previous model. Other variables remain insignificant.

In the final model where all the basic needs are included with that of control variables, the odds that the elderly have 'not at all achieved their aim in life' are 'moderately satisfied' are 94 percent less ($\exp(-2.823)$) than the odds that the elderly are 'not at all satisfied' as compared to those who have achieved their aim in the life with highly significant coefficient. Coefficients of other two categories of the variable 'achievement of aim in life' are insignificant. All other variables in the model have same level of significance and magnitude of the coefficient as observed in the previous model except for the esteem needs. In the previous model only 'decision taken by joint consent' was significant but in this model only the coefficient of 'no role in the decision making' is highly significant with odds for those elderly who have 'no role in the decision making' are 'moderately satisfied' are 61 percent less ($\exp(-0.95)$) than the odds of elderly being 'not at all satisfied' relative to 'most of the decisions taken by themselves'.

5. DISCUSSION AND CONCLUSIONS

5.1. Introduction

An effort has been made to study the subjective well-being of the elderly in Pakistan in connection with the basic needs. In Pakistan ageing will be a huge problem in the coming years given adverse economic situation and low level of educational attainment with a high unemployment ratio, although there is small proportion of elderly population at the moment. In the absence any concrete policy and intervention to address the needs of ever rising elderly population, it was important to study the prevailing situation of elderly in Pakistan with respect to basic needs, and their connection with the elderly's SWB. In Section 1.3 different research questions are given. In the following sections, those questions will be answered.

5.2. Relationship of the SWB with Its Main Determinants

In order to study the relationship of the SWB of the elderly with its main determinants, multivariate regression analysis was carried out. From multinomial regression it was discovered, that except from physiological needs, all other needs have significant effect on the SWB of the elderly. On the other hand none of the sociodemographic variables have any impact of the SWB of the elderly.

5.3. Prevailing Situation of SWB and Basic Needs of Elderly

Among the elderly in Pakistan, according to PSES round II data, 11 percent reported to be not satisfied with life hence having adverse situation as far as well-being of life is concerned. From cross tabulation, it was discover that those elderly who have all the basic needs, defined in this study, fulfilled, are enjoying higher level of well-being.

Similarly looking at the SWB by sociodemographic variables, it was explored that elderly in the age group 65-74, male, with higher level of education and those who were living in the urban areas were enjoying higher levels of SWB as compared to their counterparts. Variable of age has insignificant chi square test whereas all other variables have significant association with the SWB.

Majority of the elderly (68 percent) in Pakistan are deprived of the physiological needs and in term of percentage points, there is not much difference between male and female elderly whose physiological needs are not fulfilled. Due to this reason, test of association could not capture any association between the sex and the fulfillment of physiological needs of the elderly. Since, the test of association only captures unadjusted relationship regression analysis was applied to find out the adjusted relationship of sex with the physiological needs of the elderly while controlling the effect of all other sociodemographic variables. From the regression analysis it was discovered that male elderly were more likely that their physiological needs were not fulfilled as compared to female elderly. On the other hand, those elderly who have higher level of education were better off in terms of percentage points as far as their fulfillment of physiological needs was concerned. Similarly, from the regression analysis it was discovered that elderly with higher level of education were much likely that their physiological needs were fulfilled as compared to those elderly who have no education. Same trend was observed for the place of residence in both adjusted and unadjusted relationship. Situation of physiological needs was identical among the elderly at different ages, revealed by both adjusted and unadjusted tests.

The safety needs, which comprised of health status, perception about future and availability of suitable place, were met by majority (65 percent) of the elderly in Pakistan. Situation of female elderly and those who have no education at all, was found worse off with respect to the safety needs.

According to the results, a huge majority of the elderly in Pakistan was enjoying the love needs (93 percent), which were assessed by time given by the children. Those elderly who have highest level of education (10 and above) have better condition with respect to love needs suggested by both test of association and regression analysis, as compared to those who have lower levels of education. Difference among the elderly with respect to their sociodemographic variables was insignificant.

Condition of the esteem needs, which was judged by the role in the decision making in household by the elderly, was fulfilled by majority of the elderly (59 percent). Male elderly, elderly with higher level of education, living in urban areas and those who were relatively young have vital role in decision making as suggested by the test of association and regression analysis.

Achievement of the aim in life was use as a proxy for the self-actualisation needs. From the analysis it was observed that 13 percent of the elderly have the opinion that they have 'very much achieved their aim in life', whereas 5 percent had the view of 'not at all' about the achievement of the aim in life. Majority of the elderly were of the view of that they have achieved their aim in life 'to some extent'. Higher proportion of male elderly, elderly with higher education and those who lived in the urban areas have the optimistic view about the achievement of the aim in life as compared to other categories of these variables. On the other hand regression analysis showed that male elderly were less likely to achieve their aim in life as compared to female elderly.

Summing up, the prevailing situation with respect to above discussed variables it can be concluded that elderly situation in physiological needs was adverse whereas condition of safety needs was also not so encouraging. Among other needs, majority of the elderly were in good condition. Situation with respect to 'love needs' was very good.

5.5. Discussion

From the analysis, it can be observed that safety, love, esteem and self-actualisation were the most important variables who contributed towards the higher levels of the SWB among the elderly. Whereas physiological needs have some positive effect on the SWB of the elderly but not in that vigor with which other variables have impact. Similarly, it is argued that in Pakistan there is sex discrimination in all spheres of life, but here in this study, contrary results have been observed in many dimensions of elderly's life. Moreover, the elderly living in the urban areas and having some education were better off as compared to those who are living in the rural areas or have no education, respectively.

5.6. Recommendation

This study throws light on the prevailing situation in different aspects of the life of elderly, while discussing the importance of those factors in improving the SWB of elderly. In Pakistan there is absence of any concrete policy addressing the sufferings of the elderly population. Policies which are made mainly address the economic problems with little attention given to health problems. Results in this study have shown that high proportion of elderly is facing problems with physiological needs and safety needs. From the analysis, it was discovered that a vast majority of elderly were deprived of the physiological (68 percent) and safety needs (35 percent).² The perception about the home care for elderly is eroding has been disconfirmed from the results of this study as majority of the elderly were entertained by their children and other household members and in decision making too, elderly have a vital role. Therefore, such policies should not be formulated which improved the economic and health status of the elderly at the cost of their love and esteem needs. Rather than that, such policies should be formulated which appraise the overall well-being, to provide economic assistance to their families as in Malaysia, those families are given tax incentives who take care of their elders. Another option, for the improvement of the elderly's physiological and safety needs, could be that the children should be made legally responsible for the support of their elderly parents as it was done in Singapore [Westly, *et al.* (2000)].

There is also need for further research with in-depth analysis, to find out which kind of genuine problems are faced by elderly. The SWB of the elderly may be studied more thoroughly. In this study, for example, subjective health status is used to evaluate health status, which might include personal perceptions and biases, as a proxy to assess the of safety needs,. In spite of that, proper diagnostic of the elderly's health problems is a must to find out the actual health status of the elderly. In addition to that, analysis should also focus on the supply and demand side of different problems faced by the elderly.

²Physiological needs are combination of need based poverty and calorie intake. On the other hand, variable of safety needs comprised of health status, suitable place of residence and future perception of the elderly.

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