Methodology
**Present Study and its background:**

The demographic transition that has started from the early part of the twentieth century has lead to an abrupt and rapid growth spurt of the elderly population all over the world. Graying of population coupled with the presence of high individual difference in the aging population has makes it necessary to study old age so that in near future the rapidly growing aging population can continue to contribute to the society in the same manner that other age groups do. Old age is generally believed to be a period of decline and deterioration but all is not negative. As the growing amount of literature suggests it is also a period of growth and development. A cultivation of the factors associated with growth may help the aging population to remain integrated with the society and continue to serve the society by providing their valuable care and wisdom to the younger generations. Recognition of this perspective has given rise to the development of the concepts viz. ‘active aging’, ‘healthy aging’ and ‘successful aging’. Despite apparent paradox of this concept, the concept of successful aging has received immense attention since later part of the twentieth century. Though there is a boost in research on successful aging, it has been found that it is difficult to arrive at a consensus definition of successful aging. Additionally many areas of successful aging are yet to be explored especially in the Indian context. Though aging research has seen an immense boost in India and successful aging may have been explored to some extent, there is a dearth of systematic reporting of successful aging in India. Additionally, most of the successful aging literature focuses on bio-medical aspects of the same and there is relative deficit of psycho-social studies on successful aging. As far as the present literature search is concerned, a multi-dimensional approach to successful aging focusing on character strength, aspects of self conceptualization, level of functioning and wellbeing was not found.
With this view the present study has been formulated. The present study has focused on successful aging and its relation with different psychosocial variables. The study consisted of elderly people living in the city of Kolkata. It has consisted of two groups: male and female belonging to the age group of 65 to 75 years with a minimum education of 15 years. The study purports to find out the difference between male and female elderly people in successful aging (measured by level of life satisfaction, activity and engagement with life) living in the city of Kolkata with respect to different psycho-social factors viz. wisdom and its different aspects, general self efficacy, forgiveness and its different aspects, gratitude and different aspects of quality of life. It also aims to find out the nature of relation of these psycho-social factors with measures of successful aging as well as to examine the impact of the same psycho-social factors on the measures of successful aging.

3.1. Objectives:

Objectives related to group differences with respect to successful aging:

1. To find whether there is any difference between community dwelling male and female elderly adults with respect to different measures of successful aging:
   a. Life satisfaction
   b. Level of activity
   c. Engagement with Life

Objectives related to group differences with respect to relevant psychosocial factors:

2. To find whether there is any difference between community dwelling male and female elderly adults with respect to different psycho-social measures:
   a. Wisdom as whole and different aspects of wisdom
   b. generalized self efficacy
c. Forgiveness as whole and different components of forgiveness
d. Gratitude.

e. Different domains of quality of life.

Objectives related to interrelationship of successful aging measures (life satisfaction and level of activity, engagement with life) and psychosocial factors:

Successful aging measure: Life Satisfaction

3. To find the nature of relationship between life satisfaction and

   a. Wisdom as whole and different aspects of wisdom
   b. Generalized self efficacy
   c. Forgiveness as whole and different components of forgiveness
   d. Gratitude.

   e. Different domains of quality of life.

Successful aging measure: Level of Activity

4. To find the nature of relationship between level of activity and

   Wisdom as whole and different aspects of wisdom
   b. Generalized self efficacy
   c. Forgiveness as whole and different components of forgiveness
   d. Gratitude.

   e. Different domains of quality of life.

Successful aging measure: Engagement with Life

5. To find the nature of relationship between engagement with life and
Wisdom as whole and different aspects of wisdom
b. generalized self efficacy
c. Forgiveness as whole and different components of forgiveness
d. Gratitude.
e. Different domains of quality of life.

Objectives related to relative contribution of psychosocial factors on successful aging:

6. To find the relative contribution of different psychosocial factors namely different aspects of quality of life, wisdom as whole and different aspects of wisdom, self efficacy, different aspects of forgiveness as whole and its different aspects, and gratitude on different measures of successful aging:
   a. Life satisfaction
   b. Level of activity
   c. Engagement with Life

3.2 Null Hypotheses:

Null hypotheses related to group differences with respect to successful aging:

1. There is no difference between community dwelling male and female elderly adults with respect to different measures of successful aging
   a. Life satisfaction
   b. Level of activity
   c. Engagement with Life
Null hypotheses related to group differences with respect to relevant psychosocial factors:

2. There is no difference between community dwelling male and female elderly adults with respect to:
   a. wisdom as a whole and its components viz. i)cognitive, ii)affective and iii)reflective
   b. generalized self efficacy.
   c. forgiveness as a whole and its different components viz. i)self, ii)others and iii)situation
   d. gratitude.
   e. different aspects of quality of life (i)Physical Health, ii)Psychological iii)Social, iv) Environmental domains)

Null hypotheses related to interrelationship of successful aging measures (life satisfaction and level of activity, engagement with life) and psychosocial factors:

Successful aging measure: Life Satisfaction

3. There is no significant relationship between life satisfaction and
   a. wisdom as a whole and its components viz. i)cognitive, ii)affective and iii)reflective
   b. generalized self efficacy.
   c. forgiveness as a whole and its different components viz. i)self, ii)others and iii)situation
   d. gratitude.
Successful aging measure: Level of Activity

4. There is no significant relationship between level of activity and

   a. wisdom as a whole and its components viz. i)cognitive, ii)affective and
      iii)reflective
   b. generalized self efficacy.
   c. forgiveness as a whole and its different components viz. i)self, ii)others and
      iii)situation
   d. gratitude.
   e. different aspects of quality of life (i)Physical Health ii)Psychological iii)Social,
      iv)Environmental domains)

Successful aging measure: Engagement with Life

5. There is no significant relationship between engagement with life and

   a. wisdom as a whole and its components viz. i)cognitive, ii)affective and
      iii)reflective
   b. generalized self efficacy.
   c. forgiveness as a whole and its different components viz. i)self, ii)others and
      iii)situation
   d. gratitude.
   e. different aspects of quality of life (i)Physical Health ii)Psychological iii)Social,
      iv)Environmental domains)
Null hypotheses related to relative contribution of psychosocial factors on successful aging:

6. There is no significant relative contribution of aspects of quality of life (i) Physical Health (ii) Psychological (iii) Social, (iv) Environmental domains), wisdom as a whole (a) and its components viz. cognitive (i), affective (ii) and reflective (iii), generalized self efficacy (b), forgiveness as a whole (c) and its different components viz. self (i), others (ii) and situation (iii) and gratitude (d) on life satisfaction (as a measure of successful aging).

7. There is no significant relative contribution of aspects of quality of life (i) Physical Health (ii) Psychological (iii) Social, (iv) Environmental domains), wisdom as a whole (a) and its components viz. cognitive (i), affective (ii) and reflective (iii), generalized self efficacy (b), forgiveness as a whole (c) and its different components viz. self (i), others (ii) and situation (iii) and gratitude (d) on level of activity (as a measure of successful aging).

8. There is no significant relative contribution of aspects of quality of life (i) Physical Health (ii) Psychological (iii) Social, (iv) Environmental domains), wisdom as a whole (a) and its components viz. cognitive (i), affective (ii) and reflective (iii), generalized self efficacy (b), forgiveness as a whole (c) and its different components viz. self (i), others (ii) and situation (iii) and gratitude (d) on engagement with life (as a measure of successful aging).

3.3. Sample

The sample consists of 206 male and female elderly people belonging to the age group of 65 and 75 years with a minimum education of 15 years and having a per capita income of
at least 5000/ rupees per month in the post retirement period. The sample consisted of 109 males and 97 females.

**Inclusion criteria:**

- Ethnicity: Bengali
- Minimum 15 years of education
- Age range- 65 to75 years

**Exclusion criteria:**

- History suggestive of past psychiatric illness
- Having any physical and mental disability
- Currently suffering from life threatening illness (any kind of terminal illness and complicated medical conditions)
- Currently having psychiatric diagnosis

**3.4 Sample description:**

The present sample consists of 52.91% male participants and 47.09% female elderly participants. 60.63% of the participants belonged to the age group of 65 to 69 years while 39.37% participants belonged to an age group between 70 and 75 years. 62.62% of the participants have 15 years of education while the rest of the participants have more than 15 years of education. As far as the family type is concerned 69.42% of the participants live in nuclear family set up while 18.45% lived in joint family and 12.14% lived in extended family set up. As far as the chronic disease profile of the participants are concerned 40.29% suffered from hypertension, 16.51% had diabetes, 12.14% had cardio-vascular disease, 27.67% suffered from arthritis and other orthopedic problem, 6.8% suffered from pulmonary disease and 4.37% reported gastric related problems.
Graph showing % of male and female participants

- Male elderly participants
- Female elderly participants

Graph showing % of participants with respect to years of education

- 15 years of education
- More than 15 years of education

Graph showing % of participants with respect to family type

- Nuclear family set up
- Joint family set up
- Extended family set up
3.5. **Sampling Method:**

The sample was collected using purposive sampling method from the metropolitan area of Kolkata. The sample was selected from different regions of Kolkata. The areas from which the sample was selected can be designated as: Eastern, Western, Southern, Northern and Central. 10.33% of the participants belonged to eastern part of the city, 25% belonged to western part of the city, 45.11% belonged to Southern region of the city while 19.56% lived in Northern part of Kolkata. Different local clubs and housing societies were approached through different references and were requested for contacts of people living in the vicinity within the age group of 65 and 75 years. The contacts provided were randomly approached over the telephone and selected on basis of aforementioned exclusion and inclusion criteria. On basis of consent of the family members and the prospective participants, the elderly were approached in person for the first round of the interview i.e. the screening. Those who were selected through screening were continued with the final part of the interview.

3.6. **Operational definitions of the constructs:**

**Successful Aging:**

Successful aging is operationalised for the present study as the combination of an ability to maintain activities of daily living along with the ability to find a sense a purpose in life in activities that are personally valued and finding satisfaction in evaluation of life.

**Life Satisfaction/subjective well being:**

Subjective Well-Being has been defined as a person’s cognitive and affective evaluations of his or her life. These evaluations include emotional reactions to events as well as cognitive
judgments of satisfaction and fulfillment (Diener, Lucas and Oishi2003)

**Level of Activity:**

Level of activity refers to the extent the activities of daily living (ADL) and instrumental activities of daily living (IADL) are preserved.

**Engagement with Life:**

Engagement with life is purpose in life, defined in terms of the extent to which a person engages in activities that are personally valued(Scheier et al ,2006)

**Wisdom:**

Wisdom is a "combination of personality qualities" that "cannot exist independently of individuals." It is “a property of individuals," and is a three-dimensional personality characteristic, the three dimensions being Cognitive, Reflective, and Affective(Ardelt,2004).

**Generalized Self Efficacy:**

Generalized Self Efficacy is an optimistic self-belief that one can perform a novel or difficult tasks, or cope with adversity -- in various domains of human functioning (Schwarzer, 1992).

**Forgiveness:**

“The framing of a perceived transgression such that one’s responses to the transgressor, transgression, and sequelae of the transgression are transformed from negative to neutral or positive. The source of a transgression, and therefore the object of forgiveness, may be
oneself, another person or persons, or a situation that one views as being beyond anyone’s control (e.g., an illness, “fate,” or a natural disaster). (Thompson et al., 2005, p. 318).”

**Gratitude:**

Gratitude is an emotion that the individual experiences when they “affirm that something good has happened to them” along with the recognition that someone else is responsible for this good (Emmons, and McCoullagh, 2004).

**Quality of Life:**

QOL as ‘an individual’s perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns’.

**3.7 Tools used:**

- Socio-demographic Information Schedule
- Short Test of Mental Status (Kokmen et al., 1987)
- The Satisfaction With Life Scale (Diener, Emmons, Larsen & Griffin, 1985)
- Groningen Activity Restriction Scale (Kempen et al. 1996)
- Engagement with Life Scale (Scheier et al. 2006)
- Three-Dimensional Wisdom Scale (Ardelt, 2003)
- Generalised Self Efficacy Scale (Schwarzer & Jerusalem, 1995).
- Heartland Forgiveness Scale (Thompson et al. 2005)
- The Gratitude questionnaire (McCullough et al. 2002)
- World Health Organisation Quality of Life –BREF (WHO, 1993)
3.8. **Tool Descriptions:**

3.9.1. **Socio-demographic Information Schedule: (Appendix I)**

Socio-demographic Information Schedule includes Name, Age, Sex, Education, Marital Status, Occupation, Family type, Family Income, Presence of Significant Life Event in the Past 6 Months and Medical History.

3.9.2. **Screening Tool: (Appendix II)**

**Short Test of Mental Status (STMS):**

The Short Test of Mental Status was developed by Emre Kokmen, James Naessens and Kenneth Offord in 1987 in the Department of Neurology, Mayo Clinic, Rochester.

It consists of eight subtests namely: Orientation, Attention, Calculation, Abstraction, Information, Construction and Recall. The short test of mental status takes approximately 5 minutes to administer. No time limit is imposed for performance of any subtest.

**Administration:**

Initial Introduction to the test: "I would now like to examine your memory and related items. Please relax, pay attention to the questions I am asking, and answer them as best as you can."

Instructions to the individual sub-test are given below:

**Orientation.**—The patient is asked to give his or her (1) full name, (2) address, current location— that is, (3) building, (4) city, and (5) state—and the current date—(6) either the day of the week or the day of the month, (7) the month, and (8) the year.
Each correct response = 1 point. The maximal score was 8.

**Attention.**—The second subtest is forward digit span. The patient is told, "I will give you a series of numbers. Please pay close attention to them, wait until I am finished, and then repeat the numbers back to me in the same order as I have given them." Usually a span of five digits is given to the patient. If the patient responds correctly, the span is increased to six and then to seven. The patient's best performance is then recorded. If the patient is able to repeat seven digits forward, the test is terminated. The number of digits correctly repeated is the score; the maximal score is 7, and the minimal score is 0.

**Learning.**—The patient is told, "I shall now give you four words. I would like you to learn them, keep them in mind, and repeat them to me from time to time when I ask you to do so." The four words are always "apple," "Mr. Johnson," "charity," and "tunnel." The patient is asked to repeat the words. If he or she learned the words on the first trial, then the next subtest was given. If the patient is unable to learn all four words, the investigator repeats them for a maximum of four trials and recorded the number of trials that the patient required to learn all four words. If the patient is unable to learn all four words by the end of the fourth trial, the patient's best performance is recorded (the number of words learned and the number of trials required). Learning is scored in two parts. A point is earned for each word learned (a maximum of 4 points). One less than the number of trials (a maximum of 4) required to learn the words is subtracted from the score. Thus, the values that are subtracted are between 0 and 3.

**Arithmetic Calculation.**—The patient is asked to multiply 5 by 13, to subtract 7 from 65, to divide 58 by 2, and to add 11 and 29. Each correct answer earns 1 point, and the maximal score was 4.
**Abstraction.**—Interpretation of similarities is used as a test of abstraction. The word pairs are as follows: orange/banana, horse/dog, and table/bookcase. One point for each word pair is given only for definitely abstract interpretations (for example, horse/dog = animal). Concrete interpretations or inability to see a similarity earns 0 points for that word pair. The maximal score is 3.

**Information.**—The patient is asked to name the current president and the first president of the United States, to state the number of weeks per year, and to define an island. Each correct answer earns 1 point, and the maximal score is 4.

**Construction.**—The patient is asked to draw the face of a clock showing 11:15 and also to copy a three-dimensional cube. The patient is able to view the diagram of a cube, while drawing his or her own version. For each construction, an adequate conceptual drawing is scored as 2, a less than complete drawing earns a score of 1, and inability to perform the task earns a score of 0. The maximal score for the construction task is 4.

**Recall.**—At the end of the test, the patient is asked to recall the four words from the learning subtest—apple, Mr. Johnson, charity, and tunnel. No cues or reminders are provided. The patient earns 1 point for each word recalled, and the maximal score is 4.

**Total Score.**—The total score for each patient is the sum of the scores on the eight subtests. The highest possible score on the test is 38.

**Specificity and Sensitivity:**

A score of 29 on STMS yielded a specificity of 91.4 and 95.5 in Distinguishing 67 Patients With Alzheimer’s Dementia From 93 Patients Without Dementia; Again in a group of 87 Patients With Dementia and 93 Patients Without Dementia a score of 29 on STMS yielded a sensitivity of 92.0 and a specificity of 91.4. In another analysis it was found that in order to
distinguish 76 Patients With Dementia and 33 Patients Without Dementia all of whom were 60 Years of Age or Older a score of 29 yielded a sensitivity of 94.7 and specificity of 87.9 (Kokmen, Naessens and Offord, 1987).

**Cut off score**

It was found that using a threshold of 29 points or less to classify dementia helps to obtain specificity and sensitivity values of 90% or higher for distinguishing either patients with Alzheimer's dementia or patients with any dementia from non-demented patients. On the basis of this the authors decided a score of 29 to be the cut off score for STMS (Kokmen, Naessens and Offord, 1987).

**Selection of the Tool:**

Though Mini Mental Status Examination is used all over the world and even in Indian context, STMS is more sensitive to mild level of cognitive impairment (Tangwai, 2003) and as the population under this study is highly educated, in the present study STMS has been used. It has also been used in the present socio-cultural scenario and to the aging population previously (unpublished dissertation, Basak, 2011)

**Measures of Successful Aging Tools:**

**Subjective Wellbeing Scale: (Appendix III)**

Development of the scale:

SWLS was developed by Diener, Emmons, Larsen and Griffin (1985). It is a 5–item scale where items were selected from a pool of 48 items based on factor analysis.
SWLS measures perceived life satisfaction (e.g. ‘In most ways my life is close to ideal’). Scores are determined on a 7 point Likert scale and can range from 5 to 35 which implies ‘extremely dissatisfied’ and ‘highly satisfied’ respectively. Pavot and Diener (1993) provide an extensive list of studies that have used SWLS in normative data (mean ranged from 14.4 to 27.9 and S.D. ranged from 4.4 to 9.0)

Administration:

SWLS is designed around the idea that one must ask subjects for overall judgments of their lives in order to measure the concept of life satisfaction (Diener et al., 1985). It is administered with the following instruction:

Using 1 to 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. 7 = strongly agree; 6 = agree; 5 = slightly agree; 4 = neither agree nor disagree; 3 = slightly disagree; 2 = disagree; 1 = strongly disagree.

Scoring:

The scores of all the items are summed up to form the total score. The range of scores with its implications are: 30-35 = very high score; highly satisfied; 25-29 = high score; 20-24 = average score; 15-19 = slightly below average in life satisfaction; 10-14 = dissatisfied; 5-9 = extremely dissatisfied.

Reliability:

Diener et al. (1985) reported a two month test–retest correlation coefficient of 0.82 and an alpha coefficient of 0.87 for a sample of 176 undergraduates from the University of
Illinois. Pavot et al. (1991) obtained an alpha coefficient of 0.83 in a sample of 139 elderly individuals.

Validity:

The original validation studies correlated the SWLS with ten other measures of subjective well being. Most measures correlated at an $r = .50$ or higher for each of the two samples from the original work.

The SWLS has also been found to change in the expected directions in response to major life events, such as elderly caregivers who had a spouse diagnosed with primary degenerative dementia (Vitaliano et al, 1991), and patients receiving psychotherapy (Friedman reported in Pavot & Diener, 1993).

Selection of the Tool:

This scale is widely used all over the world and literature shows that it has been used in the Indian context a number of times (Ghose, 2012; Biswas-Diener, 2001). It has also been used in study of old age.

**Groningen Activity Restriction Scale (GARS): (Appendix IV)**

GAR is a strong unidimensional, hierarchical scale. It consists of 18 items and 4 response categories. The items refer to what respondents are able to do and not to their actual performance. “When an item refers to more than one activity (e.g. item 5), the activity causing the greatest problems to the patient determines the response.”

Factor analysis and Mokken Analysis:

Presence of one strong and reliable general factor representing one underlying dimension of disability in ADL and IADL was reported, and there was a clear hierarchical
ordering of the items included in the GARS indicating that it is a reliable instrument. Results of Mokken analysis indicated that all the $Hi$'s are greater than or equal to .40; the reliability coefficient rho is .94. The H coefficient of .47 indicates that it is strong scale (Suurmeijer, et al, 1994).

**Validity:**

GARS was found to be a valid scale with correlation ranging from 0.25 to 0.78 with several other instruments measuring physical problems and subjective health (e.g. Physical Mobility subscale from the Nottingham Health Profile, Karnofsky Performance Status Scale, Somatic Symptoms subscale from the General Health Questionnaire (Suurmeijer, et al, 1994).

**Selection of the Tool:**

This scale is widely used all over the world and literature shows that it has been used a number of times (Metzelthin et al, 2013). It has also been used in Indian context (Anil, Prasad and Puttaswamy, 2016).

**Engagement with Life Scale (LET): (Appendix V)**

The LET consists of six items, three items framed in a positive direction (Items 2, 4, and 6) and three items framed in a negative direction. LET measures purpose in life, defined in terms of “the extent to which a person engages in activities that are personally valued.”

**Factor Structure**

Exploratory factor analysis revealed a one-factor solution for all samples, which accounted for between 43% and 62% of the variance among the items. Factor loadings for all of the items ranged from .57 to .86, averaging .71.
**Internal Consistency**

Cronbach’s alphas in all cases, ranging between .72 and .87, averaging .80.

**Test-Retest Reliability**

The test-retest correlations ranged from .61 to .76, indicating that the scale is moderately stable, at least over the period of several months.

**Validity**

The correlation between the LET and the Purpose in Life Scale was .73 indicating high Discriminant Predictive Validity. Convergent validity ranged from very low to moderate level.

**Selection of the Tool:**

This instrument is selected on the basis of the fact that it measures purpose in life to the extent one engages in daily activities. Though it is a new scale, the items of this scale has been rated by five raters in order to check the applicability of the items in the present context.

**Tools for assessing Psycho-social Factors:**

**Three Dimensional Wisdom Scale (TDWS): (Appendix VI)**

The Three dimensional wisdom scale was developed by Monika Ardelt in 2003 on a sample of 180 elderly adults. The scale consists of three dimensions: cognitive, affective and reflective. It consists of 14 items for the cognitive, 12 for the reflective, and 13 for the affective component of wisdom. It was found to be a reliable and valid instrument and a promising measure of the latent variable wisdom in large, standardized surveys of older populations.
**Internal Reliability**

Cronbach’s alpha for the cognitive, reflective, and affective dimensions of the 3D-WS ranges from .71 to .85 (and hence this scale has high internal reliability of the three dimensions of wisdom.

**Construct Validity And Internal Reliability**

The cognitive, reflective, and affective dimensions of the 3D-WS are significantly correlated with each other and range from .30 to .50. Moreover, the skewness and kurtosis of the individual dimensions are all in acceptable ranges.

Results of confirmatory factor analysis show that the factor loadings of the cognitive, reflective, and affective effect indicators of the 3D-WS are statistically significant, with standardized values ranging from .50 to .84. The measurement models of the 3D-WS at time 1 and time 2 fit the data well with 1 degree of freedom (df) and a Satorra-Bentler scaled $\chi^2$, which is adjusted for non-normality, of .14 (p= .71) at time 1 and 1.98 (p= .16) at time 2. The overall fit indices are all very high, indicating a good model fit.

The reflective dimension of wisdom tends to have the highest factor loading. The factor loadings of the cognitive and affective dimensions of the 3D-WS were restricted to be equal in this and the following analyses because there is no theoretical reason for one loading to be higher than the other. In fact, comparisons of hierarchical models with and without this equality restriction resulted in nonsignificant $\chi^2$ increases in all cases. An additional advantage of this procedure is that it standardizes the 3D-WS to some degree across the different analyses.
Predictive Validity:

The scale was found to be correlated positively with general well being, mastery, purpose in life, subjective health and reversely correlated with depressive feelings, feelings of economic pressure, death avoidance and fear of death.

Test Retest Reliability

The factor loadings of the scale at the beginning of the study did not differ with that after 10 months showing that the test results are reliable over time.

Selection of the Tool:

This scale is widely used all over the world and literature shows that it has been used in the Indian context a number of times(). It has also been used in study of old age().

**General Self-Efficacy Scale (GSE): (Appendix VII)**

Matthias Jerusalem and Ralf Schwarzer developed GSES in German language in 1979. It has been revised and adapted to 33 languages currently.

Purpose

The General Self-Efficacy Scale is a 10-item psychometric scale that is designed to assess optimistic self-beliefs to cope with a variety of difficult demands in life. The scale was developed to assess a general sense of perceived self-efficacy with the view to predict the ability to cope with daily hassles as well as the ability to adapt after experiencing all kinds of stressful life events.
Population

The scale was developed for the general adult population, including adolescents. But it is not meant for individuals below 12 years of age. The scale can be applied, for example, to patients before and after surgery to assess changes in quality of life. Also, it can be used in patients with chronic pain or those within a rehabilitation program.

Administration

It is a self-administered scale. It requires 4 minutes on average.

Scoring: Responses are made on a 4-point scale. Sum up the responses to all 10 items to yield the final composite score with a range from 10 to 40. No recoding is required.

Reliability

In samples from 23 nations, Cronbach’s alphas ranged from .76 to .90, with the majority in the high .80s. The scale is unidimensional.

Validity

Criterion-related validity is documented in numerous correlation studies where positive coefficients were found with favorable emotions, dispositional optimism, and work satisfaction. Negative coefficients were found with depression, anxiety, stress, burnout, and health complaints. In studies with cardiac patients, their recovery over a half-year time period could be predicted by pre-surgery self-efficacy.
Selection of the Tool:

This scale is widely used all over the world and literature shows that it has been used in the present socio-cultural scenario (Chakrabarty, 2013).

*Heartland Forgiveness Scale (HFS): (Appendix VIII)*

Heartland Forgiveness Scale was developed by Laura Y. Thompson and C. R. Snyder in 1998. The Heartland Forgiveness Scale (HFS) is an 18-item, self-report questionnaire designed to assess a person’s dispositional forgiveness (i.e., one’s general tendency to be forgiving), rather than forgiveness of a particular event or person. The HFS consists of items that reflect a person’s tendency to forgive him or herself, other people, and situations that are beyond anyone’s control (e.g., a natural disaster).

**Scoring:**

Total HFS score on the Total HFS indicates how forgiving a person tends to be of oneself, other people, and uncontrollable situations. Higher scores indicate higher levels of forgiveness, and lower scores indicate lower levels of forgiveness. A score of 18 to 54 on the Total HFS indicates that one is usually unforgiving of oneself, others, and uncontrollable situations.

**Psychometric properties:**

The Heartland Forgiveness Scale (HFS), a self-report measure of dispositional forgiveness (with subscales to assess forgiveness of self, others, and situations) was developed and demonstrated good psychometric properties. Forgiveness correlated positively with cognitive flexibility, positive affect, and distraction; it correlated negatively with rumination, vengeance, and hostility. Forgiveness predicted four components of
psychological well-being (anger, anxiety, depression, and satisfaction with life); forgiveness of situations accounted for unique variance in these components of psychological well-being. Forgiveness and hostility demonstrated equivalent, inverse associations with relationship duration, and forgiveness accounted for unique variance in relationship satisfaction, even when controlling for trust. Forgiveness level correlated positively with decreased negativity in statements written about transgressions in the present versus the past tense.

**Selection of the Tool:**

This scale is widely used all over the world and literature shows that it has been used in the Indian context a number of times (Pareek and Jain, 2012; Mudgal and Tiwari, 2015).

**Gratitude Questionnaire -6: (Appendix IX)**

The Gratitude Questionnaire-6 is a six-item self-report questionnaire designed to assess individual differences experience of gratitude in daily life. It was developed by McCullough, Emmons, and Tsang in. Items reflected the gratitude intensity facet (e.g., “I feel thankful for what I have received in life”), the gratitude frequency facet (e.g., “Long amounts of time can go by before I feel grateful to something or someone”), the gratitude span facet (e.g. “I sometimes feel grateful for the smallest things”), and the gratitude density facet (e.g., “I am grateful to a wide variety of people”).

**Inter Item Consistency**

Cronbach’s alpha estimates for the six-item totals have ranged from .76 to .84 (McCullough, Emmons, & Tsang, 2002).
Correlation with Other Measures of the Same Construct:

In a study by McCullough, Emmons, & Tsang (2002) found that GQ-6 correlated at \( r = .65 \) \( p < .001 \) with three a self-report measure that instructed participants to indicate how well each of three gratitude related words (i.e., grateful, thankful, appreciative) described them. GQ-6 also correlated with peers’ ratings of targets’ amounts of dispositional gratitude at \( r = .33 \), \( p < .01 \). McCullough, Tsang, and Emmons (2002) also correlated scores on the GQ-6 with the typical amount of gratitude that people experienced in daily life at Effect size correlations in two studies were \( r = .37 \) and \( .49 \), respectively, \( ps < .01 \) in two related studies.

Other Correlates of Scores on the GQ-6:

Correlations with these positive affective variables typically range from .30 to .50 (McCullough, Emmons, & Tsang, 2002). Correlations with measures of negative affective traits such as negative affectivity, depression, and anxiety typically are negative, but rarely are larger than |.40|(McCullough et al., 2002). Measures of the “Big Five” personality dimensions typically account for 20-30% of the variance in GQ-6 scores. McCullough, Emmons, and Tsang (2002) reported that Extraversion, Agreeableness, and Neuroticism predicted unique variance in GQ-6 scores. Even after controlling for these “higher-order” personality traits, scores on the GQ-6 typically maintain their associations with other variables. It also shows impressive correlations with prosocial traits, spiritual and religious traits and social desirability.

Selection of the Tool:

This scale is widely used all over the world and literature shows that it has been used in the Indian context a few times(Khan and Singh, 2013; Kirmani, 2015).
WHOQOLBREF: (Appendix X)

The WHOQOL-BREF is being developed as a short version of the WHOQOL-100 for use in situations where time is restricted, where respondent burden must be minimised and where facet-level detail is unnecessary e.g. with large epidemiological surveys and some clinical trials. Based on WHOQOL field trials the WHOQOL-BREF was developed in the context of four domains of QOL: physical, psychological, social and environment.

Purpose

WHOQOLBREF is a 26 item questionnaire which purports to measure quality of life. WHO defines QOL as ‘an individual’s perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns’. In measuring QOL therefore, the WHOQOL Group is of opinion that ‘it is important to know how satisfied or bothered people are by important aspects of their life, and this interpretation will be a highly individual matter.’

Internal Consistency

Cronbach alpha values for each of the four domain scores ranged from .66 (for domain 3) to .84 (for domain 1), demonstrating good internal consistency (see Table 5.3).

Discriminant Validity

The WHOQOL-BREF was shown to be comparable to the WHOQOL-100 in discriminating between groups with illness and without illness. Significant differences between ill and well subjects apparent in all of the domains.
The descriptions of the scales used in the present study shows that these scales are claimed to have acceptable psychometric properties. They are valid and reliable and have been used in variety of populations. Short Test of Mental Status, though sometimes used clinically, lacks documentation of use in the population under study. So this scale has been validated on a sub-section of the present sample. The requirement to use this particular scale is given in the next section of this chapter.

Selection of the Tool:

This scale is widely used all over the world and literature shows that it has been used in the Indian context a number of times (Skevinkton, 2004; Sathvik, 2008). It has also been used in study of old age.

3.9 Procedure:

The present study has been carried out in two phases. Details of the study are enumerated below:

Pilot study:

The present study on the community living elderly people living in the city of Kolkata was carried out in a period of spanning over 4 years. Before the present study was initiated a brief study was carried out on a sample of 40 elderly citizens living in the city of Kolkata. The pilot study was carried out on elderly people belonging to the age group of 60 and 80 years. All the scales listed here were administered. During the test administration phase it was evident that the responses to the Presumptive Stressful Life Event Scale yielded no meaningful result in this group. So this scale was rejected for the present study. Instead an
item querying the presence of any significant life event in past one year was included in the socio-demographic schedule.

In line with the existing literature, it was found during the pilot study that geriatric depression remains vastly undetected in the community living elderly; sometimes psychotic disorders also remain undiagnosed as erratic behaviours in the elderly people are often mistaken for age related decline. As the study purports to investigate the relation and impact of values & virtues on mental aging, a decision to screen out psychiatric disorders through detailed interview prior to the test administration was taken. As the study group deals with an age group in whom decline in cognitive function is natural, a cognitive screening measure was used to detect presence of undetected cognitive impairment. Mini Mental Status Examination was initially used for screening but it was found that as the study group consisted of educated middle class elderly people MMSE was not found to be adequately sensitive to presence of cognitive impairment at mild level.

As it was found during the pilot study that in many organizations retirement age was 65 years and as a large percentage of individuals after age of 75 years were detected to have cognitive impairment (using STMS) the age group of the present study was decided to be 65-75 years. As old age is a time of life when physical health deteriorates and many medical complications develop, the present study decided to exclude all the life threatening illnesses and medical complications that could create shadow over their positive thinking that restrict mobility and self care ability of the community living elderly people. But some chronic illnesses commonly found in old age were retained. As the study is essentially psychosocial in nature and as different findings suggest that old age is a time of heterogeneity (Grisby, 1996), an attempt to minimize the effect of cognitive deterioration have been made.
through use of cognitive screening method. On the basis of the pilot study inclusion and exclusion criteria were selected and final set of tools for the present study was decided.

**Principal Study:**

Elderly people living in different parts of Kolkata and adjoining areas were contacted through different contacts (e.g. local clubs, associations, housing complexes, personal references). Those meeting the exclusion and inclusion criteria were approached. Verbal consent from the participant and his family was taken over the telephone. Those who consented were approached for the screening interview. Socio-demographic schedule was administered. At next level, presence of major psychiatric disorders was ruled out. At the next level cognitive impairment was ruled out using STMS. On the basis of this 238 individuals were approached 219 individuals completed the assessment while 19 individuals discontinued halfway through the interview. Out of 219 completed forms 206 data were accepted while 13 data were rejected. 11 data were rejected as these participants in spite of having no cognitive impairment (using STMS) found it difficult to comprehend the items of the tests meaningfully. 2 data were rejected as the participants were suspected to have cancer (awaiting final diagnosis). The interview took to 1 1/2 to 2 hours to be completed. All the items were read out to the participants and their responses were noted down. The obtained was scored according to the standard method and subjected to statistical analysis.

**3.10. Statistical Analysis:**

The obtained data was analyzed following appropriate statistical techniques. Software SPSS 21 was used for computation of statistics.

Descriptive statistics (Mean and Standard Deviation) were computed for the two groups: male and female elderly people living in the city of Kolkata. ‘t’ test was calculated to find
out the difference between the two groups. Pearson product moment correlation was computed to find out the association between the measures of successful aging and psycho-social factors. Stepwise Multiple Regression Analysis was computed to find out the impact of psycho-social factors on measures of successful aging. The results will be narrated accordingly in the following chapter.