Chapter 5 – Discussion -- Quantitative analysis

Overview: The present chapter depicts the analysis of data collected with the help of standardized questionnaires and checklists prepared by the researcher.

The study was conducted to find whether generativity, resilience and mindfulness have effect on physical health and subjective wellbeing among young elderly. It also aimed to examine whether nutrition, exercise and spiritual practices have mediating effect onthe relationship of generativity, resilience and mindfulness and physical health and subjective wellbeing among young elderly. In the context of socio-demographic factor such as place of stay, physical health and the subjective wellbeing of 103 institutionalized and 349 non- institutionalized young elderly between 60 -75 years and 60-70 years, respectively from Mumbai and Pune Metropolitan Regions were studied. Generativity, resilience, mindfulness, subjective wellbeing, and physical fitness parameters were measured with the help of standardized tools.

5.1 Discussion of Findings From Hypotheses Testing

The data collected was subject to various statistical analysis like Pearson product-moment correlation, multiple regression, hierarchical regression, independent group t test, one-way ANOVA and Chi Square test, which is given in the previous section. The findings are discussed below.

5.1.1 Relationship Between Psychological Variables and Physical Health Parameters

The **H1** hypothesized that there will be a significant positive correlation among generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters i.e., sensory/systemic parameters and lifestyle habits among young elderly. The findings indicate significant positive relation among all psychological variables such as generativity, mindfulness, resilience, and subjective wellbeing. However, sensory/systemic parameters of physical health are significantly related to mindfulness, resilience, and subjective wellbeing but not with generativity. The lifestyle habits are not found to be related with any psychological variables and even with sensory/systemic parameters of physical health of young elderly. Thus, the H1 is partially supported by the findings in the present research.

In the present study, wellbeing is operationally defined as experiencing life satisfaction, more of positive emotions and less negative emotions. Generativity refers to adding something to younger

generation. The current findings correspond to the research done by Wethington (2000) which found that generativity helps older adults regain social identity and the sense of purpose in life and being needed and valued by others. This in turn, enables them to utilise their physical and psychosocial resources optimally and experience 'feel good factor' within themselves, which leads to increase in overall life satisfaction. In addition, it also reduces rate of mortality among the elderly (Gottlieb and Gillespie,2008; Midlarsky et al,2014; Gruenewald et al,2009). Generative actions are related to avoiding the experience of negative emotions and motivating the experience of positive emotions (Bejalkebring et al,2016). Generative behaviour adds 'meaning in life' which is a sign of healthy ageing (Hofer et al,2008). Older adults automatically generalise similar behaviour towards other younger generation in the society, particularly when they are acknowledged for such behaviour by the close family (Thoits & Hewitt,2001; Cheng et al,2008; Cheng,2009). Generativity is beneficial to the elderly at individual level, enhancing their wellbeing.

Brown and Ryan (2004) and Brown et al (2007) could find several benefits of mindfulness such as good physical health, enhanced relationships, and psychological wellbeing. Social dimension of mindfulness evolves during the late adulthood and involves the older adults to engage in challenging activities, which are useful for others and give meaning to one's life (Nilsson et al.,2015). Meditation is effective in enhancing compassion and empathy, which also lays foundation of helping behaviour (Kreplin et al.,2018). Generative contributions lead to wellbeing through resilience among older adults, particularly when they have experienced discrimination in any form in the life (Bower et al., 2021). Barnes et al (2007) found that mindfulness enhances the capacity to respond constructively in the relationship stress in individual's life.

Sensory / systemic parameters of physical health are associated with resilience, mindfulness, and subjective wellbeing of young elderly. However, physical health parameters such as lifestyle habits of young elderly are neither found to be related with sensory / systemic parameters of physical health nor any psychological variables. In the present study, respiratory problems, bowel functioning, and the problems related to vision and hearing are the Systemic / Sensory parameters of physical health of older adults. Respiratory muscle strength and functionality reduce with age. The past studies show that, more than medication, and various alternate therapies such as meditation, exercise and dance therapy are effective in controlling the age-related systemic changes (Kattenstroth et al.,2013).

Substantial number of older adults show age –related digestive symptoms such as irregular or painful bowel movements, constipation which disturb daily activities, and quality of life and may eventually affect physical health (Conway,2012) and social life of older adults (O'keefe et al.,1995; Munch et al.,2016). Other than dietary habits, lack of exercise, psychological factors like anxiety, stress or even fear of bowel functioning cause disturbances such as irritable bowel syndrome. Therefore, stress reduction is one of the effective measures suggested to manage the IBS(Kernisan,2018) and mindfulness meditation is considered to be one of the techniques of stress reduction.

Stress can cause sensory impairments such as hypoxia, retinal impairment, partial and selective blindness affecting the health and quality of life in older adults. Therefore, taking care of mental health and avoiding negative impact of inevitable stress through relaxation techniques such as mindfulness is strongly suggested (Sandoiu,2018; Brown et al.,2015 & Sabel et al., 2018). Hearing impairments are also responsible for social withdrawal, dependency and restricted mobility affecting the poor quality of life among elderly (Ciorba et al.,2012; Dalton et al.,2003). Sensory-neural hearing loss is normally age-related. Tinnitus is a common hearing problem induced by stress across the age. Thus, stress management is necessary to control the effects of sensory impairment in elderly's life.

The findings in the above research indicate significant relationship between mindfulness and systemic / sensory parameters of physical health in older adults. However, lifestyle habits are not found to be associated with any psychological variables or sensory/systemic parameters of health. In a neuropharmacological study, Brewer (2019) claims that when smoking or drinking is induced by stress, then changing the habit loop with the help of mindfulness technique works well. Mindfulness makes the individual aware of immediate effects of smoking / drinking such as 'burning feeling' while inhalation / consumption which allows to break the habit loop in the individual (Brewer et al.,2011; Li et al.,2017).

The past research is well supported by the present findings, which show how sensory / systemic functioning is regulated by mindfulness and results into wellbeing in later years of life. Generativity is beneficial to the elderly at individual level, enhancing his wellbeing.

The H1 is partially supported by the present research, as significant correlation is found among all psychological variables. Sensory / systemic parameters are found positively related with all the

psychological variables except generativity. Lifestyle habits are not correlated with any other variable.

5.1.2 Difference in Psychological Variables due to Physical Health Parameters

The **H2** stated that young elderly high on chronic medical condition, ONR biomarkers and low on physical fitness parameters will significantly differ from elderly who score low on chronic medical condition and WNR biomarkers and high on physical fitness parameters across generativity, mindfulness, resilience, and subjective wellbeing. The H2 is partially supported by the results, particularly in case of biomarkers.

The findings indicate that presence of any chronic medical condition in the elderly significantly influences resilience, mindfulness, and subjective wellbeing but not generativity. Certain studies do show that uncertainty arising out of chronic illness affects the individual in later years, with respect to generativity (Hannum, 2017). However, there are research which show that suffering from chronic illnesses may not necessarily affect the generativity, at the most, it might change its expression (Bellizzi,2004).

Optimization of physical health outcomes on a preventive and curative level because of mindfulness practice is suggested by (Epstein,1999; Kabat-Zinn,2014; Brown& Ryan,2003). The studies show beneficial effects of mindfulness in individual suffering from any illness, in terms of pain reduction, sound sleep and overall wellbeing (Moroneet al.,2008). Such studies are sufficient to support the findings in the present research.

Hassani et al. (2017) suggests the need of interventions to increase resilience considering unique needs of the patients suffering from chronic illness, which show the difference in resilience among the older adults with / without any chronic illness supporting the findings in the present research.

The results above indicate that elderly having WNR biomarkers significantly differ in subjective wellbeing and not in generativity, resilience, and mindfulness. Neurological and physical functioning is highly affected by the adequate level of electrolytes, specific hormones, and glucose level; as their imbalance leads to different symptoms such as fatigue, excessive weakness, probably, leading to dependence, which affects daily life. The chronic illnesses like cardiac disease, kidney malfunctioning are the possible outcomes of imbalanced biomarkers, which can largely affect health and wellbeing (Balci et al.,2013).

The findings in the research illustrate role of physical fitness in all psychological variables. Physically fit elderly are significantly more generative, resilient, mindful and experience greater subjective wellbeing. In the present research, physical fitness parameters are operationally defined as flexibility, agility, balance, speed of work and aerobic and muscular endurance among the older adults. The findings indicate that elderly who are physically fit are significantly more generative, resilient, mindful and perceive greater wellbeing, suggesting a need to design intervention to improve the physical fitness among the older adults. Physical activity resulting into physical fitness has a significant impact on prosocial behaviour among adolescents (Wan et al.,2021), on perceived wellbeing in older adults (An et al.,2020). However, mixed physical health outcomes in terms of generative behaviour were found by (Schramm,1998; Pate et al.,2012) as it can be affected by demographic and personal variables such age and BMI. Physical fitness promotes resilience as fitness achieved through exercise induces positive physiologic benefits and protects oneself from stress and leads to overall wellbeing (Deuster,2013; Hilgenkamp,2012). Physical fitness and absence of any chronic medical condition play a significant role in generativity, resilience, mindfulness, and perception of wellbeing in later years of life.

The findings with respect to H2 show that chronic medical conditions and low physical fitness parameters in the young elderly do make a difference in mindfulness, resilience, and subjective well-being, with generativity being largely unaffected. Biomarkers do not make any significant difference, except on subjective wellbeing.

5.1.3 Prediction of Physical Health and Subjective Wellbeing by Generativity, Mindfulness, Resilience

The **H3** stated generativity, mindfulness, resilience will significantly affect physical health parameters i.e., sensory/systemic parameters and lifestyle habits and subjective wellbeing of young elderly. The findings in the present research completely support the H3. Generativity, resilience, and mindfulness together are significantly predicting physical health parameters i.e., sensory/systemic parameters and lifestyle habits and perceived wellbeing among elderly.

In case of sensory/systemic parameters of physical health, resilience causes variance independently; the lifestyle habits are independently predicted by mindfulness and resilience, but not generativity. However, subjective wellbeing is significantly predicted by generativity,

mindfulness, resilience together; none the less, each one of them is an independent predictor as well.

Generativity is expressed in different forms in later years of life, all of which lead to perceived wellbeing. It could be grand parenting of one's own grandchildren or in relation, neighbourhood, which leads to satisfying experiences (Rothrauff & Cooney, 2008) or getting involved into voluntary community service, which enhances their functionality and sense of purpose in life. Social connectedness and social cohesion are other benefits of generativity, resulting into health and well-being (Morrow-Howell&Tang,2009). Wellbeing of the elderly is also in the form of engagement in charitable activities, which gives an experience of positive affect right from planning and witnessing the outcome of monetary donations (Bjalkebring et al.2016).

Resilience is a capacity to maintain or regain wellbeing during or post-adversity (Whitson et al.,2016). The past research suggests that older adults can consciously develop high resilience despite the demographic factors such as socioeconomic background or poor health and benefit themselves with lowered depression, longevity, and successful ageing (MacLeod et al.,2016). It has been reported that among the community-dwellers, resilience has promising effects on building health and wellbeing in later years of life (Lau et al., 2018).

Mindfulness is a central element in health and human services. Perceived wellbeing is enhanced through therapeutic recreation exercise of mindfulness meditation technique. It helps the individual to live more creative and meaningful life by reducing unnecessary suffering and enhanced emotional regulation (Seligman et al.,2004; Carruthers & Hood,2011). Mindfulness is effective in nurturing one's mental health and thus, enhance wellbeing (Rybak,2013). In case of older adults facing adversity in terms of natural disasters, mindfulness helps in developing adequate psychological resources, coping styles and maintain wellbeing (Aliche & Onyishi, 2019).Mindfulness shows magical effects in rehabilitative therapy in the form of cognitive and affective benefits, significantly preventing the decline in attentional control due to ageing(Fountain-Zaragoza & Prakash,2017),improves visuospatial attention restraining allied age-related cognitive impairment and promotes wellbeing leading to healthy ageing(Malinowski et al., 2017). The findings show generativity, resilience and mindfulness significantly predict perceived wellbeing of elderly.

Although the results show generativity, resilience and mindfulness together cause variance; resilience independently predicts sensory/systemic parameters of physical health and not generativity and mindfulness. Resilience is also described as successful adaptation to stressful experiences can help in managing stress-induced bowel dysfunctions (McLaughlin,2009; Chang,2014).

In the present research, the lifestyle habits are considered as consumption of gutka, supari, alcohol, habits like smoking, snuff. The findings indicate mindfulness and resilience independently predict physical health parameter such as lifestyle habits of the elderly. The past research has shown benefitting effect of mindfulness in controlling or reducing the lifestyle habits among the adolescents and adults, but not specifically in the older adults. The findings in the present research match the results (Goldstein et al.,2012) which stated internal resilience proving to be compensatory and protective factor in case of lifestyle habits such as alcohol consumption and smoking. An intervention to promote generativity, resilience, and mindfulness from early years of life would help to schematize healthy lifestyle across the age, which will promote healthy society.

5.1.4 Mediating Effect of Nutrition

The past research has shed light on the effect of nutrition on physical health and wellbeing in later years of life. The belief of the elderly about the importance of diet in one's health and happiness was measured on a five-point Likert scale (1=Strongly Disagree & 5 =Strongly Agree). The results showed high percentage of elderly strongly agreed to the importance of role of diet in their health and happiness. However, the belief was not supported by an actual intake of nutrition, which was measured through a checklist.

The discrepancy can be a result of the fact that:

i) The effect of nutrition on sensory/systemic parameters such as respiratory system / bowel functioning / visual functioning / hearing are not independently assessed with more standardised measurements.

ii) Particularly in case of institutionalised elderly, they do not have a control over their intake of food by themselves

iii) Financial unaffordability for a variety in diet

In the H4 a and H4 b, where mediating effect was tested on the sensory/systemic parameters of physical health and lifestyle habits, the results are not in the line of past research, however H4c has been accepted which shows mediating effect of nutrition on subjective wellbeing of the elderly

The **H4 a)** stated there will be a significant mediating effect of nutrition on relationship between generativity, mindfulness, resilience, and sensory/systemic parameters of physical health of young elderly. The findings do not validate the H4a. The prior studies prove important role of nutrition in health and wellbeing in later years of life through enhanced physical activity, metabolism and immunological defences, bowel functioning etc. (Mujcic & Oswald, 2016; Chambial et al.,2013; Bae,2014; Forootan,2018); adequate lung functioning due to proper respiratory functioning (Engelen,1994; Berthon & Wood,2015). Serotonergic agents are effective in the treatment of constipation, diarrhoea, and IBS(Camilleri,2009). However, the findings show nutrition does not add any variance in the relationship between generativity, resilience, mindfulness, and systemic/sensory parameters of physical health of young elderly.

H4 b) stated there will be a significant mediating effect of nutrition on relationship between generativity, mindfulness, resilience, and physical health parameters such as lifestyle habits of young elderly. The findings show nutrition does not add any variance in the relationship between generativity, resilience, mindfulness, and lifestyle habits of young elderly, i.e., H4b is not being supported by the above findings.

Although the lifestyle habits such as smoking is significantly associated with unhealthy diet causing respiratory dysfunction, chronic diseases, if not mortality (Heydari,2014; MacLean,2018). In the present study, the hypothesis was proven wrong, since nutrition did not display any mediating effect on the relationship between generativity, mindfulness & resilience on life-style habits of the young elderly.

The **H4 c)** stated there will be a significant mediating effect of nutrition on relationship between generativity, mindfulness, resilience, and subjective wellbeing of young elderly. The results prove the H4c, as they suggest nutrition plays a mediating role in the relationship between generativity, mindfulness, resilience, and subjective wellbeing in older adults.

Serotonin-rich diet not only maintains physiological balance but contribute to health and wellbeing through well-coordinated number of activities, managing cortisol level and enhanced neurocognitive functioning. It is effective in the treatment of depression and suicidal ideation;

indirectly proving its role in wellbeing (Young,2007, Delamonthe,2005). The diet rich in Tryptophan, contributes to positive emotions and thus it is considered to be therapeutic in nature (Jenkins et al 2016; Scaccia,2017). Importance of nutrition is significantly noticed at cognitive level but not at behavioural level among the elderly.

The hypothesis was supported as nutrition shows a significant mediating role in the relationship between generativity, mindfulness, resilience, and subjective wellbeing in older adults.

5.1.5 Mediating Effect of Exercise

The belief of the elderly in the importance of exercise in their health and happiness was measured on a five-point Likert scale (1=Strongly Disagree & 5 =Strongly Agree). The results showed that, high percentage of elderly strongly agreed to the importance of role of exercise in their health and happiness. However, the belief was not supported by the regularity in practicing, which was measured through a checklist, resulting into no mediating effect on sensory/systemic parameters of physical health. None the less, exercise shows marginal effect on the lifestyle habits, although significant effect is seen on the subjective wellbeing of the elderly.

In Indian context, various demographic factors such as gender, geographical location, socio economic status, educational status, social norms, and individual autonomy challenge the health behaviour in individual (Worthington & Gogne,2011). In the context of collectivist culture, social norms do not allow individual to prioritise individual needs, it does not encourage health-promotion behaviour, such as exercise (Kawabata,2013). Due to scarcely available safe and affordable health-promotion programmes as well as the places to remain physically active, older adults are vulnerable to get influenced by the cultural values (NHP,2018).

The **H5. a)** There will be a significant mediating effect of exercise on relationship between generativity, mindfulness, resilience, and sensory/systemic parameters of physical health of young elderly. The findings do not validate H5a, as exercise does not add any variance in the relationship between generativity, resilience, mindfulness, and systemic/sensory parameters of physical health of young elderly. Exercise shows beneficial effects on the functioning of respiratory system by a significant increase in oxygen consumption and pulmonary function help to accumulate the health benefits in later years of life (Cress et al.,1999; Roman,2016). Bowel movements control constipation, the most common problem of the elderly, directly affect physical activity, social engagement and thus, wellbeing of the individual (Erlandson,2021).

Exercise is an effective measure to promote physical health through sensory / systemic functioning.

The **H5. b)** stated there will be a significant mediating effect of exercise on relationship between generativity, mindfulness, resilience, and physical health parameters such as lifestyle habits of young elderly. Although the past literature shows promising results of physical exercise on different habits such as smoking or alcoholism in adolescents and youth and not specifically in older adults (Sergio,2019; Ozaki,2019). Sedentary lifestyle is found to be inversely related to physical fitness among older adults (Kim &Lee, 2009).

The present research findings are not in the line of H5b and the above studies.

The **H5 c)** mentioned there will be a significant mediating effect of exercise on relationship between generativity, mindfulness, resilience, and subjective wellbeing of young elderly. The findings in the current research support the H5c, as exercise independently adds 2% variance in this relationship. Exercise acts as an effective stress coping mechanism, reducing anxiety, depression (Fox,1999). It also works effectively to promote wellbeing by enhancing self-esteem, cognition and overall functional capacity, quality of life and thus, wellbeing across the age (Penedo &Dahn,2000; Khazaee-Pool et al.,2015; Gopinath et al.,2018). Rajelski and Mihalco (2001) found positive effect of physical activity on the quality of life among elderly, however perception towards the activity plays a significant mediating role.

The past research as well as findings of the current research confirm that promotion of exercise as a part of daily routine from early years of life will accelerate healthy ageing.

5.1.6 Mediating Effect of Spirituality

On a five-point Likert scale (1=Strongly Disagree & 5 =Strongly Agree), belief of the elderly about importance of spiritual practices in their health and happiness was measured. The results in the present research showed approximately forty percent elderly strongly believed that spiritual practices are important in their health; and forty five percent believed to be important in their happiness. The belief was verified by the regularity of spiritual practices which was measured through a checklist. The results show no mediating effect on the sensory/systemic parameters, lifestyle habits and subjective wellbeing of the elderly.

The **H6 a)** stated there will be a significant mediating effect of spiritual practices on relationship between generativity, mindfulness, resilience, and sensory/systemic parameters of physical health of young elderly. The findings in the present research show engagement in spiritual practices does not cause any added variance in the physical health sensory/systemic parameters of physical health; thus, do not validate H6a. On the contrary, earlier studies have shown that spirituality is subjective experience with no boundaries of caste, class, or religion. It is proved to have a therapeutic implication, specifically for chronic diseases and mental health issues across the age, particularly in later years of life. Spiritual engagement helps in strengthening immune and endocrine functioning is an important health-related benefit (Koenig,2012). Prayer, as a spiritual practice is effective in reducing blood pressure, heart rate and respiratory rate in patients who suffer from chronic kidney disease (Brasileiro,2017).

In contrast to the earlier studies done in the Indian context, in the sample of present research, spirituality does not show any significant impact on their health.

H6b) stated there will be a significant mediating effect of spiritual practices on relationship between generativity, mindfulness, resilience, and lifestyle habits of young elderly. The past literature in the field has found benefitting effects of spiritual engagement in the management of certain lifestyle habits. Spiritual engagement plays a crucial role in restraining the person from alcohol (Bluma,2018). Spiritual wellbeing attained by involvement in spiritual practices acts significantly in alcohol prevention in the college students (Von Dras et al.,2007). The H6b supported by the results, although mediating effect on relationship between generativity, mindfulness, resilience, and lifestyle habits of young elderly is not significant.

H6 c) stated there will be a significant mediating effect of spiritual practices on relationship between generativity, mindfulness, resilience, and subjective wellbeing of young elderly. Spirituality indeed plays a central role in the wellbeing of older adults especially in the Indian context. The past literature shows that older adults who score high on spirituality tend to experience wellness and transcendence (Pandya, 2016). Regular prayer helps to develop control over thoughts by attaining purpose in life and accept it with calmness (Inbadas,2017; Harris et al.2005). The results show spiritual engagement adding to the variance, enhancing the relationship between generativity, mindfulness, resilience, and subjective wellbeing of young elderly in the present study, which validates the H6c.

In the Indian context, spiritual needs need to be addressed and nurtured to promote health and wellbeing in a more holistic manner.

5.1.7 Difference in Psychological Variables and Physical Health Parameters due to Regularity in Pursuing Hobbies

The **H 7** stated there will not be any significant difference in generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters between young elderly who pursue hobbies and those who do not pursue hobbies. The results in the study partially reject the H7, as there is a significant difference in the elderly who pursue hobbies and those who do not pursue across generativity, mindfulness, resilience, subjective wellbeing, and biomarkers of physical health. Pursuing hobbies make the elderly more generative, mindful, and resilient; tend to feel happy and satisfied than their counterparts. Their WNR biomarkers indicate better physical health.

Hobbies in later years could be solitary activity or activity which involves others. An involvement in any creative activity plays significant mediating role in the relationship between generativity and life satisfaction among older adults. Creative hobbies which promote divergent thinking and self-expression, allow individual to reduce stress and enjoy the moment (Adams-Price et al.,2017). In the institutionalized elderly, hobbies extend longevity by controlling age-related decline in daily activities and adding purpose in life (Tomioka et al.,2016). Such studies are the evidence of importance of hobbies in promoting wellbeing.

Pursuing a hobby involving any creative activity signals successful ageing. Participation in creative hobbies is an effective way to contribute to the society and their own development, despite any age-related disabilities (Adams-Price,2017). Such interdependence between elderly and the society promotes resilient successful ageing (Martinson & Berridge,2014). Involvement in a favorite hobby can get an individual into the present moment boosting his well-being. Pursuing a hobby is recommended by the National Institute for Health and Care Excellence for people who have experienced recurrent depression.

The concentration necessary to produce a work of art helps focus the mind, and drift away from the disturbing thoughts. The simple process of connecting body and mind is enough to produce a sense of wellbeing. Concentration on the task in hand and the hope of a pleasing end result significantly reduce stress and fatigue and boost self-esteem leading to well-being. Pursuance of creative hobby supports solitary functioning, enhances positive emotions, and helps to stay focused

on a given task (Bujacz,2015). Participation in any visual art performance as a hobby improves brain functioning which leads to wellbeing and healthy ageing (Noice et al. 2004). It has positive impact on cognitive and affective level and general sense of wellbeing (Patterson & Perlstein,2011).

There have been studies to show the impact of hobbies on biomarkers. A study by Thomas et al. (2004) reports that an engagement in hobbies in the form of physical activity benefits to control Type II diabetes through better management of stress.

In a significant finding of this study, it was proven that engaging in hobbies, made a significant difference to the young elderly in terms of generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters, such as biomarkers.

5.1.8 Difference in Psychological Variables and Physical Health Parameters due to Regularity in Social Engagement

The **H8** stated there will not be any significant difference in psychological and physical health parameters between the elderly engaged in social activities and their counterparts. The findings partially reject the H8. Social engagement makes significant difference in all the psychological parameters among young elderly. No physical health parameters are affected by social engagement in the present research, partially supporting H8. Elderly engaged into any formal / informal social activity such as attending meetings of some NGO or community, participating in kitty party / *bhishi* are found to be more generative, mindful, resilient and find happiness and satisfaction in life.

If the elderly volunteer, are consistent and conscious in social engagement, it is indeed a central component of wellness-illness and their quality of life. There are personal, social, and environmental attributes of social participation of the older adults with personal and environmental benefits, most importantly the successful ageing (Arroogh et al.,2020) Meaningful relationship is found between social participation and quality of life (Moradi et al.,2013).

Social participation could be in any form such as volunteering at informal gatherings with friends. It is beneficial for both, the elderly enjoy health and wellbeing and the society benefits in terms of high volume of psychological resources gathered throughout the life by this social capital (Flennert et al.,2019; Morrow-Howell et al., 2009).

Social engagement is an important cause of health and wellbeing across the cultures. A study on the Quebecois elderly population, benefits of social participation were seen at individual level and social level. Elderly who are actively engaged in social activities enjoy better health status than the elderly who do not actively participate. Such actively socially engaged elderly are found to be involved more in physical exercise and perceive the accessibility to important societal resources than the counterparts (Richard et al.,2009).

Social skills are enhanced with mindfulness and metacognition; positive association is found between mindfulness and social participation under stressful situations. Mindfulness enhances the quality of social relationships by increased openness to experience and acceptance of the situation, equanimity, and greater engagement in others' life (Izadabadi et al.,2020; Lindsay et al.,2019; Jijina & Biswas,2022).

The desire to participate in social activities, along with willingness to do exercise and self-confidence can make the older adults more resilient with bowel-related illness (Takahoshi, 2015). Resilience moderates the association between community belonging and social participation among institutionalized older adults; proving the significant impact of social participation and resilience on institutional belonging (Levasseur et al.,2016).

The effect of chronic medical condition on social participation of the elderly was studied by Meek et al. (2018); the findings of their study revealed restricted social participation among those suffering from Cancer. Similar effects were found in the intervention study on mindfulness and social engagement on the Chinese female adults suffering from breast cancer, where reduced engagement was a result of social stigma (Jiang et al.,2022).

The above-mentioned research show positive impact of social engagement on psychological variables as well as in health behaviour leading to health and wellbeing. However, the findings in the present study do not confirm the past research in case of physical health parameters.

5.1.9 Difference in Psychological Variables and Physical Health Parameters due to Place of Stay

The **H9** stated there will be significant difference between institutionalised and non-institutionalised young elderly across generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters. The findings of this research partially support the H9, as the

institutionalised and non-institutionalised young elderly significantly differ in all psychological variables and some physical health parameters such as lifestyle habits and biomarkers.

The non-institutionalised elderly are more generative, mindful, resilient, and thus perceive significantly higher wellbeing in life. However, institutionalised elderly are found to have significantly better physical health in terms of WNR biomarkers, or such lifestyle habits, which would lead to better health and wellbeing. Easy accessibility, with low external inhibitors and financial affordability could be the possible reasons for such lifestyle habits, which would affect the health of non-institutionalised elderly. The findings are supported by an Indian study, where the alcohol consumption is associated with socioeconomic status in older adults (Nadkarni et al.,2013).

Although the elderly living with the spouse and children do not necessarily share a healthy relationship with their children and find them dependable (Rajan & Kumar, 2003); when the elderly are forced to be institutionalised, they feel severely socially disconnected which affects their overall wellbeing (Sandhyarani & Rao,2014.)

In the context of collectivist cultures, living arrangements or a place of stay plays important role in the elderly's life. Usually, family is considered to be a major social support. According to the social exchange theory applied to ageing process, in case of older adults with restricted physical mobility, other than age and gender, contextual factors such as retirement, relocation, loss of spouse influence wellbeing. Changing a place of stay from a family to institution in later years of life influences social exchange, as it demands adaptation on multiple levels. Positive social exchange provides tangible/intangible support and protection from stress. Companionship, presence of a spouse, children and close friends is one such support which adds to the wellbeing in later years (Wan &Antonucci, 2016).

Further, in a longitudinal study on the institutionalized and noninstitutionalized adults, providing and receiving support affected positive affect of only the noninstitutionalized older adults (Kroemeke & Gruszczynska,2016). Mindfulness is found to be low in the elderly from old age homes than living with the family; and mindfulness training is proved to be effective in mitigating depression amongst them (Verma & Kumar,2019).

Older population is vulnerable to chronic illnesses, chronic respiratory problems and neurocognitive disorders like Alzheimer's disease leading to various psychological symptoms,

while moderate level of clinical depression and anxiety are also common in them (Yohannes et al., 2000; Geiger et al.,2016). Approximately ten percent of institutionalised older adults suffer from anxiety disorders, majorly Generalised Anxiety Disorder in later years of life (Beekman et al.,1998; Bryant et al.,2008). Mindfulness shows significant effect of lowering depression and anxiety (Moore, 2016; Geiger et al.,2016), alleviating loneliness and promoting life satisfaction and wellbeing among older adults (Pandya,2019).

More than 50% of the elderly sample from an old age home showed low level of resilience as against staying with the family (Britto et al.,2020). Resilience is an effective mediating variable in a study of effect of family life on the quality of life of the Chinese older adults, which indicates the role of living arrangement on the resilience of elderly (Lu et al.,2017). The type of family and the family members indeed have a role to play in building resilience in individual, across the life (Singh & Gupta, 2011). The findings of an explanatory study on Korean elderly revealed family support as a significant predictor of resilience other than monthly income and standard of living (Lee & Choi,2021).

Despite cultural differences, generative or prosocial behaviour, particularly in the post-retirement years is more frequent because of the possibility of time commitment (Gottlieb & Gillespie, 2008). High level of empathy and concern for others makes the elderly more generative. However, situational constraints among the institutionalised elderly can restrict the opportunities (Midlarsky et al.,2014). The findings in the current research are in the same line.

Unavailability to satisfy need of belongingness is likely to create a feeling of loneliness and result into the lifestyle habits such as smoking or drinking to regain social belonging (De Wall & Pond,2011), which is found in case of non-institutionalised elderly in the present study. It could be availability of an easy access to all these habits and / reflection of feeling of loneliness, despite staying with a family. However, no supporting studies were found to explain significant difference in the biomarkers among the institutionalised and non-institutionalised elderly.

The research findings show that non-institutionalised young elderly fare better in terms of psychological and the institutionalised elderly on the physical health parameters.

5.1.10 Difference in Psychological Variables and Physical Health Parameters due to Gender

The H10 stated there will not be any significant difference between young elderly male and female across generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters. The H10 is partially rejected by the findings of the present study because significant gender differences are seen in resilience, subjective wellbeing, and physical health parameters such as lifestyle habits and biomarkers. Elderly men are found to have WNR biomarkers, more mindful, resilient and tend to perceive wellbeing greater than elderly women. On the other hand, elderly women are found to be more generative, although the difference is not significant. They also show better health parameters such as lifestyle habits.

Various demographic factors such as age, gender, and physical activity significantly influence resilience among the older adults. Males are found to be more resilient and physical activity was a significant mediator variable (Martínez-Moreno et al.,2020). These findings support the present research. Although the culture shapes certain trends with reference to resilience and other behavioural characteristics, the results are in favour of male elderly (Fergus et al., 2020). When any trauma impacts on individual, familial and community level, in a study by Sambu & Mhongo (2019) on traumatised older adults, older males were found to be more resilient. They benefitted from the intervention strategies to overcome the traumatic experiences more than older females. However, contradictory findings are revealed by Lakomý et al. (2020), where the older women are more resilient, partly explaining the 'gender paradox'.

Women tend to live longer but with number of functional limitations, which affect many criteria of subjective wellbeing (Carmel,2019); reflecting in the self-reported health measures (Boerma,2016), weaker 'will to live' and less desire to prolong life by being dependent on medication as compared to men (Carmel,2001). Self-acceptance, autonomy, purpose in life, environmental mastery and more importantly self-esteem and social support are the precursors of subjective wellbeing which eventually promote successful ageing. Matud et al. (2020) found male elderly who scored significantly higher than the counterparts in the above-mentioned parameters.

Gender differences and perceived wellbeing are discussed ever since Wilson (1967) proposed that 'one's happiness is not related to sex'. However, the past research focuses on how the 'perceived / subjective wellbeing' is defined. When the perceived wellbeing comprises of positive affect,

negative affect, and life satisfaction, it is imperative to comment on the gender differences with respect to these three components separately. Positive emotions are seen among men significantly higher than women, attributing to difference in perceptions, understanding and experiencing the situations (Khawar & Muazzam,2018), women experiencing negative affect more than men (Thomsen et al.,2005). Marginal gender differences are found in subjective wellbeing (Shmotkin,1990) and life satisfaction (Ahmad &Silfiasari,2008).

There are gender differences in the glucose homeostasis such as impairment in glucose tolerance, vulnerability for Type I and Type II diabetes and sex hormones (Mauvais-Jarvis,2017). Overall, men are more prone to develop insulin resistance, hyperglycaemia than females, influencing predisposition to Type II diabetes (Tramunt et al.,2020). The findings in the present study support this research.

In India, among the elderly cohort, the rate of cigarette smoking and bidi smoking is found high in men with substantial increase in the tobacco consumption (Mishra et al.,2016). Alcohol use and dependence is way high among Indian men than women (9.1% : 0.5%) showing significant gender difference, supporting the findings in the present research (Statista Research Department, Oct16, 2020).

In line with the findings of the large body of past research, significant gender differences are observed in resilience, subjective wellbeing, and physical health parameters such as lifestyle habits and biomarkers in the present study.

5.1.11 Difference in Psychological Variables and Physical Health Parameters due to Type of Family

The H11 stated there will not be any significant difference between young elderly staying in different types of family across psychological and physical health parameters. The findings in the present study partially reject the H11. The type of family affects only subjective wellbeing and no other psychological or physical health parameter. Elderly living in the nuclear family tend to perceive more wellbeing than elderly living in joint family.

Indian society promotes interdependence and Indian family acts as a first defence for the children and the elderly. It nurtures emotional bonding and socialization amongst its members. In the Indian context, responsibility of caring for the elderly is primarily shouldered by the family

(Sonawat,2001). Hence, the elderly perceive the family as a primary social support. Despite a shift from extended family to nuclear one and the consequent changed relationships, needs and expectations from each other, the perception of emotional and social support allows the elderly to cope with stress effectively and live healthy, happy life (Shanas,1979; Cohen,2004). Elderly living in a family experience well-being and life satisfaction (Mc Auley et al.,2000; Patil et al, 2014).

Various studies show nuclear family structure is more vulnerable for the elderly to suffer from mental health issues such as anxiety, insecurity, and depression (Ramachandran,1981; Taqui et al.,2007). Paradoxically it is viewed that, nuclear/ single-generation family may provide value to the elderly, respect their identity, and allow them to maintain their role of a 'head of the family,' which results in their subjective wellbeing (Srivastava et al., 2021). These studies support the findings in the present research.

None of the psychological or physical health parameters, with the exception of subjective well-being are impacted by the type of family of the elderly, with those living in nuclear families experiencing a higher degree of wellbeing.

5.1.12 Difference in Psychological Variables and Physical Health Parameters such as Sensory/Systemic Parameters and Lifestyle Habits due to Educational Status

The **H12** stated there will not be any significant difference among the groups of elderly with their different educational status in their generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters i.e., sensory/systemic parameters and lifestyle habits.

The results indicate that psychological variables vary as per the educational status; but the elderly do not differ in any physical health parameter based on educational status. Thus, the findings partially reject the H12 of the research.

A uniform trend is observed across generativity, mindfulness, resilience, and subjective wellbeing, i.e., highly educated (Post-Graduate by qualification) elderly are more generative, mindful, resilient and tend to perceive wellbeing in life. Although not significant, these highly educated elderly have better systemic / sensory parameters of physical health. However, elderly with minimum education are observed to have better lifestyle habits.

Level of education has a positive influence on generative interest among young adults, eventually leading to life satisfaction (Muñoz-Rodríguez et al.,2019). However, Aker et al. (2019) observed

contradictory results i.e., highly educated Turkish men were observed to spend less time for voluntary work and helping behaviour; however, the same was not observed in Turkish women. High education and altruism are positively associated; with cognitive ability, self-control, and better socialisation (Westlake et al.,2019), which promotes generativity.

In the present research, based on the mean scores, elderly with higher educational qualification are found to be more mindful. The relationship between mindfulness and educational status is studied among the school children, which shows particularly 'act with awareness,' a dimension of mindfulness, plays important role in their educational progress (Valikhani and Sarafraz, 2015).

Bittman (2021) has revealed that resilient individuals are with better educational grades, with minimum chances of dropouts and are capable of choosing their own positive academic pathways leading to academic success and higher life satisfaction. Fergusson and Lynskey (1996) found resilience as a mediating factor in the relationship between IQ and academic scores of the children facing adversity in family life (Cassen et al., 2009).

The education-subjective wellbeing link was found to be positive but weak in a meta-analysis review by Tan et al. (2020). However, highly educated people are found to be happier and satisfied than less educated (Ndayambaje,2020; Chattu et al.,2020). Although to a small extent, but education contributes to subjective wellbeing across the age (Witter et al. 1984). The findings in the present research are supported by these studies. However, Bucker et al. (2018) found that low educational achievement does not necessarily lead to low subjective wellbeing.

Probably, education promotes thinking from self-to-others and take a multidimensional perspective towards challenging situations which make them more generative and resilient. They tend to keep realistic aspirations from themselves and others, which allow them to achieve the same.

5.1.13 Difference in Psychological Variables and Physical Health Parameters such as Sensory/Systemic Parameters and Lifestyle Habits due to Socio-Economic Status

The **H13** stated there will not be any significant difference in the psychological and physical health parameters i.e., sensory/systemic parameters and lifestyle habits among elderly with their different socio-economic status. The findings largely reject the hypothesis since significant difference is

found in all psychological variables and a physical health parameter i.e., lifestyle habits among the elderly.

The elderly from high income groups are found to be more generative, mindful and perceive greater wellbeing in life than the elderly from other socioeconomic groups. They have less number of lifestyle habits such as smoking, alcohol etc. However, elderly from income between 10,000 and 20,000 are much more resilient.

Socioeconomic status was positively associated with prosocial behaviour. It was also found that community identity and perceived control played mediating roles between socioeconomic status and prosocial behaviour, respectively (Wang et al., 2021). When the socioeconomic status encompasses secure attachment with parents and other members of the family, it is positively related to helping behaviour among young adults with a strong mediation effect of high moral identity (Shi et al.,2020)

A meta-analysis of more than 350 studies shows socioeconomic status is moderately associated with subjective wellbeing; wherein the income and educational achievement are the objective parameters and perceived socioeconomic status is a subjective parameter. It was revealed that association between subjective socioeconomic status and subjective wellbeing was higher than the association between objective socioeconomic status and subjective wellbeing (Tan et al.,2020). Despite lower socioeconomic status, the presence of growth mindset narrows down the detrimental effects on subjective wellbeing (Zhao et al.,2021). Migration is a likely factor to influence wellbeing. In a study by Huang et al. (2017), significant association between objective socioeconomic status and subjective wellbeing and a partial mediating effect of subjective socioeconomic status and perception of social mobility was observed among the Chinese migrants.

Wellbeing is contributed by psychological and demographic factors such as resilience and socioeconomic status among older adults respectively, is explained by Reyes et al. (2019). Although the resilience and socioeconomic status are associated, gendered results are seen in a study (Phillips et al.,2016), where primarily, economic conditions were stronger correlates of resilience in men, while social conditions in women. However, a qualitative study by Kok et al. (2018) found resilience as an instrumental factor in older adults from lower socioeconomic background, coping effectively with the adversities in life. The findings from the present research support the past studies.

Lifestyle habit such as tobacco smoking is commonly found in lower socioeconomic class across the age, with significantly slower cessation rate even after intervention (Nargis et al.,2019; Hiscock et al., 2015). Consumption of tobacco-chewing is inversely related to socioeconomic status in India, with no gender differences (Bhan et al.,2012). The findings partially support these past research. As lifestyle habits such as smoking or intake of alcohol act as stress relievers, which give immediate sense of relief to the individual, could be one of the reasons of inverse relationship among the elderly. However, Wang and Geng (2019) suggest that lifestyle habits such as smoking or consumption of alcohol positively related to SES.

5.1.14 Difference in Psychological Variables and Physical Health Parameters such as Sensory/Systemic Parameters and Lifestyle Habits due to Working Status

The **H14** stated there will not be any significant difference among the groups of elderly with their different working status across generativity, mindfulness, resilience, subjective wellbeing, and physical health parameters i.e., sensory/systemic parameters and lifestyle habits. The hypothesis is completely rejected as there is a significant difference in all psychological and physical health parameters in the elderly from different working status.

Elderly who are working after the retirement, with /without financial gains, or the self-professionals, who continue to work are more generative, mindful, resilient and experience subjective wellbeing than the elderly belong to other working status. They have better physical health parameters as well.

The findings in the current research are in the line of existing studies which show that working in continuity by profession or post-retirement (if not full-time), helps the older adults to maintain cognitive health as well as functionality (Minami et al., 2015; Wickrama et al.,2013); both the factors are significant contributors of wellbeing in later years of life.

Delay in the cognitive decline and the consequent impairments is an important benefit of post-retirement work status (Bonsang et al.,2009). In a Scaffolding theory proposed by Park & Lorenz (2009), elderly engaged into cognitive functioning show marked increase in frontal activation as an indicator of brain adaptation. In turn in the Post-retirement phase, either paid or honorary work for minimum hundred hours per year significantly enhances cognitive engagement which promotes health and delays the mortality (Luoh & Herzog, 2002).

Working in continuation i.e., self-professionals and working post-retirement showed less symptoms of depression, better cognitive functioning, wellbeing, and life satisfaction than the elderly who opted not to work after retirement. Such findings indeed show the importance of work in physical and cognitive health and wellbeing among the elderly (Schwingel et al.,2009). Loss of role identity due to retirement is likely to hamper psychological wellbeing and thus, volunteering to work after retirement proves as a protective factor and gain purpose in life (Greenfield & Marks,2004).

The findings clearly indicate importance of continuation of work in the health and happiness of elderly. Creating work opportunities, conducive to their age and age-related changes is significantly implied by the present research.

Difference in psychological variables physical health parameters such as chronic medical condition, biomarkers, and physical fitness due to educational status, socioeconomic status and working status

The effect of educational, socioeconomic, and working status on the physical health parameters such as chronic medical condition, biomarkers and physical fitness were studied with help of non-parametric statistics. The X^2 values show that educational status does not have any effect on the health parameters, i.e., chronic medical condition, biomarkers, and physical fitness.

However, there is a significant difference in the elderly from different socioeconomic status in their chronic medical condition. As the socioeconomic status increases, percentage of elderly suffering from chronic medical condition also increases. Sedentary lifestyle, minimum physical activity, lifestyle habits such as smoking, drinking, high-calorie diet are some alarming factors related to socioeconomic status which can affect physical health across the age (Wang &Geng,2019). A cross-cultural study on adolescents and adults shows low physical activity and sedentary lifestyle leading to overweight / obesity. The physical activity is influenced by number of factors such as socioeconomic status and geographical status; and the least amount of physical activity being more common in urban participants than the counterparts (Navti et al.,2017). Significant close association between SES and sedentary lifestyle, with different consequences on physical health level such as serum cholesterol, triglycerides, and the occurrence of cardiac health problems was found by Reddy et.al. (2002) among the Indian sample.

The chi square value shows significant difference in the elderly with different working status and biomarkers. The retired elderly are found to have WNR biomarkers than the rest of the working status. Work status and that too shift work, was found to be a risk factor for lipid profile disturbances (Ghiasvand et al.,2006). Retirement is found to be a beneficial factor in managing the diabetes more effectively (Obasanjo &Mann,2019). The findings of the study by Cleal and Pounsen (2015) reveal that postponement of the retirement age increases the vulnerability to diabetes, which throws light on the beneficial effect of timely retirement.

The working status, particularly the retirement plays a different role in health parameters. The lifestyle habits and sensory / systemic parameters of health benefit from delayed retirement; while chronic medical condition, biomarkers and physical fitness get affected by the delayed retirement years.

The following section of Chapter 5 presents content analysis of the responses of the participants to the semi-structured interview.