27th of July 2020

University of Groningen

Faculty of Spatial Sciences

MSc Population Studies

Master thesis

Supervisor: Dr Tobias Vogt

FAMILY SUPPORT AND MENTAL WELL-BEING AMONG ADULT AND ELDERLY MEN AND WOMEN IN INDIA

PAULINE SOPHIE HEZEL
S4116135

Abstract

The incidence of mental disorders is rising globally and poses multiple challenges for societies all over the world. In India, a lack of public support, an overstretched health-care system as well as culturally rooted kin structures, put the family first in terms of providing care. This master thesis uses the Longitudinal Ageing Study of India to examine the role of familial support on the mental well-being of adults aged 45 and older in India. Using Pierre Bourdieu's concept of capital as a base, the forms of support are split into economic and emotional. The mental well-being is measured with a summary index according to the CES-D. As expected, high emotional support and closeness with many family members are positively associated the mental well-being. In contrast, receiving economic support from the familial network shows a negative association with the mental well-being. Furthermore, the educational level is decisive for the mental well-being outcomes and covers up eventual gender effects.

Keywords: familial support; mental well-being; Bourdieu; CES-D; India; global south

Contents

List of figures

List of tables

1. Introduction

Trends of declines in fertility and mortality as well as a rise in life expectancies can be found all over the world and characterize today's global population development (United Nations, Departement of Economic and Social Affairs, Population Division, 2020). This results in an increasing share of the elderly population and poses challenges for individuals, families, societies, and also on the country level. Among other challenges, an increasing life expectancy can come along with decreasing health (Brown, 2015; Lindgren, 2016). This does not necessarily mean that the number of years with bad health increases but that more people who reach the oldest ages will have limitations in their daily lives and need assistance or develop other needs with higher ages. According to the World Health Organization (2017), over 20% of adults aged 60 and older suffer from mental or neurological disorders with the most common ones being depression and dementia. What makes the problem of mental disorders even more important is the fact that these disorders are under-identified by the older people themselves as well as by health-care professionals. In addition, mental health conditions are still stigmatized in many countries which makes people reluctant to seek help (ibid.).

Mental health problems among the older members of the society have far-reaching consequences in many sectors on the societal or community level, as the elderly are often involved in voluntary work or childcare (Aroonsrimorakot et al., 2019; Jadhav et al., 2013). Furthermore, longer phases of dependency require more support over a longer period of time and therefore has implications on family structures and intergenerational ties. The main question that arises from this is: who can offer this support? More precisely, this means that both the public sector with pension systems as well as the private environment through social and financial support are crucial factors in facing an increasing amount of mental disorders among the elderly. Both developed and developing countries are experiencing substantial changes in their age structures. In connection with the rise of mental disorders among older aged people, there are potentially important implications for changes in all sectors of society and before elaborating the interplay in more detail, the health context of the Republic of India is outlined to provide a framework for the mentioned subject.

In India, the life expectancy at birth was at 69.3 years in 2019 and the United Nations project it to increase to 74.6 years in 2050 (United Nations, Departement of Economic and Social Affairs, Population Division, 2019). A crucial aspect of India is the immense diversity among the population and the big differences in the life expectancy which are depending on regional differences and the gender (Chaudhuri & Roy, 2009; Dandona et al., 2017; Ohlan, 2013; Roy & Chaudhuri, 2008). Despite the rise in life expectancy, the highest ages are still relatively young compared to older-aged adults in western societies. The average life expectancy at birth for people in Europe, for example, was at 81 years in 2018 (Urmersbach, 2020). This difference in the life expectancies is crucial for this study as it explains the age of the sample of this study. For this study, Indian adults who are 45 years

and older are included. Relative to the life expectancy at birth, individuals with an age older than 45 are considered to count to the older aged adults in the country.

In terms of population ageing in India, the share of the people aged 65+ in India was indicated with 3.8% of the whole population in 1990, has almost doubled to 6.6% in 2020 and is projected to count for 13.8% in 2050 (United Nations, Departement of Economic and Social Affairs, Population Division, 2019). This is an even more remarkable figure in absolute terms: India had more than 91.6 million elderly in 2010 and the number of elderly in India is projected to reach 158.7 million in 2025 and will by then surpass the population of children below the age of 14 (Dey et al., 2012). The question deriving from these facts can simply be phrased as: "who takes care of the elderly?" As a result of the Indian context, for any kind of support, older aged individuals must mainly rely on their own family. The Indian government provides no public support for many Indians, plus many Indians hardly have any savings (Jadhav et al., 2013; Kumar & Kumar, 2019). Therefore, individuals work as long as possible and later need to rely on their families for support.

To continue, a brief description of the current state of the Indian health care system follows. Like in many other lower-middle-income countries, the health care system of India is less developed and capacious compared to high-income countries. More specifically, the country has to deal with a "triple burden of diseases" (Narain, 2016, p. 85) – the ongoing agenda to deal with infectious diseases plus the challenge of (new) non-communicable diseases and the appearance of new pathogens which can lead to epidemics and pandemics (ibid.). Additionally, all this must be handled by an already over-stretched health-care system. Non-communicable diseases are by now the leading cause of death in the country but also, for example, crucial factors like the maternal mortality ratio or the child mortality are still concerningly high (Dandona et al., 2017; Narain, 2016). Therefore, the countries' health system is not prepared for an increase in chronic conditions of the elderly. Furthermore, mental disorders are not a major focus in India's health policy. India has a mixed health-care system, meaning a coexistence of both public and private health-care service providers. Because of large disparities between urban and rural areas in terms of use and quality of health care institutions, in 2005 the government started focussing on strengthening the rural public health system, especially for women and children (Chokshi et al., 2016).

In 2014, the first National Mental Health Policy was announced, aiming to provide sufficient psychiatric care to the population by 2020. In India, only 0.7 physicians per 1,000 individuals and only 0.75 psychiatrists per 100,000 population exist, whilst the optimal number – recommended by the Mental Health Atlas 2014 – should be higher than 3 psychiatrists per 100,000 (Garg et al., 2019). Countries with a similar development level can rely on more health workers, like Nicaragua with 1 physician per 1,000 individuals and Bolivia with 1.6 (The World Bank Group, 2019), or Mongolia with 3.3 psychiatrists per 100,000 population in 2005 already (Byambasuren & Tsetsegdary, 2005).

Further, the access to quality mental health care in India is limited and traditional approaches – like the Ayurveda system of medicine – are unlikely to reach the high share of the population who have mental disorders (Yellowlees & Chan, 2015). By using the global burden of disease study, Sagar et al. (2020) found 197.3 million people suffering from mental disorders in India, including 45.7 million with depressive disorders and 44.9 million with anxiety disorders, in 2017. Additionally, India has the highest national suicide rate in South-East Asia: in 2015 the rate was 10.6 per 100,000 with a male to female ratio of 2.2 (Snowdon, 2019). This underlines why Indians with mental health problems need more attention and further indicates possible gender differences within that topic. Moreover, a highly interesting difference regarding the age of people who committed suicide was found: the suicide rate of elderly males and females in India between 1990 and 2016 increased substantially, whereas the same rates in China, Japan and Australia fell substantially (Snowdon, 2019).

As will be explained in the theoretical section, social support is important for the (mental) health of individuals and in the Indian context and as the main interest of this thesis, the role of the family network is in focus. India is a special case in terms of cultural beliefs since it is very diverse and combines different perspectives and high stigmatization on people with mental disorders (Khandelwal et al., 2004). This puts families once more in the role of taking care, as it can be assumed that mental disorders are more likely to be shared within the closest family as children and spouses, than with friends or workers of health care institutions. Additionally, it is important to recognize that 90% of older Indians do not have retirement provisions (Arokiasamy et al., 2012) and, therefore, the family network plays an even more crucial role in providing financial and social support for older-aged people.

The topic of mental disorders has been well studied in high-income countries (World Health Organization and Calouste Gulbenkian Foundation, 2014) and awareness has also risen in less developed countries, but there is still a gap in detailed research of the topic in countries of the global south. As deriving from the previously given background information, little research has been done on the explicit role of family support on the mental health outcomes of the elderly. However, the role must be seen as a crucial form of support that helps to strengthen people's mental health. This leads to the following main research question: *what is the role of family support on mental well-being outcomes of older-aged adults in India?* As described in the next section, the Indian context is also specific in terms of gender preferences, so a sub-question asks how the outcomes differ between females and males. A clear scientific contribution can be provided because the family support is split up into two different dimensions: economic and emotional support from family members. Both dimensions of support are assumed to have a positive impact on the mental well-being, however, studying both within one dataset and in the Indian context has not been done before and only limited research on the outcomes of family support in the Indian literature exists. Additionally, the dataset LASI provides detailed and unique insights into the living experiences of older-aged Indians using a nationally representative sample.

1.1. Gender-specific aspects in India

Throughout all areas of life, India is typified by high gender inequalities. This applies to child preferences, education, work-force participation, health-care, and recognition in legal, social and political rights (Arora, 2012; Deere et al., 2013; Maharana & Ladusingh, 2014). Although in this study health outcomes are of main interest, it is crucial to consider inequality and gender disparities in other sectors as well to see how they influence and predict each other. For example, accumulating wealth is necessary to enjoy sufficient health care in a context with little public regulations; however, this depends amongst others on the marital and inheritance regimes in that respective country. For India, these regimes work mainly in favour of men (Deere et al., 2013). Moreover, this results in a strong male bias in inheritance in practice as women cannot bequeath property to their children. This, in turn, could influence the support children provide for their older-aged parents. Furthermore, women's property rights have a large effect on a gender-equitable distribution of wealth (ibid.).

Multiple studies document that men and women have unequal access to health care at all stages of their life cycle (Saikia et al., 2016). At old age, Indian women report worse self-rated health and disabilities, in line with utilizing health-care facilities less than men. Indeed, there is evidence, that health-care expenditures on Indian women are significantly lower than on men, meaning that Indians spend less on female health care than on male health care (ibid.). Focusing on cognitive health outcomes, Lee et al. (2014) found gender disparities in cognitive functioning and they linked the cognitive disadvantage of females in older ages to gender disparities in social activities, overall health and educational attainment.

Some of these challenges for women become even more specific with higher ages as Irudaya & Balagopal (2017) state in the following quote: "ageing reinforces problems associated with widowhood, which is particularly significant in the case of elderly women, as a large proportion of them are widowed, unemployed, illiterate and dependent on others for economic support" (p. 6). In line with this, widowed women are more likely to experience segregation and isolation due to the practice of patrilocality (ibid.), which means that after her husband died, a widowed woman usually lives in the husband's home village, which is likely to be a different village than her natal home. This scenario is widely spread, due to differences in the life expectancy; which means women are more often widowed than men. This has also implications on the question of who takes care of an individual at an older age. The assumption is that the majority of elderly men would receive care from their spouse, whereas widowed women would be dependent on their relationships with adult children, other relatives or friends (Irudaya & Balagopal, 2017). Thus, female elderly are more vulnerable and in weaker financial positions.

These briefly presented findings for gender inequalities in India aim to provide background knowledge why gender differences within this field of research are expected. The expectations are elaborated in the literature review and stated as hypotheses in chapter 2.6.

2. Theoretical framework

This research seeks to identify the role of forms of support from the family network on the mental health outcomes of Indians aged 45 and older. To have more insightful findings, the studied family support is split up into two dimensions: emotional vs. economic support. This is mainly based on Bourdieu's distinction between individuals' resources. Another theory dealing with the idea of the interchange of resources between generations is the intergenerational solidarity framework. Concepts of both theories are combined and knowledge from previous studies is added, to build a conceptual model. From there, the hypotheses and operationalization of the variables follow.

2.1 The concept of capital according to Pierre Bourdieu

In the past years, there has been a rise of research on social capital and its relationship with health outcomes within the social epidemiological literature (Carpiano, 2006). The idea of social capital helps to explain new insights in how socioeconomic factors impact health (ibid). Mainly relevant for this research is the distinction of capital done by sociologist Pierre Bourdieu. He divided four kinds of capitals which an individual possesses: economic, social, cultural, and symbolic capital. According to Bourdieu (1982), capital can be seen as social energy that opens up different possibilities for action of an individual and can exist in an internalized or materialized form. By economic capital, Bourdieu means money and property; cultural capital means knowledge and education and social capital refers to a persons' relationships. In other words, the social capital is fully inhered within social networks. Symbolic capital, however, is a special type of capital and can only emerge from the other three types, it refers mainly to prestige and fame (ibid.). For this analysis, both the economic and the social capital are of main interest. This provides the possibility to split the forms of support the family grants and to analyse the impact separately. Thus, these are the two aspects which were studied in the research – the impact of economic support on the mental well-being as well as the impact of emotional support. Although Bourdieu does not define where exactly individuals get their sorts of capital from, is it unambiguous where it comes from for elderly people in the Indian context. Social capital comes, as in Bourdieu's definition, from the social network which is in this specific case limited to the family network. This assumption is supported by Santini et al. (2015), who studied social network types of countries and found the vast majority of the Indian sample belonging to the 'locally integrated' or 'family dependent' type, which both refer to close local family ties as the main source of the social network. . Economic capital, as well, in the Indian context, has the origin in the family network in absence of savings and public regulations.

Bourdieu's capital approach has been associated in various studies with several health outcomes, mostly in the field of gerontology and healthy ageing. Gruber & Böhm (2012) for example linked it to the field of social psychiatry, which they define as a science that systematically examines the importance of social, environmental and cultural factors of mental health and illness. The authors

equalised Bourdieu's concept of capital with the resilience approach, which is widespread in social psychiatric work. Resilience is described as the ability of an individual to cope with stressful living conditions or negative impacts of stress in general. In line, the types of capital are resilience-enhancing factors, in addition to biological and psychological factors of an individual. This leads to the assumption, that high capital influences the mental well-being of an individual positively. According to Gruber & Böhm (2012), the concept of capital can be applied to people with psychological problems as a source of support for coping with the disorders. Therefore, the central assumption is that the concept of capital can be harnessed by assuming that it offers support to people with mental problems by providing capital. In other words, the increase in the value or the amount of one capital would strengthen the resilience of the individual and the person could then cope better with eventual struggles. That could mean that more economic capital – gained through financial support from the family – increases the resilience and has, therefore, a positive effect on the mental well-being. Furthermore, that could also mean that a higher social capital – for example with many close contacts within the family network – strengthens the ability to cope with (mental) difficulties and lead in turn to a more positive well-being. For this study, the two forms of economic and social capital are used. In the further of the study, the two forms of capital are transferred to the expressions of economic support and emotional support. The following chapter provides another approach to distinguish support between individuals and the two approaches are merged in the resulting conceptual model in chapter 2.5.

2.2 The intergenerational solidarity framework

After explaining the different kinds of capital deriving from Bourdieu's concept, the intergenerational solidarity framework is used to show the importance and the benefit of these capitals, provided by the family. Intergenerational support refers to redistributions of resources between generations and is a central component of the human life course. Generally, and especially when people cannot rely on public institutions for support, the private transfers within the family help to survive in vulnerable times. Moreover, families have always been the central source for support in the human development and public support only became available in modern western societies.

Silverstein et al. (2012) and Irudaya & Balagopal (2017) both use the intergenerational solidarity framework to explain different forms of solidarity between family members as well as their motives. Both distinguish between six elements of solidarity, which are explained hereafter. Affectual solidarity describes the emotional closeness between members of the family, whereas the associational solidarity specifies the social interactions and common activities between the involved people. It follows the consensual solidarity, which is defined by the agreement on values, attitudes and beliefs among family members. The next dimension is the functional solidarity and means help and exchange of resources. The two lastly mentioned are the normative and structural solidarity and refer to filial obligation and geographic proximity, respectively.

Three forms of solidarity are of higher interest in this study since they provide a link between the economic and emotional support deriving from Bourdieu's theoretical approach and the variables that are available in the dataset. According to the definition of intergenerational solidarity, emotional or financial support are not two different concepts but related aspects of solidarity. Therefore, both are perceived as central components of being resilient as they may reinforce the capacities to withstand adversity. Thus, economic support is a central component of the functional element of solidarity, next to more instrumental support in form of actual help with daily activities. On the other hand, two elements are associated as forms of emotional support: affectual solidarity as well as associational solidarity. Both are dealing with solidarity on a social level: on the one side the emotional closeness between family members and on the other side the social interactions between those individuals. The three forms of solidarity – associational, affectual and functional – are used as measurements of the respective forms of support from Bourdieu that were stated previously.

There is evidence that the solidarity and the resulting support from adult children are influenced by parental factors such as declining health, increasing age or widowhood of the parents (Irudaya & Balagopal, 2017). Additionally, there are factors for the children which determine whether they provide support. This could be the emotional attachment towards the elderly parent or the expectation of financial rewards (ibid.).

Linking the forms of solidarity back to expected gender differences, indeed, research has shown that certain types of support are predominant for mothers or fathers. Reflecting the strong male preference in India, "affection is a stronger predictor when mothers are recipients of support, and that inheritance is a more salient predictor when fathers are recipients" (Irudaya & Balagopal, 2017, p. 24). This suggests that emotional support for male older-aged adults might have a stronger impact on their (mental) health because it less culturally rooted and therefore more appreciated.

It is crucial to keep in mind that all those dimensions of solidarity refer to a transfer or agreement in both directions, however, for this project, only the solidarity and upward share of resources the elderly parents receive from their adult children or other family members are of interest.

2.3 The relation between the private network and mental well-being
According to the World Health Organization (2017), social care is important to support older people's health and the prevention of diseases. In case there is not much support from governmental institutions, care must mainly be provided through an individuals' network and relationships, of which the closest ones are usually the family. This links back to the concept of resilience, which can be strengthened by familial support in various dimensions. If elderly people lack social and economic capital, they can become socially isolated with health consequences or can become unable to finance their health care (Grenade & Boldy, 2008). In a large review study of 148 empirical studies, Holt-Lunstad et al. (2010) link the quality and quantity of individuals' social relationships not only to

mental health but also to both morbidity and mortality. While progress in technology and increasing globalization could lead to the assumption that more social connections between people exist, the opposite happens, and individuals become more isolated (ibid.). This raises the importance of the relation between the social network and health behaviours. Holt-Lunstad et al. (2010) describe the effect of social relationships on healthy behaviours as both positive and negative, but mostly a close social network is associated "with conformity to social norms relevant to health and self-care" (p. 2). Another role fulfilled by being a member of a social network is the purpose of providing self-esteem and purpose to life because individuals see themselves as meaningful within that network (ibid.). Social isolation, therefore, is a great predictor for bad mental health. In fact, their results even show that a lack of social contacts leads to a higher mortality risk than well-known factors as smoking or regular consumption of alcohol. Furthermore, Holt-Lunstad et al. (2010) found strong evidence that social relationships influence the health outcomes of adults on the behavioural, emotional, and cognitive level (ibid.). In line with that, Berkman et al. (2012) found the social network to have "several functions including the provision of emotional, instrumental, appraisal, and financial support" (p. 261). This strengthens the higher likelihood for older adults to suffer from mental disorders, because a social network is usually becoming less strong with higher age when family members or spouses die, or children move away. More specifically, Allen et al. (2014) were able to link social isolation and loneliness of older people to depressive symptoms and overall poor mental health and cognition. Further, Snowden (2007) could confirm that people "who are mentally ill are especially sensitive to the needs and expectations of their families". This strengthens the important role of family support in times of suffering from mental illness. It is further stated that families of patients are present and active throughout the psychiatric process in India what again underlines the close involvement within Indian families. However, it is not clear whether the form of support is rather socially, as in taking care, or economically, as in providing food or financial help. Another link, yet not specifically examined within the family network, is the effect of financial insecurity on the mental well-being. Both Rohde et al. (2016) and Weinstein & Stone (2018) provide evidence, that stable economic conditions support psychological satisfaction.

2.4 Literature review

Although providing extensive knowledge about both mental and physical disorders in India, Khandelwal et al. (2004) quickly come to the following statement: "there is no health profile unique to India as a whole" (p. 140). This again highlights the variety of health conditions and outcomes within the country. However, there are common factors that put groups of people on a higher risk of suffering from a mental disorder. These are being a woman, being a member of a disadvantaged tribe or caste, or living in a rural area (ibid.). This was confirmed by Sagar et al. (2020) and further examined by sex differentials in the diagnoses. Females are more likely to suffer from depression, anxiety and eating disorders, whereas males are more likely to suffer from autism or ADHD. Describing the unmet mental health needs for adults, Patel et al. (2016) found the level of treatment coverage for mental

disorders to be much lower than for child and maternal interventions or non-communicable diseases. Treatment gaps were largest in rural areas due to poor distribution of mental health resources and varying policies across states. Moreover, the majority of people visit traditional healers for care (ibid.). Additionally, there is a significant gender disparity in widowhood due to the longer lifespan of women, so elderly widows are more likely to experience deprivation and social isolation and therefore at higher risk of suffering from mental disorders (Berkman et al., 2012). Using a qualitative approach, Patel & Prince (2001) found, that "the system of family care and support for older persons was less reliable than has been claimed. Care was often conditional upon the child's expectation of inheriting the parent's property" (p. 29). This, according to the authors, leads to anxiety being very common among older people. This again highlights the vulnerability of women because of the patriarchic system in India.

Cramm et al. (2015) found differences in predictors of ill-health among men and women, using the Longitudinal Ageing Study in India: "among men, older age and being single increased the probability of being in poor health […]. Among women, residence, age, marital status, income and indoor smoking predicted SRH [self-reported health]" (p. 250). Although this effect has not been studied explicitly for mental health outcomes, it supports the assumption, that the financial assistance is more important for women, whereas the social network is for men.

The topic of family support and challenges for older-aged adults has been examined by multiple studies working with data from India, but not as determinants of mental well-being. There is research about the economic dependency of elderly (Kumar & Kumar, 2019; Murphy et al., 2020) or about challenges women and men face in older age and the living arrangements of elderly in India (Berkman et al., 2012; Jadhav et al., 2013). Also, there are studies which examine why children in India provide support for their parents and what kind of support (Dhar et al., 2018; Irudaya & Balagopal, 2017; Khandelwal et al., 2004). It was examined how and which kind of support affects the physical health of the elderly which are being taken care of (Aroonsrimorakot et al., 2019), but not on the impacts on possible mental disorders like depression and anxiety. As well, the caregiver's perspective in the sense of intergenerational transfers and potential stress and burdens among the giving and younger generation has been studied (Murphy et al., 2020).

Furthermore, it has been found that elderly experience loneliness and depression as a result of living alone or because of a lack of close family ties (Aroonsrimorakot et al., 2019). Recently, Christian et al. (2020) could find evidence for a positive association between high social capital and the subjective well-being of the elderly in India. This supports the assumption that the higher the level of emotional support, the better the mental health outcomes. Irudaya & Balagopal (2017) found this especially to be true for widows, since they are likely to live with their husband's family after they married and remain there, even as a widow. In their research, 14.6% of elderly men compared to 47.8% of elderly women were widowed. This indicates that the majority of elderly men receive care from their spouse, as most

were married at the time the study was conducted, whereas the situation of widowed women is more dependent on the family network and support of their adult children. However, the support widows require is not only of emotional and social nature but also economic. Kumar & Kumar (2019) noted that, overall, 72% of Indians aged older than 60 were economically dependent on others, but with a high gender disparity: "around 85% females were dependent either partially or fully, while among males the situation was much better; more than half of the elderly males from both urban and rural areas did not depend on others for their livelihood and maintenance" (p. 354). This supports the assumption that for women financial support has a stronger effect on their mental health, compared to men because elderly female persons are more vulnerable and in a weaker financial position. The phenomenon of expelled and displaced widows is unfortunately widely spread in India and widows often find themselves begging for money after they are being left from their families (König, 2014).

To summarize, any support and solidarity from an individuals' social network is connected to the well-being. Familial support, in this study, is seen as resilience strengthening factor for the mental well-being and is therefore assumed to improve the outcome. Sex differentials in both overall mental health as well as in the diagnoses were found in multiple studies (Khandelwhal 2004; Sagar 2020), with the result of, on average, worse mental health among women than among men. Moreover, women are economically disadvantaged due to multiple reasons and thus more dependent on financial support from their families. High social support is associated with good health, as well as a stable financial situation is associated with good health outcomes. It is assumed that emotional support has a stronger effect on men's mental well-being, since the underlying reason to care for fathers in old ages is likely to be driven by the chances of inheritance than by affection and emotional solidarity.

2.5 Conceptual model

Deriving from the outlined theoretical background and the knowledge from previous research, figure 1 shows the conceptual model this study is based on. The model combines the two theoretical approaches – economic and social capital of Bourdieu and the solidarity framework – and shows their positive associations on the mental well-being, as they are expected in this study. The basic concepts are emotional and economic support, which derive from Bourdieu's definition of social and economic capital, respectively. In other words, the shown forms of support are each a part of one kind of capitals. The forms of support, on the other hand, are further split into forms of solidarity and then operationalized with variables from the LASI dataset. This is explained in detail in the operationalization (chapter 3.2). The outcome and main interest of this study is the mental well-being of the individuals; measured with a summary index. The plus-signs at the arrows indicate a positive effect on the mental well-being. If gender differences are expected, this is indicated with one or two plusses and the sex in brackets. The associations are mainly deriving from what was found in previous studies. Further, multiple other factors can shape the mental well-being of an individual, such as the age, the educational level, the marital status, caste and religion. These demographic variables are

added as control variables in the model as well as in the analysis. They do not show positive or negative signs at the arrow, because no specific associations were made.

Figure 1: Conceptual Model

2.6 Hypotheses

Six hypotheses are stated to give an answer to the research question and tested with regression analysis. They can be found below; three hypotheses concentrating on the main effects of this study as outlined in the theoretical framework and three hypotheses specified for expected gender differences in the sample.

H1: In India, women report on average worse mental well-being than men.

H2: The more close family ties an individual reports, the better the mental well-being outcome.

H3: Receiving high emotional support has a significant positive impact on the mental well-being.

H4: Receiving economic support is positively associated with good mental well-being.

H5: Receiving emotional support has a significantly stronger effect on men's mental well-being compared to women.

H6: Receiving economic support has a stronger effect on women's mental well-being compared to men.

3. Data and methodology

3.1 The dataset

The Longitudinal Aging Study in India – LASI – has been used for this research. It focuses on the social and economic well-being of India's elderly population as well as on a variety of physical and mental health issues. It, therefore, allows unique insights into the situation of health and living conditions of adults and elderly people in India. The study is well comparable to the Health and Retirement Study of the United States and has several sister surveys as for the Longitudinal Study of Ageing in Korea and the Health and Retirement Study of China. The pilot wave was conducted in 2010 in collaboration of the Harvard School of Public Health, the RAND Corporation and the International Institute for Population Sciences in Mumbai (Cramm et al., 2015).

The data were collected from a nationally representative sample of the population aged 45 years and older and based on the 2001 Indian census from October until December. The pilot study took place in four Indian states – Rajasthan and Punjab in the north and Kerala and Karnataka in the south. Whereas Rajasthan is a relatively poor state, Punjab is economically better developed. Kerala has a relatively well-developed health system and is seen as a role model for other states in this respect (Arokiasamy et al., 2012). The questionnaire was developed in English and then translated into the dominant languages: Hindi (Punjab and Rajasthan), Kannada (Karnataka), and Malayalam (Kerala) (ibid.). LASI takes account of features unique to India, including its institutional and cultural characteristics (The Program on Global Aging, Health, and Policy, 2015). This study works with the pilot study from 2010 as the first wave has not been published yet. A total of 1,546 households was randomly sampled, and 1683 interviews with individuals were done in 950 of these households with a member aged at least 45 years (Lee et al., 2014). The response rates were 88.5 % for households and 90.9 % for individuals (Cramm et al., 2015). After excluding respondents younger than 45 who answered the questionnaire in case the household head was not available, a sample of 1,486 observations remained.

3.2 Operationalization

The operationalization for the main variables as well as the additional control variables will be explained in detail in the following subchapters. For the operationalization of the main independent variables, the intergenerational solidarity framework has been adopted to be a framework for any solidarity among family members, not necessarily between generations. With the given data it is not possible to distinguish from which family member(s) the support flows. This could, for example, include support from the spouse or from siblings, which is in fact not intergenerational but still of interest for this study.

3.2.1 Dependent variable: mental well-being

The mental well-being of the individuals aged 45+ is the main interest of the study and, therefore, the outcome variable of the analysis. To assess the mental well-being of an individual, an index consisting of twenty variables was built. The used index is based on the Depression Scale of the Center for Epidemiologic Studies (hereafter referred to as CES-D). The Center for Epidemiological Studies is part of the American National Institute for Mental Health. It was developed to identify current depressive symptomology in adolescents and adults. However, it does not work as a diagnostic tool, more so as a screening measure (Radloff, 1977). The scale has originally been published by Radloff in 1977 already and has been used successfully across wide age ranges as well as on a variety of ethnical and racial groups (American Psychological Association, 2011). There are 10 and 20-items versions of the CES-D. The factor structure, as well as both reliability and validity, were for example established and confirmed in a community of older adults in Singapore by Lee & Chokkanathan (2008) with the result that also the brief CES-D scale can be used to compare symptoms of depression between males and females aged older than 65. Similar results were presented for a sample of European older adults (Karim et al., 2015) and populations in South Africa (Baron et al., 2017).

The original CES-D scale includes items asking for specific moods, feelings, loss of appetite and sleeping difficulties. The scale aims to picture different dimensions of mental health with a focus on symptoms of depression. The symptoms are added as a summary index. The possibilities for reply are ranging from "rarely or none of the time; less than a day" to "some or little of the time, 1 or 2 days a week" to "occasionally or a moderate amount of the time; 3 to 4 days" and "most or all of the time; 5 to 7 days". In this study, the fifth and sixth categories "don't know" and "refused" were recoded and treated as missing. The scoring was done accordingly to the CES-D, namely: 0 for answering the first option, 1 for answering the second option, 2 for answering the third option and 3 for answers of the fourth option (Radloff, 1977). This leads to a possible range of scores from 0 to 60, with the higher scores indicating the presence of more severe symptomology. Providing a benchmark for better understanding of the scale, van Dam & Earleywine (2011) found an average score of 10.3 in a general population sample of the United States or Cheung & Bagley (1998) a mean of 12.2 points in a sample of Chinese couples living in Hong Kong. Smarr & Keefer (2011) state, that usually a score higher than 16 works as a cut-off for clinical depression and should result in a referral to a more diagnostic evaluation. However, after comparing multiple studies working with the CES-D they recommend the cut-off score of 19 as being optimal in most cases and for various populations (ibid.).

An overview of the twenty items is provided in table 1. A space on the right side indicates that the wording in the LASI questionnaire did not differ from the phrasing of the original CES-D scale. However, differences were found and indicated in the table for five out of twenty questions. In case of question five, no action or recoding was required, since the meaning is very much the same. The other four questions however differed in the way they were phrased negatively compared to the original

positively phrased ones. This implies that there was no reverse scoring needed for those respective questions, to the contrary as what would be done with the original CES-D questions. The introduction to these questions was the following sentence: "Please tell me how often you have felt this way during the past week".

Original CES-D	Discrepancy in the LASI questionnaire
1. I was bothered by things that usually don't bother me.	
2. I did not feel like eating; my appetite was poor.	
3. I felt that I could not shake off the blues even with help from my family or friends.	
4. I felt I was just as good as other people.	4. I felt I was not as good as other people.
5. I had trouble keeping my mind on what I was doing.	5. I had trouble focusing.
6. I felt depressed.	
7. I felt that everything I did was an effort.	
8. I felt hopeful about the future.	8. I felt hopeless about the future.
9. I thought my life had been a failure.	
10. I felt fearful.	
11. My sleep was restless.	
12. I was happy.	12. I felt unhappy.
13. I talked less than usual.	
14. I felt lonely.	
15. People were unfriendly.	
16. I enjoyed life.	16. I did not enjoy life.
17. I had crying spells.	
18. I felt sad.	
19. I felt that people dislike me.	
20. I could not get "going."	

Table 1: Comparison of phrasing between CES-D and LASI variables

Cronbach's alpha was calculated for all the variables which are included in the index with a result of the coefficient of 0.92. This gives evidence for a very high internal consistency of all the variables and their suitability to build an index of. Radloff himself reported a high Cronbach's alpha coefficient (about 0.85) in his surveys in general populations, and hints at the following concern: "this high consistency may include some component of response bias, i.e., the tendency of an individual to answer all questions in the same (positive or negative) direction" (Radloff, 1977). However, after testing the evidence of validity based on clinician's ratings independent of the self-report, he found that a possible response bias "is not the major contributor to the reliability of the scale" (ibid., p. 391).

3.2.2 Emotional support

As outlined before, there are two suitable variables in the dataset to measure the emotional support an individual receives from his or her family.

The first option is the following continuous variable (fs324): "With how many of your family members (siblings, spouse, children, grandchildren, parents, uncles, aunts, cousins) do you have a close relationship?" This variable aims to measure the affectional solidarity. The replies range from 0 to 200 and it is assumed that a close relationship with a family member results in emotional support from that respective family member in difficult times or situations. In fact, Burleson (2003) found, that emotional support is the most important outcome provided by close relationship partners. In the analysis, this is referred to as "number of close contacts" or "close family ties" and has been done similarly by Grenade & Boldy (2008).

The second option to measure the emotional support, more specifically the associational solidarity, of an individual within his or her family is phrased as the following in the questionnaire: "How often do you feel ill-treated within your family?" Answer-categories ranged from "hardly ever or never" to "some of the time" to "often". Although this is not a typical measurement for emotional support, the assumption is that in India – where close kinship structures are widely spread – no ill-treatment can rather be interpreted as being well-treated more than as a complete absence of treatment or no contact at all. This assumption is supported through a report of the UN (United Nations, Economic and Social Affairs, 2016), indicating the average household size (=member per household) in India with 4.8 persons. This number is, for example, more than twice as high as the indicator for Germany (2.1 members per household on average). Furthermore, the average number of individuals living in one household among the analysed sample is even higher, at 5.2. Therefore the variable was recoded reversely as the following: "hardly ever or never" expresses "high emotional support", "sometimes" and "often" were added and form the category "low emotional support" together, and "don't know" and 'refused' are recoded as missing. Since there is no such variable asking for a calling or visiting routine of relatives, it is assumed that these two variables come closest to measure the emotional support of an individual. This goes in line with operationalisations in other studies, for example Giesbers et al. (2019).

3.2.3 Economic support

To find out whether an individual received any financial help from family members, the binary variable fs401 with the wording "Did you receive financial help from your family (parents, children, siblings, grandchildren, parents of spouse or other family members) during the past 12 months?" and the given options "yes" and "no" are used. Economic support was similarly measured by Li (2013) for the elderly in Taiwan. However, this variable shows some limitations. As mentioned before, the majority of the individuals live in a household with multiple family members, so there might as well be indirect financial help (for example in form of food), which cannot explicitly be measured with this variable. However, in the codebook the explanation "Financial support includes both monetary and non-monetary support in which annual costs totals more than 1000 rupees" is given. Still, this leaves a lot of room for interpretation for the respondent and might also lead to different understandings among cultures. This is not very specific but it measures all types of monetarized transfers ranging from food provision over gifts to inheritances. To provide more background knowledge about the financial help, the following question asked for the total value of the help from the past 12 months and the given answers ranged from 250 to 300,000 rupees (approximately 5 to around 5,000 euros calculated with a currency rate from 2010).

3.2.4 Control variables

There are several control variables which were added stepwise to the regression models. Some of the variables had to be recoded and summarized into categories, since the number of cases is too small for very detailed variables. First, the variable gender was added, it is coded with 0=male and 1=female in the dataset. Second, the age of the respondent is of interest for this study. The continuous variable recording the age was recoded into a categorical variable with four age categories: 0=45-54, 1=55-64, 2=65-74 and 3=75+. Third, the marital status of the respondent is included. The original characteristics "never married", "separated/deserted", "divorced" and "widowed" were summarized to 0=not married as opposed to the remaining category 1=married. Fourth, a variable reporting the level of education was used. The socio-economic status of participants, which is often used in similar studies as a predictor of (mental) health outcomes, is thus covered with the educational levels. The category 0=no schooling remained as it was, 1=less than primary and 2=primary completed were recoded to 1=primary education, 3=middle school completed was recoded to 2=secondary education, and 4=high school completed and 5=more than high school were recoded to 3=tertiary education. Moreover, two contextual variables are used as control variables as well. The categorical variable caste was categorized in the LASI dataset as follows: 0=other, 1=sc/st meaning "scheduled caste/scheduled tribe" and 2=obc meaning "other backward classes". The sc/st and obc categories are historically disadvantaged social classes in India (Cramm et al., 2015), so the "other" must most likely represent higher castes and was therefore used as the reference category. These terms and classifications are recognised in the Constitution of India. Scheduled tribes and scheduled castes are despite of protection in the constitution facing discrimination and marginalization across all areas of life and have been

identified as the two most backward groups of Indian Society (Senapati, 2013; Srinivasan & Kumar, 1999). Lastly, another categorical variable – religion – is used with the following coding: 0=Hindu, 1=Muslim, 2=Christian, 3=Sikh and 4=Other.

3.3 Methodology

The first section of the results will give the descriptive statistics of all variables. For continuous variables, the respective mean, the standard deviation as well as the minimum and the maximum value are presented in the overview table 2. For categorical variables, the number of cases per category as well as the percentage share of the whole sample per category are reported. This aims to provide an overview without having the dataset available and to understand the socio-economic and demographic profile of the sample. To get first results, the differences between the genders on the mental well-being index scale were tested for significance across all ages as well as within the age-categories using a t-test. The results can be found in graph 1. Moreover, the differences between the genders regarding the main effects (close contacts, emotional support and economic support) have been tested for statistical significance (see graph 2).

In order to test the relations between the variables and the hypotheses of this study, multivariate linear regressions have been conducted. Since the dependent variable (the mental well-being) is continuous it is suitable for this type of regression and the first main independent variable is the number of close family ties and also continuous. It is assumed that there is a linear relationship between the dependent and independent variables. However, this means that for the two categorical independent variables economic support and the second measurement of emotional support the variables were recoded to dummy variables. Linear regression models aim to estimate the effect of an increase of one unit in x on the dependent variable y and then hypotheses testing can be done.

The hypotheses have been tested in different models. Firstly, a basic model was built using mental well-being as the dependent variable and the number of close family ties as the independent variable. The first model (M1) aims to show the main effect of the predictor on the dependent variable. Next, the sociodemographic control variables gender and age (in categories) were added. In the third model, the level of education, as well as the marital status, were added and lastly in the fourth model further contextual variables as caste and religion were included.

For the second set of models, the same process was done with the remaining two main independent variables. The continuous variable "number of close contacts" was replaced by the binary variable measuring emotional support (0=low emotional support; 1=high emotional support) and the binary variable measuring economic support (0=no; 1=yes) and then the model building proceeded in the same way as described above. As an addition, in the last model (M8) interaction-effects were included. This was done by multiplying the respective variables (gender*emotional support and gender*economic support). As outlined in the theoretical part of this paper, it is assumed that gender

influences the effect of forms of support on the mental well-being and that the outcomes differ by gender.

4. Results

4.1 Descriptive findings

As previously mentioned, table 2 below provides an overview over all used variables in the analysis.

		Mean	SD	Range	Min	Max	N	%
Mental well-being (CES-D)		7.84	7.46	0-60	0	46	1,203	
	males	7.25	7.41		0	46	578	
	females	8.39	7.47		0	43	625	
Number of close contacts		8.56	16.86		0	200		
Emotional support (reverse ill-treatment)	low						348	25.41
	high						1,022	74.6
Economic support	yes						81	5.45
	no						1,404	94.55
Age (continuous)		57.96	10.82	45-103				
	45-54						651	43.81
	55-64						434	29.21
	65-74						259	17.43
	75+						142	9.56
Marital status	not married						296	19.93
	married						1189	80.07
Level of education	no schooling						682	45.93
	primary education						365	24.58
	secondary education						159	10.71
	tertiary education						279	18.79
Caste	scheduled caste/tribe						380	26.35
	other backward classes						523	36.27
	other						539	37.38
Religion	Hindu						1,021	68.89
	Muslim						101	6.82
	Christian						112	7.56
	Sikh						215	14.51
	Other						33	2.23

Table 2: Overview descriptives. Data from LASI pilot study 2010.

To get a more detailed idea of the sample of the study, specific features of the sample are shortly presented. The respondents' ages vary from 45 to 103 years old and on average, the respondents are around 58 years old. The biggest share has the group of the first age-category from 45 to 54 (43.18%). Moreover, 80% of the individuals are married. Almost half of the sample reports a "no schooling" level of education (around 46%). The second biggest group (24.6%) finished primary education; another 10.7% completed secondary education and the remaining 18.8% reported a degree from high-school or higher. Caste-wise, more than half of the sample reports to be in a lower caste (62.6% sc/st and other backward caste added). Being part of the Hindu religion was claimed for the vast majority of the sample (68.9%), the remaining distribute to Sikh, Christian, Muslim and Other in that order. If the distributions would be calculated by gender, the percentages do not differ much from the percentages of both sexes combined, which means that the sample is relatively balanced, and men and women tend to answer the questionnaire in similar manners.

Next, the descriptive results of the summary index of mental well-being are presented. The scores can possibly range from 0 to 60, however, 46 is the highest score that was calculated from this sample. The mean is 7.84 for both sexes and separated by gender, the mean of the males reports 7.25 and for females 8.39. Overall, a very good mental well-being across all ages and genders could be found. However, females score on average higher on the index. This, in turn, means that females report on average worse mental well-being than men since the scoring works counter-intuitively and a higher score indicates more severe symptomology. The means across the age-categories can be seen in graph 1 below. The aim here is to show whether statistically significant differences in the average mental well-being across age and gender exist.
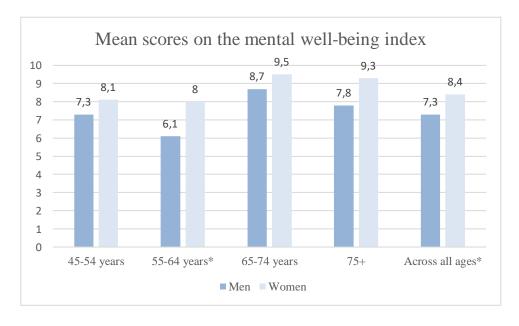

Figure 2:Mean scores on the mental well-being index by gender and age. Higher means indicate worse mental well-being. Data from the LASI pilot study 2010, own calculations.

T-tests showed that there is a statistically significant difference between the two genders with a p-value of 0.008 across all ages as well as in the second age-category (p-value of 0.009) on the 99% significance level; indicated with a star in the graph. Even when lowering the level of significance to 95% or 90%, for the other age groups no statistically significant difference could be found. However, in conclusion, the first hypothesis ("women report on average worse mental well-being than men") can be confirmed.

For the main independent variables, the following distribution has been found; the reported number of close contacts within the family ranges from 0 to 200 with a mean of 8.56. Surprisingly, the median lies only at 4 close contacts for this sample. The distribution for the second option to measure the emotional support tells the following: the vast majority (74.6%) report that they perceive high emotional support within their family and 25.41 % of the respondents perceive low emotional support. For the economic support, only 5.45% report that they did receive financial help from their family within the past 12 months whereas 94.55% did not. As visualization, the distributions of the three main independent variables separated by gender are presented in figure 3. As seen, the shares within one sex are very similar to the numbers for both sexes combined. The biggest difference was found in the distribution of who received economic support. Among men, 6.5% reported financial help, whereas it was only 4.5% among the women. This support the findings from the literature review, that older aged men are economically more supported because the children are expecting to be rewarded with inheritances. It can also mean that women are indirectly economically supported through money the husband receives from family and then uses for both, but they do not specify in the question. After testing for statistical significance with t-tests, no significant differences between the genders for those three variables were found. This leads to the assumption, that there will not be a gender effect in the regression models either.
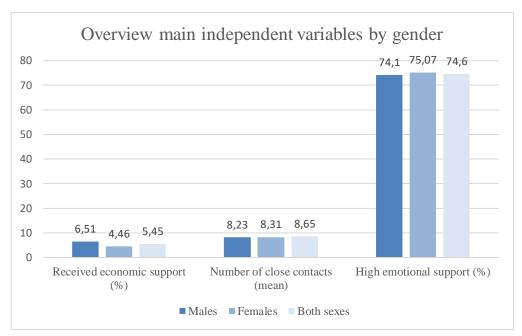
Figure 3: Overview main independent variables by gender. Data from the LASI pilot study 2010, own calculations.

4.2 Regression analysis

In this paragraph, the first four models analysing the relation between the number of close contacts and the mental well-being are presented to test the second hypothesis. In the table, the standardized beta coefficients, as well as the standard errors in brackets, are presented. The unstandardized coefficients do not differ much, and thus standardized ones make the comparability easier.

	Model 1	Model 2	Model 3	Model 4
Number of close contacts	-0.070*	-0.078**	-0.005	-0.007
	(0.012)	(0.012)	(0.012)	(0.012)
Gender (ref: male)		0.077**	0.013	0.015
		(0.431)	(0.437)	(0.44)
Age (ref: 45-54)				
55-64		-0.027	-0.037	-0.034
		(0.509)	(0.493)	(0.496)
65-74		0.095**	0.059	0.059
		(0.612)	(0.599)	(0.600)
75+		0.041	-0.002	0.003
		(0.813)	(0.801)	(0.806)
Level of education (ref: no schooling)				
Primary education			-0.190***	-0.179***
			(0.533)	(0.574)
Secondary education			-0.196***	-0.183***
			(0.694)	(0.752)
Tertiary education			-0.239***	-0.225***
			(0.583)	(0.652)
Maritalstatus (ref: not married)				
Married			-0.081**	-0.073*

				(0.545)	(0.546)
Religion (ref: Hindu)					
Muslim					0.011
					(0.990)
Christian					-0.030
					(0.823)
Sikh					-0.035
					(0.618)
Other					-0.082**
					(1.401)
Caste (ref: other)					
Sc/st					0.037
					(0.616)
Obc					-0.022
					(0.536)
N		1158	1158	1158	1158
r2		0.005	0.022	0.090	0.100

Standardized beta coefficients; standard errors in parentheses
* p<0.05, **p<0.01, *** p<0.001

Table 3: Regression models M1 to M4. Data from the LASI pilot study 2010, own calculations.

Here, the main variable of interest – the number of close contacts – shows a negative significant effect in the first two models. In other words, this means that an increase of one close contact reduces the score on the mental well-being index by 0.07 scale-points. That finding goes in line with the expectation "the more close family ties an individual reports, the better the mental well-being outcome". This effect increases minimally to 0.078 (p<0.01) in the second model when controlling for gender and age (in categories). However, it stops being significant when controlling for the level of education and the marital status. The reason for this might be the decreasing number of cases with a high number of close contacts in the third and fourth model. It can be assumed that not the effect itself becomes insignificant but it is rather explained with fewer cases in the later regression models. Significant effects of further explanatory variables are analysed as follows: the second model shows that being a woman increases the mental well-being score by 0.077 scale points. This indicates that the mental well-being of women is significantly lower than the one of men and goes in line with the descriptive findings. Moreover, being in the age category of 65-74 years increases the score on the mental well-being index by 0.095 units compared to an age between 45 and 54 years. Both the age- and the gender-effect are not significant anymore in either the third or fourth model when the level of education and marital status are included. Both newly added control variables show significant results. The educational levels show the strongest results (p<0.001) and the highest effect sizes. The last models both show similar results, only the effect sizes differ slightly. The final model shows that the higher the level of education, the stronger the significant negative effect on the mental well-being

index. Also, being married reduces the score on the mental well-being index by 0.073 scale-points compared to respondents who are not married (anymore). The category "other" of the variable religion indicates a significant negative effect on the mental well-being score in the fourth model, however, the interpretation is limited. It can be said that belonging to any other religion (or none) among the ones listed in the model reduces the score on the mental well-being compared to being a Hindu. Caste, in turn, shows no significant results. In total the final model explains 10.0% of the variance of the dependent variable, indicating a mediocre explanatory power (R^2=0.10).

The next paragraph will discuss the model with the change of the main independent variables to test the remaining hypotheses: the number of close contacts is replaced by the two remaining main variables of interest: the binary variable indicating low or high emotional support within the family and the binary variable indicating whether the respondent had been receiving economic support from his family. Additionally, interaction effects are included to get more detailed information about the interdependency of the participants' gender and the effect of the respective form of support. To anticipate this and as already indicated in the descriptive findings, there are no statistically significant and systematic differences between the sexes.

	Model 5	Model 6	Model 7	Model 8
High emotional support (ref: low)	-0.301***	-0.297***	-0.269***	-0.259***
	(0.503)	(0.503)	(0.490)	(0.638)
Economic support (ref: no)	0.017	0.019	0.055*	0.089*
	(0.922)	(0.918)	(0.901)	(1.332)
Gender (ref:male)		0.082**	0.025	0.008
		(0.417)	(0.423)	(0.878)
Age (ref: 45-54)				
55-64		-0.039	-0.044	-0.039
		(0.493)	(0.478)	(0.482)
65-74		0.060*	0.036	0.039
		(0.591)	(0.577)	(0.581)
75+		0.034	-0.002	0.003
		(0.792)	(0.781)	(0.787)
Level of education (ref: no schooling)				
Primary education			-0.177***	-0.164***
			(0.517)	(0.561)
Secondary education			-0.189***	-0.175***
			(0.664)	(0.728)
Tertiary education			-0.219***	-0.202***
			(0.553)	(0.628)
Maritalstatus (ref: not married)				
Married			-0.066*	-0.058*
			(0.526)	(0.529)
Religion (ref: Hindu)				
Muslim				0.017
				(0.968)
Christian				-0.031

				(0.789)
Sikh				-0.026
				(0.602)
Other				-0.067*
				(1.352)
Caste (ref: other)				
Sc/st				0.037
				(0.598)
Obc				-0.031
				(0.521)
Gender*emotionalsupport				-0.017
				(0.973)
Gender*economicsupport				-0.043
				(1.793)
N	1.144	1.144	1.144	1.144
r2	0.091	0.104	0.165	0.173

Standardized beta coefficients; standard errors in parentheses
* $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 4: Regression models M5 to M8. Data from the LASI pilot study 2010, own calculations.

For the reversed ill-treatment within the respondents' family, there are highly significant results in each model ($p<0.001$). The significant negative effect decreases with more explanatory variables being added, but, even in the final model perceiving high emotional support reduces the score on the mental well-being index by 0.259 scale-points compared to perceiving low emotional support. In other words, the table shows that high emotional support has a significantly positive effect on the individuals' mental well-being. This goes in line with the expectation of H3. Receiving financial support, on the other hand, shows significant results only in model 7 and 8 while controlling for education which is a well-known predictor for poor mental health. Surprisingly, the effect is positive, which is contradictory to what was expected and the hypothesis 4 cannot be confirmed. This means that, according to model 8, receiving economic support increases the score on the mental well-being scale by around 0.09 scale points ($\beta=0.089$, $p<0.05$) compared to not receiving any financial help. In other words, the mental well-being becomes slightly worse when the respondent is economically supported by his/her family. However, this could also be explained with reverse causality. The relation could also work in the opposite direction: the worse someone's mental well-being is, the more the person requires financial support and, according to the data, also receives financial help from the familial environment. Just as in the previous models, the effect of gender starts being significant and becomes insignificant as soon as the educational levels are added. The same happens with the age-category of 65-74 years old individuals. The significant negative effects of the education categories are slightly weaker than the effects of the same categories in the first set of regression models but still highly significant ($p<0.001$). Interesting here is that the coefficient of having completed the highest education within that sample (tertiary education $\beta=-0.202$, $p<0.001$) is still smaller than the coefficient of

perceiving high emotional support (β=-0.259, p<0.001). This means that in this cross-section, a high emotional support from the family has a bigger benefit on one's mental well-being than having a high education. Again, being married also has a lowering effect on the score on the mental well-being scale, but the effect size of the variable is smaller than in the first set of models. Finally, the last model shows an R^2 of 0.173 which means that the model explains 17.3% of the variance of the dependent variable. Therefore, the variables emotional support measured through reversed ill-treatment and economic support have a lot more explanatory power to predict the score on the mental well-being scale.

5. Discussion

This study on familial support and mental well-being among Indian men and women showed that emotional support – measured through close family ties and being well treated – is positively associated with the mental well-being. As opposed to that, receiving financial support from one's family shows a negative association with the mental well-being. The overall research question was the following: what is the role of familial support on mental well-being outcomes of older-aged adults in India? From the cultural and political background of India, it became clear that the family is the main provider of care in all its different dimensions. That significant role was reflected in the statistical analysis of that research. The amount of close family ties has been found to positively affect the mental well-being outcome of older-aged adults in the study. Further, a high perceived emotional support has been found to be positively associated with mental well-being outcomes. This is especially interesting because the emotional support can only be measured from a one-sided personal perspective. Emotional support is always subjective and can hardly be objectively measured. The number of close contacts gets closer to an objective measure because it consists of comparable numbers; however, it is again subjective whether a contact is considered to be a close one. The high share of multiple-generation households in India might have biased the outcome of the economic support. The total number of individuals reporting that they are being financially supported from their family was very low, which could be the result of misunderstanding and no clear separation of extra monetary support or support in form of other resources as a place to live or food which was not considered in the answers. For the Indian context, there could be a better fit to examine the amount of economic support, but this restriction was due to the dataset. Moreover, the association between receiving economic support and the mental well-being was negative. This is contradictory to the general findings that a stable financial environment usually is positively associated with mental health. However, as outlined in the analysis, the causality of that effect is not given due to the cross-sectional data and therefore needs further research. It can be concluded that the family context can greatly shape the mental well-being of their older members of the family by providing emotional care and treating them well. So far, the family plays a significant role in the mental well-being outcomes of older-aged adults in India. Linking this back to the capital concept of Bourdieu, the social capital of an individual,

referred to as emotional support, does work as a resilience-enhancing factor for mental well-being and positively shapes the outcome.

Except for the economic support, the results from this study join the line of findings from previous studies and general knowledge of the determinants of mental well-being. For example, Aroonsrimorakot et al. (2019) could as well find evidence of a lack of close contacts increasing the chances of suffering from depression. Similar results were found by Christian et al. (2020), associating high social capital with good self-reported health.

A factor which has not been the focus of the study but shows the second-highest effects on the mental well-being of older-aged adults in India is the educational level. Education is a widely known determinant of mental well-being as examined and proved in multiple settings (Bracke et al., 2013; Chevalier & Feinstein, 2006; Silva et al., 2016). The tendency of a higher educational level going along with a stronger positive effect in this study is in line with previous findings. Interestingly, the effect of education fits very well in the mentioned theoretical framework of capitals by Bourdieu. In the sociologists' definition, education is part of an individuals' cultural capital (Bourdieu, 1982), which – as the other sorts of capital – can work as resilience strengthening for the well-being. This leads to the conclusion that of all three measured capitals, high social as well as high cultural capital work best in protecting the mental well-being of an individual. Another interesting finding is that the effect of gender in the regression models only is significant before the variable for education is added. This can be a hint rather for structural inequality between men and women than for an actual gender effect. As outlined earlier, women in India are disadvantaged in many aspects of life, amongst them also the education. They follow lower school and educational paths and also spend less lifetime in schools or academic institutions, which in turn can have a lowering effect on their mental well-being in later life. As well known, education has far-reaching consequences, as it for example determines the occupation. Consequently, with a higher education a better paid job is more likely, which can result in more expenditures on health. Moreover, a higher education can be associated with more awareness of the mental well-being and thus more mindfulness.

Surprisingly, no significant differences in the effects of the support-forms gender-wise could be found. There are two possible reasons for that. First, the number of cases limits the meaningfulness of the statistical analysis and more cases might lead to more insightful results. Second, the CES-D is conceptualized to measure symptoms for depression and anxiety mainly. However, women are more likely to suffer from these disorders, compared to men who are more likely to suffer from autism or ADHD, as found by Sagar et al. (2020). This could have biased the gender-specific outcomes. An additional factor that can shape or influence answers of questions handling mental well-being or feelings and behaviours, in general, is the social desirability. In a country with a strong patriarchal tradition, this means that men could tend to report their feelings or behaviours in a way which is more socially acceptable to project a favourable image of them instead of reporting their actual feeling.

All in all, to study the effect of family support on mental well-being outcomes of older-aged Indians has not been done yet and the results follow the same line as previous studies already show. The study, therefore, fits well into other scientific research and contributes to research in the Indian context, since the findings were for the first time found with the LASI dataset.

5.1 Limitations

The study, however, also shows some limitations. One of the main obstacles is the cross-sectional nature of the data. This only allows finding associations as opposed to find causal relations. It is easier to identify cause and effect when applying a longitudinal data approach. Furthermore, the results would probably be more distinct if the number of cases would be higher. I assume that this would also show some significant gender differences and/or differences in the age-categories.

Regarding the scale for mental well-being, it has to be considered that the scale, conceptualized with a western concept of mental disorders, might not be fully compatible with the Indian concept of mental disorders. The cultural background of India might have led to slightly different results compared to how the means would be in a western country. Some changes or adjustments in the phrasing of the questions could have influenced the way the questions were answered and therefore also the scoring on the scale. As mentioned earlier, the average score on the index is relatively low, which could indicate that it is not the best fit for the Indian context. Gupta et al. (2006), for example, applied a slightly reversed CES-D scale in an Asian-Indian context to improve the sensitivity of the indicator. Four items were dropped and two or the remaining items were modified. These adjustments led the researchers to a 12-item version with the following result: the three-factor, 12-item scale can be used by service providers as a clinical tool to determine the level of depression among caregivers of the elderly in India. Indeed, this gives evidence that the major part of the CES-D scale can be applied in the Indian context, and since the LASI provided 20 items clearly related to the original CES-D scale, no changes in the phrasing could be made in hindsight and all of the items were included in building the index. Compared to other scales which measure the mental well-being, like the SF36 or the K10 scale, the CES-D fitted best in the end. The meaning of items from other scales aim to measure similar feelings or behaviours, but the highest congruence and also the same options to reply were found with the CES-D.

6. Conclusion

The objective of this research was to examine the role of familial support on the mental well-being of adults 45 and older in India. Many close contacts within the family as well as being well-treated within ones' family were found to have a strong positive association with the mental well-being. Opposed to that, economic support from the family tends to lower the mental well-being. The mental well-being was measured with an index scale according to the CES-D. The findings are interesting for future policymakers, as mental disorders are already an important topic in societies and the topic will very

likely rise further. Even though the overall mental well-being examined in this study was rather good among the respondents, the pure high number of Indian people legitimates more focus on mental well-being in that country and on which factors have positive effects on it. This also applies to the trend of ageing populations, in which more and more people will need support in the future, which can increase the pressure on families.

Although actions, treatments and support within families cannot be controlled by the government or policies, public institutions could be strengthened to take some caring responsibility from the family and to generally raise awareness for mental disorders. Current targets set by the Indian government include equal access to health care, reducing stigmatization, and promoting gender equality (Sagar et al., 2020). By deinstitutionalizing mental health care and integrating it into primary health care settings and community-based programs, barriers to mental health care access are reduced and also people in rural areas are more likely to be reached. With the implementation of such programs, "communities and target groups consisting of mostly (female) mental health care patients are gaining the benefits of increasing access, reduced associated mental health care stigma and gender equity" (Gruiskens, 2015, p. 9).

With regard to this study, there is evidence that getting support itself is beneficial for the mental well-being of both women and men, nonetheless in future research, there could be more focus on differences among the genders. This could lead to more insightful results and in turn to more specific policy implications for the government. Moreover, this study is based on a nationally representative dataset. Splitting the dataset per region or between cities could provide more differentiated results. India is very diverse, and it might, therefore, be interesting to study the questions within states or neighbourhoods to eventually find regional differences. The national representative dataset which was used in this thesis is a unique feature, but it is difficult to make statements and suggestions for such a big and diverse country.

7. References

Allen, J., Balfour, R., Bell, R., & Marmot, M. (2014). Social determinants of mental health. *International Review of Psychiatry*, *26*(4), 392–407.

American Psychological Association (2011). Center for Epidemiological Studies-Depression. Retrieved from https://www.apa.org/pi/about/publications/caregivers/practice-settings/assessment/tools/depression-scale

Arokiasamy, P., Bloom, D., Lee, J., Feeney, K., & Ozolins, M. (2012). Longitudinal Aging Study in India: Vision, Design, Implementation, and Preliminary Findings. In J. P. Smith (Ed.), *Aging in Asia: Findings from new and emerging data initiatives. Panel on Policy Research and Data Needs to Meet the Challenge of Aging in Asia* (pp. 36–76). Washington, D.C: National Academies Press.

Aroonsrimorakot, S., Laiphrakpam, M., Metadilogkul, O., & Konjengbam, S. (2019). Ageing, Social Isolation, Loneliness, Health, Social Care and Longevity: Insights from Case Studies in Thailand and India. *Ageing International*, *44*(4), 371–384.

Arora, R. U. (2012). Gender inequality, economic development and globalization: a state level analysis of India. *Journal of developing areas*, *46*(1), 147–164.

Baron, E. C., Davies, T., & Lund, C. (2017). Validation of the 10-item Centre for Epidemiological Studies Depression Scale (CES-D-10) in Zulu, Xhosa and Afrikaans populations in South Africa. *BMC Psychiatry*, *17*(1), 6.

Berkman, L. F., Sekher, T. V., Capistrant, B., & Zheng, Y. (2012). Social Networks, Family, and Care Giving Among Older Adults in India. In J. P. Smith (Ed.), *Aging in Asia: Findings from new and emerging data initiatives. Panel on Policy Research and Data Needs to Meet the Challenge of Aging in Asia* (pp. 261–278). Washington, D.C: National Academies Press.

Bourdieu, P. (1982). *Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft.* Frankfurt am Main: Suhrkamp Taschenbuch Verlag.

Bracke, P., Pattyn, E., & dem Knesebeck, O. von (2013). Overeducation and depressive symptoms: Diminishing mental health returns to education. *Sociology of Health & Illness*, *35*(8), 1242–1259.

Brown, G. C. (2015). Living too long: The current focus of medical research on increasing the quantity, rather than the quality, of life is damaging our health and harming the economy. *EMBO Reports*, *16*(2), 137–141

Burleson, B. R. (2003). The experience and effects of emotional support: What the study of cultural and gender differences can tell us about close relationships, emotion, and interpersonal communication. *Personal relationships*, *10*, 1–23.

Byambasuren, S., & Tsetsegdary, G. (2005). Mental health in Mongolia. *International Psychiatry : Bulletin of the Board of International Affairs of the Royal College of Psychiatrists*, *2*(8), 9–12.

Carpiano, R. M. (2006). Toward a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help? *Social Science & Medicine (1982)*, *62*(1), 165–175.

Chaudhuri, A., & Roy, K. (2009). Gender Differences in Living Arrangements Among Older Persons in India. *Journal of Asian and African Studies*, *44*(3), 259–277.

Cheung, C. K., & Bagley, C. (1998). Validating an American scale in Hong Kong: The Center for Epidemiological Studies Depression Scale (CES-D). *The Journal of Psychology*, *132*(2), 169–186.

Chevalier, A., & Feinstein, L. (2006). Sheepskin or Prozak. The causal effect of education on mental health. *Centre for the Economics of Education*.

Chokshi, M., Patil, B., Khanna, R., Neogi, S. B., Sharma, J., Paul, V. K., & Zodpey, S. (2016). Health systems in India. *Journal of Perinatology : Official Journal of the California Perinatal Association*, *36*(s3), 9-12.

Christian, A. K., Sanuade, O. A., Okyere, M. A., & Adjaye-Gbewonyo, K. (2020). Social capital is associated with improved subjective well-being of older adults with chronic non-communicable disease in six low- and middle-income countries. *Globalization and Health*, *16*(1), 2.

Cramm, J. M., Bornscheuer, L., Selivanova, A., & Lee, J. (2015). The Health of India's Elderly Population: A Comparative Assessment Using Subjective and Objective Health Outcomes. *Journal of Population Ageing*, *8*(4), 245–259.

Dandona, L., Dandona, R., Kumar, G. A., Shukla, D. K., Paul, V. K., Balakrishnan, K., . . . Swaminathan, S. (2017). Nations within a nation: Variations in epidemiological transition across the states of India, 1990–2016 in the Global Burden of Disease Study. *The Lancet*, *390*(10111), 2437–2460.

Deere, C. D., Oduro, A. D., Swaminathan, H., & Doss, C. (2013). Property rights and the gender distribution of wealth in Ecuador, Ghana and India. *The Journal of Economic Inequality*, *11*(2), 249–265.

Dey, S., Nambiar, D., Lakshmi, J. K., Sheikh, K., & Reddy, K. S. (2012). Health of the elderly in India: Challenges of access and affordability. In J. P. Smith (Ed.), *Aging in Asia: Findings from new and emerging data initiatives. Panel on Policy Research and Data Needs to Meet the Challenge of Aging in Asia* (pp. 371–386). Washington, D.C: National Academies Press.

Dhar, D., Jain, T., & Jayachandran, S. (2018). Intergenerational Transmission of Gender Attitudes: Evidence from India. *The Journal of Development Studies*, *55*(12), 2572–2592.

Garg, K., Kumar, C. N., & Chandra, P. S. (2019). Number of psychiatrists in India: Baby steps forward, but a long way to go. *Indian Journal of Psychiatry*, *61*(1), 104–105.

Giesbers, S. A. H., Tournier, T., Hendriks, L., Hastings, R. P., Jahoda, A., & Embregts, P. J. C. M. (2019). Measuring emotional support in family networks: Adapting the Family Network Method for individuals with a mild intellectual disability. *Journal of Applied Research in Intellectual Disabilities : JARID*, *32*(1), 94–105.

Grenade, L., & Boldy, D. (2008). Social isolation and loneliness among older people: issues and future challenges in community and residential settings. *Australian Health Review*, *32*(8), 468–478.

Gruber, D., & Böhm, M. (2012). Pierre Bourdieus Soziologie: Ein Wegweiser für die Sozialpsychiatrie? *SWS-Rundschau*, *52*, 19–37.

Gruiskens, J. (2015). *Stigmatization processes in a mental health care setting in Manipal, India: An ethnographic study of the relationship between stigmatization and help-seeking behaviour of mental health care patients*. University of Maastricht, Maastricht and Manipal. Retrieved from https://www.researchgate.net/publication/281845793_Global_Health_Master_Thesis_Stigmatizatio n_of_Mental_Health_Care_in_Manipal_India

Gupta, R., Punetha, D., & Diwan, S. (2006). The revised CES-D scale for caregivers of the elderly in India. *International J. Ageing and Human Development*, *62*(1), 61–78.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*, *7*(7), e1000316.

Irudaya, R. S., & Balagopal, G. (2017). Caring India: An Introduction. In S. Irudaya Rajan & G. Balagopal (Eds.), *Elderly Care in India* (pp. 1–36). Singapore: Springer Singapore.

Jadhav, A., Sathyanarayana, K. M., Kumar, S., & James, K. S. (2013). Living Arrangements of the Elderly in India: Who lives alone and what are the patterns of familial support? Retrieved from https://iussp.org/en/event/17/programme/paper/2887

Karim, J., Weisz, R., Bibi, Z., & ur Rehman, S. (2015). Validation of the Eight-Item Center for Epidemiologic Studies Depression Scale (CES-D) Among Older Adults. *Current Psychology*, *34*(4), 681–692.

Khandelwal, S. K., Jhingan, H. P., Ramesh, S., Gupta, R. K., & Srivastava, V. K. (2004). India mental health country profile. *International Review of Psychiatry (Abingdon, England)*, *16*(1-2), 126–141.

König, H. (2014, October 9th). Verstoßen und diskriminiert. Indiens Witwen fristen Dasein am Rande der Gesellschaft. *Junge Welt*. Retrieved from http://www.ag-friedensforschung.de/regionen/Indien1/witwen.html

Kumar, S., & Kumar, K. A. (2019). Living Arrangement and Economic Dependency among the Elderly in India: A Comparative Analysis of EAG and Non EAG States. *Ageing International*, *44*(4), 352–370.

Lee, A. E. Y., & Chokkanathan, S. (2008). Factor structure of the 10-item CES-D scale among community dwelling older adults in Singapore. *International Journal of Geriatric Psychiatry*, *23*(6), 592–597.

Lee, J., Shih, R., Feeney, K., & Langa, K. M. (2014). Gender disparity in late-life cognitive functioning in India: Findings from the longitudinal aging study in India. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, *69*(4), 603–611.

Li, W. D.H. (2013). East Asian welfare model refocus? A case study on economic support for the elderly living alone in Taiwan. *International Journal of Social Welfare*, *22*(3), 260–268.

Lindgren, B. (2016). *The Rise in Life Expectancy, Health Trends among the Elderly, and the Demand for Health and Social Care* (Working Paper No. 142). Stockholm. Retrieved from https://www.konj.se/english/publications/working-papers/working-paper/2016-03-01-the-rise-in-life-expectancy-health-trends-among-the-elderly-and-the-demand-for-health-and-social-care.html

Maharana, B., & Ladusingh, L. (2014). Gender Disparity in Health and Food Expenditure in India among Elderly. *International Journal of Population Research*, *2014*(2), 1–8.

Murphy, A., Palafox, B., Walli-Attaei, M., Powell-Jackson, T., Rangarajan, S., Alhabib, K. F., McKee, M. (2020). The household economic burden of non-communicable diseases in 18 countries. *BMJ Global Health*, *5*(2).

Narain, J. P. (2016). Public Health Challenges in India: Seizing the Opportunities. *Indian Journal of Community Medicine : Official Publication of Indian Association of Preventive & Social Medicine*, *41*(2), 85–88.

Ohlan, R. (2013). Pattern of Regional Disparities in Socio-economic Development in India: District Level Analysis. *Social Indicators Research*, *114*(3), 841–873.

Patel, V., & Prince, M. (2001). Ageing and mental health in a developing country: who cares? Qualitative studies from Goa, India. *Psychological Medicine*, *31*, 29–38.

Patel, V., Xiao, S., Chen, H., Hanna, F., Jotheeswaran, A. T., Luo, D., Saxena, S. (2016). The magnitude of and health system responses to the mental health treatment gap in adults in India and China. *The Lancet*, *388*(10063), 3074–3084.

Radloff, L. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401.

Rohde, N., Tang, K. K., Osberg, L., & Rao, P. (2016). The effect of economic insecurity on mental health: Recent evidence from Australian panel data. *Social Science & Medicine (1982)*, *151*, 250–258.

Roy, K., & Chaudhuri, A. (2008). Influence of socioeconomic status, wealth and financial empowerment on gender differences in health and healthcare utilization in later life: Evidence from India. *Social Science & Medicine (1982)*, *66*(9), 1951–1962.

Sagar, R., Dandona, R., Gururaj, G., Dhaliwal, R. S., Singh, A., Ferrari, A., Dandona, L. (2020). The burden of mental disorders across the states of India: The Global Burden of Disease Study 1990–2017. *The Lancet Psychiatry*, *7*(2), 148–161.

Saikia, N., Moradhvaj, & Bora Jayanta Kumar (2016). Gender Difference in Health-Care Expenditure: Evidence from India Human Development Survey. *PloS One*, *11*(7).

Santini, Z. I., Koyanagi, A., Tyrovolas, S., Haro, J. M., Fiori, K. L., Uwakwa, R., . . . Prina, A. M. (2015). Social network typologies and mortality risk among older people in China, India, and Latin America: A 10/66 Dementia Research Group population-based cohort study. *Social Science & Medicine (1982)*, *147*, 134–143.

Senapati, C. (2013). *Indian Public Employment Policy for Weaker Sections: A Case of SC/ST.: Working paper 14*. Retrieved from https://d1wqtxts1xzle7.cloudfront.net/31798426/WP14_Indias_Public_Employment_policy_for_Weaker_Sections.pdf?1377731929=&response-content-disposition=inline%3B+filename%3DWP14_Indias_Public_Employment_policy_for.pdf

Silva, M., Loureiro, A., & Cardoso, G. (2016). Social determinants of mental health: a review of the evidence.: Silva, M., Loureiro, A., & Cardoso, G. *The European Journal of Psychiatry*, *30*(3), 259-292.

Silverstein, M., Conroy, S. J., & Gans, D. (2012). Beyond solidarity, reciprocity and altruism: Moral capital as a unifying concept in intergenerational support for older people. *Ageing and Society*, *32*(7), 1246–1262.

Smarr, K. L., & Keefer, A. L. (2011). Measures of depression and depressive symptoms: Beck Depression Inventory-II (BDI-II), Center for Epidemiologic Studies Depression Scale (CES-D), Geriatric Depression Scale (GDS), Hospital Anxiety and Depression Scale (HADS), and Patient Health Questionnaire-9 (PHQ-9). *Arthritis Care & Research*, *63*, 454-466.

Snowden, L. R. (2007). Explaining mental health treatment disparities: Ethnic and cultural differences in family involvement. *Culture, Medicine and Psychiatry*, *31*(3), 389–402.

Snowdon, J. (2019). Indian suicide data: What do they mean? *The Indian Journal of Medical Research*, *150*(4), 315–320.

Srinivasan, K., & Kumar, S. (1999). Economic and Caste Criteria in Definition of Backwardness. *Economic and Political Weekly*, *42/43*(34), 3052–3057.

The Program on Global Aging, Health, and Policy (2015). Longitudinal Ageing Study in India. Retrieved from https://g2aging.org/?section=study&studyid=36

The World Bank Group (2019). Physicians (per 1,000 people) - India, Nicaragua, Bolivia. Retrieved from https://data.worldbank.org/indicator/SH.MED.PHYS.ZS?locations=IN-NI-BO

United Nations, Departement of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019, Volume II: Demographic Profiles (ST/ESA/SER.A/427). India.* Retrieved from https://population.un.org/wpp/Graphs/1_Demographic%20Profiles/India.pdf

United Nations, Departement of Economic and Social Affairs, Population Division (2020). *World Population Ageing 2019*. (ST/ESA/SER.A/444). New York. Retrieved from https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un_2019_worldpopulationageing_report.pdf

United Nations, Economic and Social Affairs (2016). *Household Size and Composition around the World 2017*. Retrieved from https://www.un.org/en/development/desa/population/publications/pdf/ageing/household_size_and_composition_around_the_world_2017_data_booklet.pdf

Urmersbach, B. (2020). Europäische Union: Lebenserwartung bei der Geburt in den Mitgliedsstaaten im Jahr 2018 (in Jahren). Retrieved from https://de.statista.com/statistik/daten/studie/954/umfrage/lebenserwartung-bei-geburt-in-ausgewaehlten-laendern-der-europaeischen-region/

Van Dam, N. T., & Earleywine, M. (2011). Validation of the Center for Epidemiologic Studies Depression Scale--Revised (CESD-R): Pragmatic depression assessment in the general population. *Psychiatry Research*, *186*(1), 128–132.

Weinstein, N., & Stone, D. N. (2018). Need depriving effects of financial insecurity: Implications for well-being and financial behaviors. *Journal of Experimental Psychology*, *147*(10), 1503–1520.

World Health Organization (2017). *Mental health of older adults*. Retrieved from https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults

World Health Organization and Calouste Gulbenkian Foundation (2014). *Social determinants of mental health*. Geneva.

Yellowlees, P., & Chan, S. (2015). Mobile mental health care: an opportunity for India. *The Indian Journal of Medical Research*, *142*(4), 359–361.