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Working Paper

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GLO Discussion Paper, No. 1466

Provided in Cooperation with:

Global Labor Organization (GLO)

Suggested Citation: Roychowdhury, Punarjit (2024) : Social Identity and Depression Among the Elderly: Evidence from India, GLO Discussion Paper, No. 1466, Global Labor Organization (GLO), Essen

This Version is available at:

<https://hdl.handle.net/10419/300592>

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Social Identity and Depression Among the Elderly: Evidence from India^{*}

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July 30, 2024

Abstract

The paper examines the prevalence of depression and clinical depression among the elderly in India across groups with distinct social identities, where social identities are defined by caste and religious affiliations. Using nationally representative data, the study reveals notable disparities. Compared to upper caste-Hindus (UC-Hindus), disadvantaged groups like Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs) experience more depression. Further, SCs and OBCs are also more likely to be clinically depressed than UC-Hindus; however, there is no significant difference in clinical depression likelihood between UC-Hindus and STs. The gaps in depression and clinical depression across social groups diminish when I control for socioeconomic status and disappear with further adjustments for life conditions and experiences, including childhood circumstances, experiences of discrimination, neighborhood characteristics, housing conditions and perceived deprivation. Surprisingly, after accounting for these factors, STs demonstrate the lowest likelihood of clinical depression among all groups. While this could be interpreted as suggesting that STs inherently have better mental health than others, a more plausible explanation is that they under-report the symptoms used in clinical depression diagnosis.

JEL: I14, I15, I31, J14, O12

Keywords: Depression, India, Mental Health, Social Identity

^{*}All remaining errors are my own.

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1 Introduction

Population in the developing world is aging rapidly. The elderly population in low- and middle-income countries (LMICs) is projected to increase from about 500 million in 2019 to over 1.2 billion in 2050 (UN DESA (United Nations Department of Economic and Social Affairs) (2019)). According to the World Health Organization (WHO), by 2050, two-thirds of the world’s population over 60 years will live in LMICs.¹ Many LMICs are experiencing rapid population aging at a faster rate than in Western Europe and North America (Tan (2022)). Looking to the future, population aging is expected to boom in large LMICs such as India and China and slow in the already-aged countries of Western Europe (United Nations, Department of Economic and Social Affairs, Population Division (2017)).

Research indicates that an inevitable consequence of a rapidly aging population in LMICs is the rise in mental health problems like depression and loneliness. This is because “[t]he elderly in low- and middle-income countries appear to be particularly vulnerable to poor mental health...stark increases in depressive symptoms at older ages [are observed] in several low- and middle-income countries” (Banerjee et al. (2023), p. 198).² Given this, mental health issues among the elderly population in developing countries have recently started receiving significant attention from medical researchers, social scientists, and policymakers.

Important papers that have examined mental health issues pertaining to the elderly population in developing countries over the last few years include Alzua et al. (2024); Devikrishna et al. (2024), Pan (2024), Banerjee et al. (2023), McKelway et al. (2023), Muhammad et al. (2023), Paul et al. (2023), Kim et al. (2023), Souza et al. (2023), Bando et al. (2022), Maramula et al. (2021), Srivastava et al. (2021), Saenz et al. (2020), and Beutel et al. (2019) among several others. While some of these have focused on the measurement of the prevalence of mental illnesses among the elderly, others have explored its potential causes and consequences and evaluated the efficacy of the policies that could be potentially used to address such illnesses (e.g., cognitive behavioral therapy, cash transfer policies, etc.).³ Banerjee et al. (2023) provide an excellent review of this literature, highlighting gaps in current research and outlining priorities for future studies, emphasizing that “much work remains to be done” (p. 198).

The present paper contributes to the growing body of literature by investigating an important yet unexplored issue concerning the mental health of the elderly in India, a country

¹<https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

²As noted by Banerjee et al. (2023), this is in sharp contrast to the United States where the prevalence of symptoms of depression does not increase with age.

³This literature is nested within the broader literature that investigates mental health of individuals in low- and middle-income settings. See Ridley et al. (2020) for an excellent overview.

in which the proportion of the elderly population (aged 60 and above) is projected to double by 2050 to 19% from 9% in 2015 (United Nations, Department of Economic and Social Affairs, Population Division (2019)). Specifically, utilizing data from a large nationally representative survey, it estimates differentials in the prevalence of depression and clinical (or major) depression among the elderly across various groups with distinctive social identities, where social identities are defined by caste and religious affiliations.⁴ Further, it examines the potential drivers of these differentials.

While there exist some studies on depression among the elderly in India (see, e.g., Devikrishna et al. (2024), McKelway et al. (2023)), none have focused on understanding the differentials across groups with distinct social identities. Conversely, the couple of studies that have looked at the linkage between caste and religion and mental health (Johri and Anand (2022); Gupta and Coffey (2020)), do not focus on the elderly population. Further, constrained by data limitations, they cannot explore the underlying mechanisms, are not able to encompass all major social groups, and are restricted to only a few Indian cities or states. Addressing this research gap is crucial as it hinders a comprehensive understanding of the extent and determinants of mental health disparities among the elderly from different social groups. Such insights are essential for policymakers to develop inclusive and effective mental healthcare policies and interventions tailored to diverse segments of society.

It is widely known that the “Indian society is characterised by persistent and pervasive inter-group inequality in economic life” (Thorat and Newman (2007), p. 4121). It is generally found that upper caste-Hindus are significantly better off than other social groups across several economic dimensions, including educational and occupational attainment (Deshpande and Ramachandran (2019); Munshi and Rosenzweig (2006)), wage earnings (Duraisamy and Duraisamy (2017)), income (Desai and Dubey (2012)), consumption (Kijima (2006)), wage employment (Siddique (2011), Thorat and Attewell (2007)), employment aspirations (Deshpande and Newman (2007)), self-employment and ownership of enterprises (Deshpande and Sharma (2016); Iyer et al. (2013)), life satisfaction (Spears (2016)), child health (Ramachandran and Deshpande (2023)), and non-cognitive skills (Dasgupta et al. (2023)). While some of this inter-group inequality is attributable to historical factors and institutional failure, the existing literature asserts that a major part of this stems from social exclusion and discrimination.⁵

⁴As noted by Ramachandran and Deshpande (2023), caste and religion are the two main cleavages in the Indian society.

⁵In addition to the papers that focus on discrimination while analyzing gaps across social groups, there are some studies like Khamis et al. (2012) that focus on other interesting aspects such as *Sanskritization* (or emulation of high caste groups by the disadvantaged caste groups) while examining disparities across social groups

Some studies, of course, indicate that affirmative action policies introduced in the 1950s to provide reservations in national and state legislatures, local governments, higher education institutions, and government jobs for disadvantaged social groups have had positive effects on poverty reduction, educational attainment, and provision of public goods (Cassan (2019); Chin and Prakash (2011)). However, Dasgupta et al. (2023) point out that the “impacts are not unequivocal” (p. 473). For instance, a recent study suggests that affirmative action programs for Scheduled Castes in local governments may have adverse effects on the provision of public goods and educational outcomes (Pandey and Pandey (2018)). Moreover, findings from a study by Deshpande (2019) suggest that affirmative action has the potential of increasing societal discrimination against these social groups. This is because such policies stigmatize the low-ranked groups as incompetent. As a result, despite policy efforts aimed at addressing inequalities, significant disparities persist across social groups.

The persistent economic disparities across social groups can translate into disparities in mental health. Specifically, disadvantaged social groups could experience worse mental health outcomes compared to upper-caste Hindus. Research consistently shows that socio-economic status (SES) causally impacts mental well-being, with higher SES associated with better mental health and lower SES linked to poorer outcomes (see, e.g., Alem and Tato (2023), Alloush and Bloem (2022), Christian et al. (2019), Adhvaryu et al. (2019), Lindqvist et al. (2020), Apouey and Clark (2015), Kuhn et al. (2009) among others). As discussed in Ridley et al. (2020), there are several potential pathways through which SES could affect mental health, including stress, environmental factors, physical health, early life conditions, neighborhood violence and crime, social shame, isolation, and feelings of relative deprivation.⁶ Variations in these factors across different social groups due to differing SES levels can contribute significantly to disparities in mental health outcomes among these groups.

However, it is important to note that variations in these factors, independent of SES, could also directly contribute to disparities in depression across social groups. For instance, it is plausible that individuals from lower-ranked social groups, despite belonging to similar SES categories, may experience higher levels of depression due to factors such as adverse childhood experiences, heightened social shame related to their social identity, feelings of deprivation, and limited social connections.⁷ This is especially plausible because of the stigma associated with being a member of a low-ranked social group.

⁶See Haushofer and Fehr (2014) and Ridley et al. (2020) for comprehensive reviews of the literature on poverty and mental health.

⁷Indeed, studies that look at the effect of race and health show disparities in health across the blacks and whites while partly can be attributed to the differences in stress experienced by the two communities induced by disparities in SES, differences in stress levels experienced by these communities because of the differences in racial identity itself also directly affects the health gap (Williams et al. (1997)).

To examine the research question, I use data from the first wave of the Longitudinal Aging Study in India (LASI), which is the largest national health and retirement study in the world (Bloom et al. (2021)). The survey, administered between 2017 and 2019, provides vital information on demography, chronic health conditions, symptom-based health conditions, functional health, mental health (cognition and depression), household economic status, healthcare utilization and health insurance, family and social networks, work and employment, retirement and life expectations on adults aged 45 and above across all the States and Union Territories of India.

In the LASI, two internationally validated and comparable tools are used to assess depressive symptoms and episodes: Centre for Epidemiologic Studies Depression (CES-D) scale (Radloff (1977)) and the Composite International Diagnostic Interview - Short Form (CIDI-SF) (Kessler et al. (1998)). The CES-D scale serves as a screening tool for assessing depressive symptoms in the general population; it measures the frequency of depressive events and ideas over a one-week period. The CIDI-SF scale, on the other hand, was developed to produce a psychiatric diagnosis of major or clinical depression based on persistent depressive symptoms over the longer term (Devikrishna et al. (2024); Choung et al. (2022)).

My core outcome variables include the number of symptoms of depression that individuals are experiencing as per the CESD scale (CES-D score), and the number of symptoms of major depression (which is a count of dysphoric mood or anhedonia symptoms) that individuals are experiencing as per the CIDI-SF scale (CIDI-SF score). Further, following previous literature, I create binary indicators as additional outcome variables based on my core outcome variables that indicate whether or not an individual is depressed and whether or not an individual is clinically depressed based on individuals' CES-D and CIDI-SF scores, respectively. ⁸

As previously noted, this paper uses caste and religious affiliations to categorize social groups. These groups include upper caste-Hindus (UC-Hindu), Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), and Non-Hindu non-SC-ST-OBC (Others). The UC-Hindus, comprising non-SC-ST-OBC Hindus, are traditionally perceived as occupying the highest rank in the caste hierarchy.⁹ They are the socioeconomically dominant group in India. The SCs and STs—often described as *Dalit* meaning ‘oppressed’ and *Adivasi* meaning ‘indigenous people’ respectively—are among the most socioeconomically disadvantaged groups and receive preferential affirmative action, for which purpose they are

⁸Some papers use the terms *likely* depressed and *likely* clinically depressed instead of depressed and clinically depressed respectively (Banerjee et al. (2023))

⁹The usage of the term ‘upper caste’ (UC) is neither an endorsement of the caste hierarchy, nor of the implicit association of superiority or inferiority that comes with this nomenclature. It is a descriptive term that is widely understood.

listed in a government schedule (hence called the Scheduled Castes and Scheduled Tribes). The OBCs is a group of intermediate to low-ranked castes and communities, which also receive affirmative action since 1992 in central government services, and since 2006 in central and private institutes of higher education. The ‘Others’ category encompasses members of all religious communities except Hindus who do not belong to the SC, ST, and OBC groups. Individuals from these religious communities who identify as SC, ST, or OBC are included in the respective social groups bearing those names.

My findings indicate, compared to UC-Hindus, SCs, STs and OBCs have a higher CES-D score, and are more likely to be depressed. The difference in the CES-D scores, as well as the likelihood of depression between UC-Hindus and each of these social groups, are statistically and economically significant. Members of other religions who are not a part of SC-ST-OBC groups also seem to have a higher CES-D score and are more likely to be depressed than UC-Hindus; however, the differences in these outcomes are not statistically significant. Additionally, I find that compared to UC-Hindus, SCs and OBCs have a higher CIDI-SF score and are more likely to meet the criteria of clinical depression. The difference in outcomes between UC-Hindus and each of these social groups is large and statistically significant. The difference in CIDI-SF scores and the likelihood of being clinically depressed between the UC-Hindus and STs, as well as the members of other religions, are, however, statistically and economically insignificant.

The gaps in depression and clinical depression diminish substantially when I include controls for SES. For example, controlling for SES causes the gaps in CES-D scores and the likelihood of depression between UC-Hindus and the disadvantaged social groups to fall by more than 50%. However, the gaps are still not economically insignificant. The gaps, however, disappear when I account for life conditions and experiences including childhood circumstances, experiences of discrimination, neighborhood characteristics, housing conditions, and perceived deprivation.

Notably, these adjustments reveal a surprising finding: after accounting for these factors, STs show the lowest likelihood of clinical depression among all groups. This could imply that STs inherently have better mental health than others. Alternatively, this could suggest that elderly STs underreport the symptoms used in clinical depression diagnosis. The second possibility is more likely because the CIDI-SF survey tool is lengthy and quite complex. Using such a tool to assess clinical depression symptoms in elderly populations accurately presents considerable challenges in general. These challenges are likely amplified when attempting to assess clinical depression among elderly STs, who are among the most marginalized communities in India.

However, to examine this issue in more depth, I compare life satisfaction across social

groups. Mental health is widely known to be an important predictor of life satisfaction. Accounting for SES and other life conditions and experiences, I find no evidence that STs exhibit higher life satisfaction than other groups. This suggests that elderly STs under-report symptoms used in clinical depression rather than having inherently better mental health.

The rest of the paper unfolds as follows. In Section 2, I discuss the context. In Section 3, I discuss the data and empirics. Section 4 presents the results. The last section concludes.

2 Context

2.1 Depression Among the Elderly in India

With the development of improved treatment regimens, better life-saving drugs, and better prevention of infectious diseases, life expectancy in India has increased substantially over the last two decades. From 62.3 and 63.9 years in 2001–2005, life expectancy for males and females increased to 67.3 and 69.6 years, respectively, in 2011–2015. The projected life expectancy for males and females during 2012–2025 is 69.8 and 72.3 years, respectively (Goswami and Deshmukh (2021)). The overall life expectancy in India in 2023 was 70.42 years, a 0.33% increase from 2022.

The rise in life expectancy has led to a gradual increase in the elderly population in India. The older population of India is currently the world’s second-largest: 140 million people aged 60 and above (Bloom et al. (2021)). Moreover, the average annual growth rate of the older population is almost three times higher than the overall population growth rate of India. The underlying population dynamics indicate that the proportion of India’s population aged 60 and above will more than double by 2050; this will result in an older population of more than 320 million, almost equal to the entire (current) population of the USA.

Banerjee et al. (2023) note that the elderly population in LMICs like India are particularly vulnerable to psychological distress and depression. In particular, they find that 26% of men and 31% of women aged 61–70 in India have symptoms indicating a high likelihood of depression. A recent systematic review and meta-analysis shows that the prevalence of depression among the elderly population in India was 34.4% (Pilania et al. (2019)), which is slightly higher than the estimates of Banerjee et al. (2023). Other recent studies have revealed that the prevalence rates for depression in the community samples of the elderly in India vary between 38% and 78% (see. e.g., Geetha et al. (2024), Soni et al. (2024), Debnath et al. (2023), Vincent et al. (2020)).

Additionally, studies document many of the elderly feel lonely and socially isolated, despite the common presumption that most elderly in these countries live with their family.

According to [Kumar et al. \(2022\)](#), the prevalence of social isolation among the elderly in India is almost 34%, and research evidence cites a rising trend of this phenomenon. [Grover et al. \(2019\)](#) find almost 55.4% of elderly Indians report experiencing loneliness.

Yet, depression and loneliness among the elderly remain a neglected issue in India. Although a number of elderly-friendly schemes and programs have been launched in India (e.g., the Ministry of Health & Family Welfare launched the National Programme for the Health Care of Elderly during 2010–11 to provide accessible, affordable, and high-quality long-term, comprehensive, and dedicated care services to the elderly), it is often claimed that the policies lack the zeal to deal with the problem of depression and loneliness among the elderly ([Goswami and Deshmukh \(2021\)](#)). Additionally, the number of serious scientific studies that have been conducted on this topic is also very limited, resulting in a lack of proper evidence of the burden of elderly depression and loneliness, and its causes and consequences.

2.2 Social Groups in India

India, as a diverse and multi-cultural nation, boasts a wide array of religions and cultures. The Hindu faith is the predominant religion, with approximately 79.8% of the population adhering to it according to the 2011 Census of India. Alongside Hindus, significant communities include Muslims (14.2% of the population), Christians (2.3% of the population), Sikhs (1.7% of the population), and various other religious groups. Each of these communities has unique social identities, cultural practices, customs, and norms.

The Hindu community displays significant internal diversity based on caste distinctions. The caste system operates as a social hierarchy, with classes delineated by hereditary endogenous groups known as jatis or castes. This system, believed to have origins dating back 3000 years, borrowed its name from the Portuguese term ‘casta’, which conveys the idea of breed, race, or kind. In Indian contexts, terms such as varna, jati, jat, biradri, and samaj are used interchangeably with ‘caste’, referring to structured groups of varying sizes and scope. Varna, which translates to ‘color’, represents broad categories encompassing multiple castes, while other terms describe specific castes and their subdivisions, often referred to as sub-castes. The caste system comprises several major divisions (varnas): Brahmins (priests), Kshatriyas (warriors), Vaisyas (merchants), Sudras (servants), and Untouchables (outcasts assigned to menial jobs).

The untouchables constitute the modern-day SCs. The Government of India Act, 1935, for the first time, provided for notification of socially disadvantaged communities as SCs. The constitution of India, which came into effect in 1950, abolished untouchability and provided several special safeguards for the SCs. The criterion followed for inclusion of a community

in the list of SCs is extreme social, educational and economic backwardness arising out of the traditional practice of untouchability.

In addition to Hindus, SCs also include Sikhs and Buddhists since these religions have a caste system. Other religions are not included in SC category as traditionally, it is understood that these religions are egalitarian and do not advocate caste or any other form of stratification.^[10] However, across all major national surveys, some Muslims and Christians identify themselves as SCs. They are possibly Dalit converts out of Hinduism, who not only self-identify as Dalit Muslims and Dalit Christians, but also have been demanding official SC status and access to affirmative action, which has been denied by the courts (Ramachandran and Deshpande (2023)).

STs in India refer to the various indigenous communities or tribes that are recognized by the government for special protection and assistance. The criterion followed for the specification of a community, as STs are indications of primitive traits, distinctive culture, geographical isolation, shyness of contact with the community at large, and backwardness. More than 650 tribes that make up the Scheduled Tribes speak a multitude of languages. They are also religiously diverse, with some following animism while others have adopted Hinduism, Islam, or Christianity. The SCs and STs constitute 25% of India's population, according to 2011 census. However, other surveys suggest that the share of SCs and STs in India's population is significantly higher. For instance, the Pew Research Center religion survey conducted in 2019 suggests SCs and STs constitute 34% of India's population.^[11]

The OBC category was created as a new category in independent India. It includes communities that are economically and socially marginalized but are not a part of the SC or ST groups. OBCs, like STs, include members from all religions. The OBCs are entitled to 27% reservations in public sector employment and higher education, while the SCs and STs are entitled to 15% and 7.5% reservations. The 2011 census did not include measurements for OBC. However, as per the estimates of the 2006 National Sample Survey, OBCs made up 41% of the population.

¹⁰Although there is much debate on this with some scholars showing that Islam and Christianity in South Asia also display caste-like cleavages and groups at the bottom of the hierarchy (see Jodhka and Shah (2010); Deshpande and Bapna (2008)).

¹¹<https://www.pewresearch.org/religion/2021/06/29/religion-in-india-tolerance-and-segregation/>

3 Data and Methodology

3.1 Data

3.1.1 Longitudinal Aging Study in India (LASI) 2017-19

I use data from the LASI 2017-19 (Chien et al. (2023)). The LASI is the sister study of the United States Health and Retirement Studies (HRS). It is a nationally representative survey conducted by the International Institute for Population Sciences (IIPS) in collaboration with the Harvard T.H. Chan School of Public Health and the University of Southern California (USC). LASI provides vital information on demography, chronic health conditions, symptom-based health conditions, functional health, mental health (cognition and depression), household economic status, healthcare utilization and health insurance, family and social networks, work and employment, retirement and life expectations on 72,250 older adults aged 45 and above across all the States and Union Territories of India.

LASI has a multistage stratified cluster sampling design and plans to follow the sample biennially over the next 25 years. The survey uses a face-to-face Computer-Assisted Personal Interview (CAPI) for respondent interviews and data collection. The individual response rates of the survey ranges from 96% in Nagaland to 74% in Chandigarh. Further details regarding the sample design, survey instruments, fieldwork, data collection and processing, informed consent, and response rates are available in the LASI India report (International Institute for Population Sciences (IIPS), National Programme for Health Care of Elderly (NPHCE), MoHFW, Harvard T. H. Chan School of Public Health (HSPH) and the University of Southern California (USC) (2020)). All data are publicly available.¹²

3.1.2 Measuring Depression

In the LASI, two internationally validated and comparable tools are used to assess depressive symptoms and episodes: the CES-D scale (Radloff (1977)) and the CIDI-SF scale (Kessler et al. (1998)).

The CES-D scale serves as a screening tool for assessing depressive symptoms in the general population. The validity and reliability of the CES-D scale and its correlation with depression and anxiety have been demonstrated in the general population as well as in a variety of demographic, socioeconomic, and geographic subgroups (Turvey et al. (1999)). While the original CES-D scale is a 20-item scale, LASI implemented a shortened 10-item scale with four scale option categories was used in the LASI. The 10 items included seven negative symptoms (trouble concentrating, feeling depressed, low energy, fear of something,

¹²https://g2aging.org/survey/get_data

feeling alone, bothered by things, and everything is an effort), and three positive symptoms (feeling happy, hopeful, and satisfied). Response options included rarely or never (less than 1 day), sometimes (1 or 2 days), often (3 or 4 days), and most or all of the time (5-7 days) in a week prior to the interview. For negative symptoms, rarely or never (less than 1 day), and sometimes (1 or 2 days) were scored zero, and often (3 or 4 days) and most or all of the time (5-7 days) categories were scored one. Scoring was reversed for positive symptoms. The overall score ranges from zero to 10.

The CIDI-SF scale is designed to produce psychiatric diagnoses for a major depressive episode, in accordance with the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association. It has been validated against clinical psychiatric examinations (Eaton et al. (2007)). It was developed to identify symptoms and duration in the preceding 12 months that were severe enough to indicate major or clinical depression. The CIDI-SF scale score ranges from 0 to 7. This is computed based on questions about dysphoria and anhedonia. The respondents are initially asked screening questions for dysphoria to determine whether they might be having dysphoria (see Chien et al. (2023)) for details on the screening mechanism). Respondents who pass the screening for dysphoria are asked whether they have experienced the following 7 symptoms during those two weeks when they felt worst: lost interest in most things; felt more tired or low in energy than is usual; change in appetite; had more trouble falling asleep than usual, and reported this happening every night or nearly every night; had a lot more trouble concentrating than usual; felt down on themselves, and no good or worthless; and thought a lot about death, either their own, someone else's, or death in general. Respondents who do not pass the dysphoria screening test are then asked the anhedonia screening questions. Respondents who pass the screening for anhedonia are asked whether they have experienced the same symptoms as in the dysphoria questionnaire. The total number of symptoms the respondents reported experiencing is finally computed which is the CIDI-SF score. This is based on the dysphoria questions if the respondent answered the dysphoria questions, and is based on the anhedonia questions if the respondent answered the anhedonia questions.

I use the CES-D score and CIDI-SF scores as my core outcome variables. In addition, following previous literature, I create two binary variables: one indicating whether an individual is depressed (based on the CES-D score) and one indicating clinical depression (based on the CIDI-SF score). A value of one in the first variable denotes depression, while a value of one in the second variable denotes clinical depression. An individual is classified as depressed if his/her CES-D score is four or more (out of 10). An individual is classified as clinically depressed if his/her CIDI-SF score is three or more (out of 7). In mental health studies, an individual usually is considered as depressed/clinically depressed if they report a number of

depression symptoms above the questionnaire’s cutoff point (Banerjee et al. (2023); Mullahy (2024)). I follow that convention while creating the binary variables. The cutoff points are chosen based on the previous literature (International Institute for Population Sciences (IIPS), National Programme for Health Care of Elderly (NPHCE), MoHFW, Harvard T. H. Chan School of Public Health (HSPH) and the University of Southern California (USC) (2020); Kumar et al. (2016)) and recommendations of Kessler et al. (1998).¹³

3.1.3 Analytical Sample

The study is based on a sample of 27,915 older adults (13,563 men and 14,352 women) in India aged 60 and above. These are the individuals on whom data on self-reported depression, caste, religion, basic demographics, information on markers of socioeconomic statistics, and relevant life conditions and experiences are available. My analytical sample has 5,697 UC-Hindu individuals, 4,571 SC individuals, 4,694 ST individuals, 10,761 OBC individuals, and 2,192 non-SC-ST-OBC individuals belonging to minority religious communities.

3.1.4 Summary Statistics

Table 1 presents the weighted summary statistics of the outcome variables for the full sample as well as for the different social groups. Additionally, the table provides weighted summary statistics of basic demographics and main markers of socioeconomic status. The table shows that the elderly’s average CES-D score is 3.07 (out of 10), and 30% of the elderly can be classified as likely depressed (this is in line with the estimates of Banerjee et al. (2023) and Pilania et al. (2019)). On the other hand, the elderly’s average CIDI-SF score is 0.53, and 9% of the elderly can be classified as likely clinically depressed.

Turning to demographics and socioeconomic markers, 50% of the elderly are male, with a mean age of 68 years. Only 1% have never married, and 70% reside in rural India. The mean household wealth per capita, which is measured as the sum of all wealth components less all debt components divided by the total number of people in the household, is ₹13330. Highest education level is measured on a scale from 0 to 9, with an average highest education level of 1.22. Approximately 20% of households are at or below the poverty line, defined by LASI using the World Bank’s international poverty line of \$1.90 per person per day in 2011 PPP dollars. On average, mothers’ and fathers’ highest education levels are 0.13 and 0.5, respectively.

¹³To compare depression prevalence across countries, Banerjee et al. (2023) also select cutoff scores for each country based on existing literature, with the aim of identifying people who, in each context, would be described as likely depressed.

There are notable differences in the mental health statistics, demographics as well as the in markers of SES across social groups. For example, as per the CES-D score and proportion of the likely depressed population, UC-Hindus seem to be the least depressed and SCs seem to be the most depressed. However, in terms of the CIDI-SF score and proportion of clinically depressed population, interestingly, STs seem to be doing the best and SCs doing the worst. Figure 1 illustrates the disparities in CES-D scores and the proportion of the depressed population across social groups, while Figure 2 highlights the discrepancies in CIDI-SF scores and the proportion of the clinically depressed population among these groups.

In terms of demographics and SES, the following two differences are worth noting. First, the social group with the highest proportion of the population living in rural areas is ST. SCs, OBCs, Others, and UC-Hindus follow them. Second, in terms of household wealth per capita, the highest level of education, and poverty status, UC-Hindus are the best off, followed by others, OBCs, SC, and STs. These observations, in line with the findings of several existing surveys and studies, suggest that STs are the most economically backward community in India.

Table 2 presents weighted summary statistics of a set of variables that capture life conditions and experiences for the full sample as well as individually for the different social groups. Variations in these factors across different social groups, influenced by differing SES levels, can significantly contribute to disparities in mental health outcomes. Further, variations in these factors can also directly affect disparities in depression among social groups. The set of variables includes binary indicators of childhood health and financial conditions; binary indicators for everyday experiences of discrimination, markers of physical health including number of persistent health issues that the individual experiences, number of problems reported regarding activities of daily living (ADL), number of problems regarding instrumental activities of daily living (IADL), and self-reported overall health; binary indicators for neighborhood conditions; binary indicators for housing and environment; indicators of individuals' participation in social networks; and cantril ladder score which is a marker of individuals' perceived social deprivation (see Table 2 for a detailed description of all variables).

Significant disparities in life conditions across different social groups are observed. Compared to UC-Hindus, other social groups experience poorer financial conditions during childhood, encounter more frequent discrimination based on caste or religious factors in daily life, report a higher prevalence of persistent health issues, describe worse neighborhood and housing conditions, and feel a greater sense of deprivation. However, SCs, STs, and OBCs are found to have higher rates of health insurance enrollment and engagement in physical activities compared to UC-Hindus. The observation regarding health insurance enrollment likely reflects the impact of government health insurance schemes, which predominantly

target economically disadvantaged sections of society.

3.2 Estimation

To examine the disparity in depression and clinical depression prevalence across social groups, I begin by estimating the following baseline regression model using OLS:

$$y_i = \alpha + \beta_1 SC + \beta_2 ST + \beta_3 OBC + \beta_4 Others + \gamma x_i + \epsilon_i \quad (1)$$

where y_i represents mental health outcomes of individual i ; SC , ST , OBC , and $Others$ denote indicators for social groups; x_i includes basic demographics such as gender, age, marital status, an indicator for whether the person lives in rural or urban area, survey year fixed effects and state fixed effects; and ϵ_i is the idiosyncratic error term.¹⁴ To examine the drivers of the mental health gaps across social groups, I include markers of SES and the set of variables capturing life conditions and experiences (see discussion in Section 3.1.4) as additional covariates in further specifications. Evidently, UC-Hindu is the omitted category. Thus, the coefficients of the social group dummy variables in equation (1) indicate the gap in social group depression outcome relative to the UC-Hindu group.

While the OLS is attractive as the baseline model, given the nature of my outcome variables, its appropriateness is debatable. Specifically, my outcome variables are either counts of depression/clinical depression symptoms or binary indicators that indicate whether or not a person is likely depressed/clinically depressed. It is frequently argued for discrete ‘limited’ response variables like ours, there are some limitations of the OLS. For example, there is no guarantee that the predicted probability will lie within the range of the outcome variable. This, in turn, is likely to raise questions regarding the consistency of the parameter estimates. In fact, for binary variables, it has been shown that very stringent conditions need to be satisfied for the OLS to obtain consistent estimates (Horrace and Oaxaca (2006); Amemiya (1977)). Additionally, the estimates are likely to be inefficient since the bounded nature of the outcome variable implies that the error term is heteroskedastic. However, there are also some studies that refute these claims and show that OLS estimates may be consistent (see, e.g., Chen et al. (2023)).

¹⁴District identifiers are unavailable in the LASI; hence, I could not include district-fixed effects. Although it was possible to incorporate village/urban neighborhood fixed effects, I chose not to because villages/urban neighborhoods in India are highly segregated based on caste and religion (Adukia et al. (2022)). Levels of segregation are comparable to Black/White segregation in the United States. This implies minimal variation in social identity across individuals within these geographic areas. Furthermore, the conditions in villages and neighborhoods could also contribute to the disparities in mental health across different social groups. This is particularly likely because existing research indicates that neighborhood conditions significantly mediate the relationship between SES and mental health (Ridley et al. (2020)).

In light of this, in addition to the OLS, I use the Poisson and Negative Binomial regressions to estimate the models that have the counts of depression/clinical depression symptoms as the outcome variables. As noted by [Cameron and Trivedi \(2005\)](#), [Wooldridge \(2010\)](#) and [Mullahy \(2024\)](#) among several others, the Poisson and Negative Binomial are the two most widely used models to estimate regression models with count variable outcomes. These regression estimates are consistent in the presence of heteroskedasticity and more efficient than standard OLS estimates, especially when considering large samples. The Poisson works under the assumption that the mean of the count variable is equal to its variance. The Negative Binomial is a generalization of the Poisson distribution that includes a parameter to control for over-dispersion, which leads to confidence intervals that are more precise than those from a Poisson regression model ([Doemeland and Trevino \(2014\)](#)). It is also appropriate to use in situations where the underlying count process is not independent ([Winkelmann \(2008\)](#)).

When my outcomes are indicators for whether or not a person is depressed/clinically depressed, I use Logit and Probit regression models for the regressions in addition to the OLS. As is widely known, these are the most popular regression models used when the outcome is binary. The Logit and Probit estimators are consistent and more efficient than the OLS, and the models ensure that the predicted probabilities lie between 0 and 1. All the discrete response models are estimated via the maximum likelihood method. I cluster the standard errors at the level of the secondary sampling unit (SSU), which are villages in rural areas and wards in urban areas. Survey weights are used in all regressions.

4 Results

4.1 Disparities in Depression and Clinical Depression

Tables 3 and 4 present the estimation results of the regressions I specified in the previous section. The outcome variables of the regressions reported in Table 3 are CES-D score and the binary variable indicating whether or not an individual is depressed. In contrast, the regressions reported in Table 4 feature CIDI-SF score and the binary variable indicating whether or not an individual is clinically depressed as the outcomes. Note that the estimates presented for all regression models other than OLS represent the average marginal effect.

The results reported in Table 3 suggest that compared to UC-Hindus, SCs, STs, and OBCs have a higher CES-D score and are more likely to be depressed, conditional on basic demographics, state fixed effects, and survey year fixed effects. Among the disadvantaged social groups, the results indicate, SCs are the worst-off (the difference between them and UC-Hindus in terms of CES-D score and likelihood of depression is the highest), and OBCs

are the best-off. The differences in the CES-D scores as well the likelihood of depression between UC-Hindus and each of the social groups are large and statistically significant at 1% level of significance across all regression models. For example, the OLS estimates suggest that, on average, SCs' CES-D score is 0.33 more than UC-Hindus. Given that the average CES-D score of UC-Hindus is 2.89, this translates into a gap of 11% in CES-D score between UC-Hindus and SCs. Additionally, SCs are 7 percentage points (p.p.) more likely to meet the criteria for being classified as depressed; this represents a gap of 26% in the likelihood of depression between them and the UC-Hindus. The corresponding figures for ST are 0.27 and 6 p.p., and those for the OBC are 0.19 and 4 p.p. Notably, the gaps estimated using the OLS model are almost identical to the ones estimated using the alternative regression models. Members of other religions who are not a part of SC-ST-OBC groups also seem to have a higher CES-D score and are more likely to be depressed than UC-Hindus; however, the differences in these outcomes are not economically and statistically significant in any regression model.

Turning to the results reported in Table 4, I find that compared to UC-Hindus, SCs, and OBCs have a higher CIDI-SF score and are more likely to meet the criteria of clinical depression. The difference in outcomes between UC-Hindus and each of these social groups are economically and statistically significant. For example, the OLS estimates suggest that SCs' CIDI-SF score is 0.13 more than UC-Hindus; compared to the average CIDI-SF of the UC-Hindus, this represents a gap of 27%. Further, SCs are 3 p.p. more likely to be clinically depressed which represents a gap in clinical depression likelihood of 7% between UC-Hindus and SCs. The estimated gaps across are higher for the SCs than OBCs, indicating that the former is worse off than the latter. The difference in CIDI-SF scores and the likelihood of being clinically depressed between the UC-Hindus and STs, as well as the members of other religions, are, however, not statistically or economically significant. It is worth noting that while the estimates of the gaps across the various regression models using the binary indicator of clinical depression as the outcome are similar, when using the CIDI-SF score as the outcome variables, the gaps estimated using the Negative Binomial regression are slightly larger than the gaps estimated using OLS and Poisson models.

In sum, the results from the baseline specifications and without controls for SES and life conditions and experiences point towards significant disparity in depression and clinical depression across the social groups.

4.2 Role of SES and Life Conditions and Experiences

Tables 5 and 6 present the results of the regressions that include controls for SES and life conditions and experiences, in addition to demographics, state fixed effects, and survey year fixed effects. The outcome variables of the regressions reported in Table 5 are the CES-D score and the indicator for depression. The regressions reported in Table 6 use the CIDI-SF score and the indicator for clinical depression as the outcome variables. In both tables, columns 1-3 and columns 7-9 present the results of the specifications that include controls for SES but not life conditions and experiences. In contrast, columns 4-6 and columns 10-12 present the results of the specifications that include controls for SES as well as life conditions and experiences.

The results reported in columns 1-3 of Table 5 indicate, the gaps in CES-D score diminish substantially when I include controls for SES. For example, conditional on SES, the OLS estimates suggest that gap in CES-D score between UC-Hindus and SCs is 0.15, between UC-Hindus and STs is 0.08 and between UC-Hindus and OBCs is 0.06. While the first estimate is statistically significant at 1% level of significance, the last two are statistically insignificant. The corresponding gaps from the specification without SES controls are 0.33, 0.27 and 0.19. This means, SES causes the gaps in the CES-D score across social groups to reduce by more than 50%. A similar reduction in the gaps in the CES-D scores is observed when I estimate the regressions using Poisson and Negative Binomial regressions. Focusing on regressions that use the indicator of depression as the outcome variable (columns 7-9), I also find that the inclusion of SES leads to a significant reduction (more than 50%) in the gap in the likelihood of depression between UC-Hindus and the disadvantaged groups irrespective of the regression model employed. Note, among the markers of SES, the coefficient of log of wealth, highest educational level and poverty are statistically and economically significant, while the coefficient of mother's highest education and father's education are not.

While the inclusion of the SES controls leads to a reduction in gaps in CES-D score and the likelihood of depression between UC-Hindus and the different social groups, clearly, sizeable gaps in depression remain. For example, even after conditioning on SES, the results suggest that the SCs are 3 p.p. more likely to be depressed than UC-Hindus, which translates into an 11% gap in the likelihood of depression between the two social groups. The gaps, however, almost completely disappear when I include controls for life conditions and experiences. In particular, the estimates of all the gaps are statistically insignificant; moreover, they are very small. This suggests that in addition to SES, life conditions and experiences have a significant role in explaining the gap in the CES-D score and the likelihood of depression.

Figure 3 presents the estimates of the coefficients of all the covariates that capture SES

and life conditions and experiences from the OLS regressions shown in columns 4 and 10 of Table 5 (i.e., the OLS regressions that account for SES as well as life conditions and experiences in addition to basic demographics, survey year fixed effects and state fixed effects). Further, in the Appendix, I present the full regression results of the specifications reported in columns 4-6 and columns 10-12 (see Table A1). As evident, several of the covariates representing life conditions and experiences are statistically significant, suggesting they could be driving the gaps. These covariates are childhood health, experiences of discrimination, markers of physical health, neighborhood conditions (safety from crime and violence when alone), housing conditions (pucca house and indoor pollution), and perceived relative deprivation. It is worth noting that when life conditions and experiences are accounted for, the coefficients of the markers of SES themselves significantly reduce in terms of magnitude, suggesting that the effect of SES was operating mostly through life conditions and experiences.

Turning to the estimates of the gaps in CIDI-SF scores and the likelihood of clinical depression in Table 6, I find that the estimates of the previously documented gaps in CIDI-SF scores and the likelihood of clinical depression between UC-Hindus and SCs and UC-Hindus and OBCs reduce when accounting for SES. For example, while the OLS estimates suggest that the gap in the likelihood of clinical depression between UC-Hindu and SC and UC-Hindu and OBC without accounting for SES are 2 p.p. and 1.6 p.p. respectively, the same gaps become 1.6 p.p. and 1.2 p.p. when I account for SES. However, the gaps continue to remain statistically significant. Moreover, they are also economically significant: a 1.6 p.p. gap in the likelihood of clinical depression implies an 18% gap in the likelihood of clinical depression, and a 1.2 p.p. implies a gap of 13%. The gap in the outcomes between UC-Hindu and Others was statistically insignificant earlier; it continues to remain so. However, adjusting for SES causes the gap in CIDI-SF score between STs and UC-Hindus to become statistically significant at 10% level of significance when these gaps are estimated using the OLS and Poisson models. Further, the sign of the estimated coefficients are negative suggesting that STs have a lower CIDI-SF score than the UC-Hindus. The gaps in the likelihood of clinical depression between STs and UC-Hindus are also negative; however, they are not statistically significant at conventional levels of significance. The estimates of the gaps remain stable across the different regression models. The markers of SES that seem to driving the gaps are: log of wealth, highest educational level, and poverty.

In addition to SES, when I include controls for life conditions and experiences, the observed gaps in CIDI-SF scores and the likelihood of clinical depression between UC-Hindus and SCs and UC-Hindus and STs fall and become economically and statistically insignificant. This is similar to what I had observed for the regressions using CES-D score and

the likelihood of depression as outcome variables. Figure 4 and Table A2 (these are analogous to Figure 3 and Table A1 respectively) suggest that the possible drivers of the gaps in CIDI-SF score and likelihood of clinical depression between UC-Hindus and SCs and UC-Hindus and OBCs are childhood financial conditions, experiences of discrimination, physical health, neighborhood conditions (risk of walking in the neighborhood), housing conditions (pucca house and indoor pollution), and perceived deprivation. The estimated gap between UC-Hindus and Others continues to remain statistically insignificant. Notably, the negative gaps between ST and UC-Hindu now become statistically significant for both the outcomes and across all specifications suggesting that accounting for SES and life conditions and experiences, STs have a lower CIDI-SF score and lower likelihood of clinical depression than UC-Hindus. This could be interpreted as suggesting that STs inherently have better mental health than others (although why that would not be reflected by the CES-D score and the likelihood of depression is not clear). Alternatively, this could suggest that elderly STs under-report the symptoms used in clinical depression diagnosis.

The second possibility appears more plausible because using the CIDI-SF survey tool to assess clinical depression symptoms in elderly populations accurately presents considerable challenges. Firstly, the CIDI-SF survey involves a lengthy questionnaire that delves into various aspects of mental health, which can be challenging for respondents, particularly elderly individuals who may experience cognitive limitations or fatigue during the assessment process (Haro et al. (2006)). Moreover, the survey requires respondents to recall their mental health status over the past year, which introduces the potential for recall bias. Elderly individuals, in particular, may have difficulty accurately remembering and reporting symptoms over such a prolonged period (Klein et al. (2006)).¹⁵ These challenges are likely significantly amplified when attempting to assess clinical depression among elderly STs since STs are the most marginalized and economically backward community in India. Centuries of marginalization may have increased cognitive limitations among STs. Further, cultural factors could influence how they perceive and articulate persistent depression symptoms.

Nevertheless, to examine this issue further, I compare reported life satisfaction across social groups. Mental health is widely known to be an important predictor of life satisfaction (Buason et al. (2021); Layard et al. (2013); Powdthavee and Van Den Berg (2011)). If STs inherently have better mental health than the other social groups, they should also presumably exhibit higher life satisfaction when SES and life conditions and experiences are accounted for.

¹⁵In fact, because of these reasons, CES-D is often considered as more efficient for measuring depression in the elderly population (O'Halloran et al. (2014); Lewinsohn et al. (1997)).

4.3 Disparities in Life Satisfaction

LASI provides a summary index of respondents' life satisfaction. This is computed based on respondents' answers to five different life satisfaction questions. Specifically, the respondents need to indicate how much they agree with the following statements: (a) in most ways their life is close to ideal, (b) the conditions of their life are excellent, (c) they are satisfied with their life, (d) so far, they have gotten the important things they want in life, and (e) if they could live their life again, they would change almost nothing. The responses are coded as 1 indicating disagree, 2 indicating neither agree nor disagree, and 3 indicating agree. The summary index of life satisfaction for each respondent is the mean of their responses to these five questions.

Figure 5 illustrates disparities in life satisfaction among different social groups. UC-Hindus show the highest life satisfaction, followed by Others, OBC, ST, and SC groups. Meanwhile, Table 7 presents regression results using the life satisfaction index as the dependent variable. These findings indicate that, after accounting for SES and other life conditions, there is no evidence that STs exhibit higher life satisfaction compared to other groups. The estimated gap in life satisfaction is both economically and statistically insignificant at conventional levels of significance. These results challenge the notion that STs inherently possess better mental health. They suggest instead that elderly STs may have lower CIDI-SF scores and a reduced likelihood of clinical depression due to the potential underreporting of symptoms used in diagnosing clinical depression.

5 Conclusion

This study investigates the prevalence of depression and clinical depression among elderly individuals in India across various social groups. I show that compared to UC-Hindus, marginalized groups such as SCs, STs, and OBCs experience higher levels of depression. Moreover, SCs and OBCs are more prone to clinical depression than UC-Hindus, although STs show no significant difference in clinical depression likelihood or severity compared to UC-Hindus. The disparities in depression and clinical depression rates across social groups diminish when markers of SES are considered, and they disappear almost entirely when adjusting for life conditions and experiences. Interestingly, after accounting for these factors, STs exhibit the lowest likelihood of clinical depression among all groups studied. While this could imply STs inherently have better mental health compared to other groups, I argue, a more plausible explanation is elderly STs underreport symptoms typically used to diagnose clinical depression.

My findings have important policy implications. The results suggest that merely helping low-ranked social groups to catch up with high-ranked social groups in terms of income and education through policies like affirmative action may not close the gaps in mental health among the elderly across the social groups. This is in line with evidence from prior research on social inequality in India that points to the incompleteness of government efforts to address the consequences of social disadvantage. Given the significant mental health disparities across social groups even after accounting for SES, one can potentially interpret my findings as being supportive of the argument that affirmative policies, despite their intentions, often inadvertently contribute to social stigma and harm the intended beneficiaries (Deshpande (2019); Bros (2014)). My work suggests the effect of affirmative policies on mental health requires further research.

Based on my findings, interventions aimed at comprehensively improving the life conditions and experiences of disadvantaged communities could significantly reduce disparities in mental health across social groups. These interventions should focus on reducing caste and religious discrimination in daily life, improving physical health among disadvantaged groups, enhancing neighborhood conditions, upgrading housing conditions, and alleviating feelings of deprivation. Additionally, policy objectives should aim to promote social integration of marginalized groups. Insights from social psychology indicate that interventions designed to mitigate biases and stereotypes against individuals from marginalized backgrounds, alongside initiatives fostering cross-group friendships, positively influence well-being outcomes (Lowe (2021)). Implementing such interventions could be particularly effective in narrowing mental health disparities among elderly individuals across different social groups.

Overall, this study advocates for prioritizing disadvantaged social groups in geriatric mental health policies and interventions. While existing research underscores the urgent need for comprehensive strategies to bolster national healthcare systems in addressing India's demographic shifts and the impending geriatric mental health crisis (see, e.g., Philip et al. (2021)), there remains a significant oversight regarding the specific needs of disadvantaged social groups. It is crucial, therefore, to introduce targeted measures that address their unique challenges and requirements, thereby ensuring inclusivity and equity in mental health care delivery.

References

- Adhvaryu, A., Fenske, J., and Nyshadham, A. (2019). Early life circumstance and adult mental health. *Journal of Political Economy*, 127(4):1516–1549.
- Adukia, A., Asher, S., Jha, K., Novosad, P., and Tan, B. (2022). Residential Segregation and Unequal Access to Local Public Services in India: Evidence from 1.5 m Neighborhoods. Working paper.
- Alem, Y. and Tato, G. L. (2023). Shocks and mental health: Panel data evidence from South Africa. *World Development*, 168:106270.
- Alloush, M. and Bloem, J. R. (2022). Neighborhood violence, poverty, and psychological well-being. *Journal of Development Economics*, 154:102756.
- Alzua, M. L., Cantet, N., Dammert, A. C., and Olajide, D. (2024). The Well-being Effects of an Old-Age Pension: Experimental Evidence for Ekiti State in Nigeria. *Journal of African Economies*, 33(3):240–270.
- Amemiya, T. (1977). Some theorems in the linear probability model. *International Economic Review*, pages 645–650.
- Apouey, B. and Clark, A. E. (2015). Winning big but feeling no better? the effect of lottery prizes on physical and mental health. *Health Economics*, 24(5):516–538.
- Bando, R., Galiani, S., and Gertler, P. (2022). Another brick on the wall: On the effects of non-contributory pensions on material and subjective well-being. *Journal of Economic Behavior & Organization*, 195:16–26.
- Banerjee, A., Duflo, E., Grela, E., McKelway, M., Schilbach, F., Sharma, G., and Vaidyanathan, G. (2023). Depression and Loneliness among the Elderly in Low-and Middle-Income Countries. *Journal of Economic Perspectives*, 37(2):179–202.
- Beutel, M. E., Brähler, E., Wiltink, J., Kerahrodi, J. G., Burghardt, J., Michal, M., Schulz, A., Wild, P. S., Münzel, T., Schmidtman, I., et al. (2019). New onset of depression in aging women and men: contributions of social, psychological, behavioral, and somatic predictors in the community. *Psychological Medicine*, 49(7):1148–1155.
- Bloom, D. E., Sekher, T., and Lee, J. (2021). Longitudinal Aging Study in India (LASI): new data resources for addressing aging in India. *Nature Aging*, 1(12):1070–1072.
- Bros, C. (2014). The burden of caste on social identity in India. *The Journal of Development Studies*, 50(10):1411–1429.
- Buason, A., Norton, E. C., McNamee, P., Thordardottir, E. B., and Asgeirsdóttir, T. L. (2021). The causal Effect of Depression and Anxiety on Life Satisfaction: An Instrumental Variable Approach. Working paper, National Bureau of Economic Research.
- Cameron, A. C. and Trivedi, P. K. (2005). *Microeconometrics: Methods and Applications*. Cambridge University Press.
- Cassan, G. (2019). Affirmative action, education and gender: Evidence from India. *Journal of Development Economics*, 136:51–70.
- Chen, K., Martin, R. S., and Wooldridge, J. M. (2023). Another Look at the Linear Probability Model and Nonlinear Index Models. *arXiv preprint arXiv:2308.15338*.
- Chien, S., Young, C., Phillips, D., Wilkens, J., Wang, Y., Gross, A., Meijer, E., Angrisani, M., and Lee, J. (2023). “Harmonized LASI, Version A.3.” The Gateway to Global Aging Data, 2023. Technical report, <https://doi.org/10.25549/h-lasi>.
- Chin, A. and Prakash, N. (2011). The redistributive effects of political reservation for minorities: Evidence from India. *Journal of Development Economics*, 96(2):265–277.

- Choung, Y., Chatterjee, S., and Pak, T.-Y. (2022). Depression and financial planning horizon. *Journal of Behavioral and Experimental Economics*, 98:101877.
- Christian, C., Hensel, L., and Roth, C. (2019). Income shocks and suicides: Causal evidence from Indonesia. *Review of Economics and Statistics*, 101(5):905–920.
- Dasgupta, U., Mani, S., Sharma, S., and Singhal, S. (2023). Social identity, behavior, and personality: evidence from India. *The Journal of Development Studies*, 59(4):472–489.
- Debnath, A., Sandooja, C., and Kishore, J. (2023). Depression and associated factors among older adults in a North Indian state: a cross-sectional study. *Cureus*, 15(3).
- Desai, S. and Dubey, A. (2012). Caste in 21st century india: Competing narratives. *Economic and Political Weekly*, 46(11):40.
- Deshpande, A. (2019). Double jeopardy? Stigma of identity and affirmative action. *The Review of Black Political Economy*, 46(1):38–64.
- Deshpande, A. and Newman, K. (2007). Where the path leads: The role of caste in post-university employment expectations. *Economic and Political Weekly*, pages 4133–4140.
- Deshpande, A. and Ramachandran, R. (2019). Traditional hierarchies and affirmative action in a globalizing economy: Evidence from India. *World Development*, 118:63–78.
- Deshpande, A. and Sharma, S. (2016). Disadvantage and discrimination in self-employment: caste gaps in earnings in Indian small businesses. *Small Business Economics*, 46:325–346.
- Deshpande, S. and Bapna, G. (2008). Dalits in the Muslim and Christian Communities. *New Delhi: National Commission for Minorities*.
- Devikrishna, N., Mishra, N. L., and Singh, A. (2024). Burden of undiagnosed depression among older adults in India: a population-based study. *BMC Psychiatry*, 24(1):330.
- Doemeland, D. and Trevino, J. (2014). Which World Bank reports are widely read? *World Bank Policy Research Working Paper*, (6851).
- Duraisamy, P. and Duraisamy, M. (2017). Social identity and wage discrimination in the Indian labour market. *Economic and Political Weekly*, pages 51–60.
- Eaton, W. W., Hall, A. L., Macdonald, R., and Mckibben, J. (2007). Case identification in psychiatric epidemiology: a review. *International Review of Psychiatry*, 19(5):497–507.
- Geetha, A., Sugunadevi, G., Ram, T. M., Jayaraj, N. P., Raja, R., and Kumar, N. J. V. (2024). A cross-sectional study on prevalence and determinants of insomnia and depression among geriatric population in rural Coimbatore. *Journal of the Indian Academy of Geriatrics*, 20(2):63–69.
- Goswami, S. and Deshmukh, P. R. (2021). The prevalence of depression among the elderly people living in rural Wardha. *Industrial Psychiatry Journal*, 30(1):90–95.
- Grover, S., Verma, M., Singh, T., Dahiya, N., and Nehra, R. (2019). Loneliness and its correlates amongst elderly attending non-communicable disease rural clinic attached to a tertiary care centre of North India. *Asian Journal of Psychiatry*, 43:189–196.
- Gupta, A. and Coffey, D. (2020). Caste, religion, and mental health in India. *Population Research and Policy Review*, 39(6):1119–1141.
- Haro, J. M., Arbabzadeh-Bouchez, S., Brugha, T. S., De Girolamo, G., Guyer, M. E., Jin, R., Lepine, J. P., Mazzi, F., Reneses, B., Vilagut, G., et al. (2006). Concordance of the Composite International Diagnostic Interview Version 3.0 (cidi 3.0) with standardized clinical assessments in the WHO World Mental Health surveys. *International journal of methods in psychiatric research*, 15(4):167–180.
- Haushofer, J. and Fehr, E. (2014). On the psychology of poverty. *Science*, 344(6186):862–867.

- Horrace, W. C. and Oaxaca, R. L. (2006). Results on the bias and inconsistency of ordinary least squares for the linear probability model. *Economics Letters*, 90(3):321–327.
- International Institute for Population Sciences (IIPS), National Programme for Health Care of Elderly (NPHCE), MoHFW, Harvard T. H. Chan School of Public Health (HSPH) and the University of Southern California (USC) (2020). Longitudinal Ageing Study in India (LASI) Wave 1, 2017-18, India Report. Technical report, International Institute for Population Sciences: Mumbai.
- Iyer, L., Khanna, T., and Varshney, A. (2013). Caste and entrepreneurship in India. *Economic and Political Weekly*, pages 52–60.
- Jodhka, S. S. and Shah, G. (2010). Comparative contexts of discrimination: Caste and untouchability in South Asia. *Economic and Political Weekly*, pages 99–106.
- Johri, A. and Anand, P. V. (2022). Life satisfaction and well-being at the intersections of caste and gender in India. *Psychological Studies*, 67(3):317–331.
- Kessler, R. C., Andrews, G., Mroczek, D., Ustun, B., and Wittchen, H.-U. (1998). The World Health Organization composite international diagnostic interview short-form (CIDI-SF). *International Journal of Methods in Psychiatric Research*, 7(4):171–185.
- Khamis, M., Prakash, N., and Siddique, Z. (2012). Consumption and social identity: Evidence from India. *Journal of Economic Behavior & Organization*, 83(3):353–371.
- Kijima, Y. (2006). Caste and tribe inequality: evidence from India, 1983–1999. *Economic Development and Cultural Change*, 54(2):369–404.
- Kim, K.-M., Kim, J.-H., Rhee, H.-S., and Youn, B.-Y. (2023). Development of a prediction model for the depression level of the elderly in low-income households: using decision trees, logistic regression, neural networks, and random forest. *Scientific Reports*, 13(1):11473.
- Klein, D. N., Shankman, S. A., and Rose, S. (2006). Ten-year prospective follow-up study of the naturalistic course of dysthymic disorder and double depression. *American Journal of Psychiatry*, 163(5):872–880.
- Kuhn, A., Lalive, R., and Zweimüller, J. (2009). The public health costs of job loss. *Journal of Health Economics*, 28(6):1099–1115.
- Kumar, M., Ruikar, M., and Surya, V. L. (2022). Prevalence and determinants of social isolation among elderly in an urban slum of Raipur city—a community based cross-sectional study. *International Journal of Geriatric Psychiatry*, 37(9).
- Kumar, S., Nakulan, A., Thoppil, S. P., Parassery, R. P., and Kunnukattil, S. S. (2016). Screening for depression among community-dwelling elders: usefulness of the center for epidemiologic studies depression scale. *Indian Journal of Psychological Medicine*, 38(5):483–485.
- Layard, R., Chisholm, D., Patel, V., and Saxena, S. (2013). Mental illness and unhappiness. Working paper, Center for Economic Performance: London (report number 1239).
- Lewinsohn, P. M., Seeley, J. R., Roberts, R. E., and Allen, N. B. (1997). Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychology and Aging*, 12(2):277.
- Lindqvist, E., Östling, R., and Cesarini, D. (2020). Long-run effects of lottery wealth on psychological well-being. *The Review of Economic Studies*, 87(6):2703–2726.
- Lowe, M. (2021). Types of contact: A field experiment on collaborative and adversarial caste integration. *American Economic Review*, 111(6):1807–1844.

- Marmamula, S., Kumbham, T. R., Modepalli, S. B., Barrenkala, N. R., Yellapragada, R., and Shidhaye, R. (2021). Depression, combined visual and hearing impairment (dual sensory impairment): a hidden multi-morbidity among the elderly in Residential Care in India. *Scientific Reports*, 11(1):16189.
- McKelway, M., Banerjee, A., Grela, E., Schilbach, F., Sequeira, M., Sharma, G., Vaidyanathan, G., and Duflo, E. (2023). Effects of Cognitive Behavioral Therapy and Cash Transfers on Older Persons Living Alone in India: A Randomized Trial. *Annals of Internal Medicine*, 176(5):632–641.
- Muhammad, T., Pai, M., and Ansari, S. (2023). Gender differences in the association between cardiovascular diseases and major depressive disorder among older adults in India. *Dialogues in Health*, 2:100107.
- Mullahy, J. (2024). Analyzing health outcomes measured as bounded counts. *Journal of Health Economics*, 95:102875.
- Munshi, K. and Rosenzweig, M. (2006). Traditional institutions meet the modern world: Caste, gender, and schooling choice in a globalizing economy. *American Economic Review*, 96(4):1225–1252.
- O’Halloran, A., Kenny, R., and King-Kallimanis, B. (2014). The latent factors of depression from the short forms of the CES-D are consistent, reliable and valid in community-living older adults. *European Geriatric Medicine*, 5(2):97–102.
- Pan, C. (2024). Bidirectional and dynamic relationships between social isolation and loneliness among older adults in China. *Journal of the American Medical Directors Association*, page 105003.
- Pandey, P. and Pandey, S. (2018). Survey at an IIT campus shows how caste affects students’ perceptions. *Economic and Political Weekly*, 53(9):1–8.
- Paul, R., Muhammad, T., Rashmi, R., Sharma, P., Srivastava, S., and Zanwar, P. P. (2023). Depression by gender and associated factors among older adults in India: implications for age-friendly policies. *Scientific Reports*, 13(1):17651.
- Philip, S., Gajera, G., Nirisha, P. L., Sivakumar, P. T., Barikar, M. C., Panday, P., Patley, R., Chander, R., Sinha, P., Basavarajappa, C., et al. (2021). Future-proofing geriatric mental health care services in India: training and policy directions. *Indian Journal of Psychological Medicine*, 43(5-suppl):S134–S141.
- Pilania, M., Yadav, V., Bairwa, M., Behera, P., Gupta, S. D., Khurana, H., Mohan, V., Baniya, G., and Poongothai, S. (2019). Prevalence of depression among the elderly (60 years and above) population in India, 1997–2016: a systematic review and meta-analysis. *BMC Public Health*, 19:1–18.
- Powdthavee, N. and Van Den Berg, B. (2011). Putting different price tags on the same health condition: Re-evaluating the well-being valuation approach. *Journal of Health Economics*, 30(5):1032–1043.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3):385–401.
- Ramachandran, R. and Deshpande, A. (2023). Stunting and Social Identity: Revisiting the India - Africa Comparison. Economics discussion paper 97, Ashoka University.
- Ridley, M., Rao, G., Schilbach, F., and Patel, V. (2020). Poverty, depression, and anxiety: Causal evidence and mechanisms. *Science*, 370(6522):eaay0214.
- Saenz, J. L., Garcia, M. A., and Downer, B. (2020). Late life depressive symptoms and cognitive function among older Mexican adults: the past and the present. *Aging & Mental Health*, 24(3):413–422.

- Siddique, Z. (2011). Evidence on caste-based discrimination. *Labour Economics*, 18:S146–S159.
- Soni, S., Vishwakarma, D., and AJ, A. (2024). A cross-sectional study to measure the level of depression and the quality of life among the geriatric population residing in old age home. *Indian Journal of Public Health Research & Development*, 15(1).
- Souza, J. G., Farias-Itao, D. S., Aliberti, M. J., Bertola, L., de Andrade, F. B., Lima-Costa, M. F., Ferri, C. P., and Suemoto, C. K. (2023). Social isolation, loneliness, and cognitive performance in older adults: Evidence from the ELSI-Brazil study. *The American Journal of Geriatric Psychiatry*, 31(8):610–620.
- Spears, D. (2016). Caste and life satisfaction in rural north India. *Economic and Political Weekly*, pages 12–14.
- Srivastava, S., Debnath, P., Shri, N., and Muhammad, T. (2021). The association of widowhood and living alone with depression among older adults in India. *Scientific Reports*, 11(1):21641.
- Tan, M. P. (2022). Healthcare for older people in lower and middle income countries. *Age and Ageing*, 51(4):afac016.
- Thorat, S. and Attewell, P. (2007). The legacy of social exclusion: A correspondence study of job discrimination in India. *Economic and Political Weekly*, pages 4141–4145.
- Thorat, S. and Newman, K. S. (2007). Caste and economic discrimination: Causes, consequences and remedies. *Economic and Political Weekly*, pages 4121–4124.
- Turvey, C. L., Wallace, R. B., and Herzog, R. (1999). A revised CES-D measure of depressive symptoms and a dsm-based measure of major depressive episodes in the elderly. *International Psychogeriatrics*, 11(2):139–148.
- UN DESA (United Nations Department of Economic and Social Affairs) (2019). World Population Ageing 2019: Highlights. Technical report, United Nations: New York.
- United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, Key Findings and Advance Tables. Technical report, United Nations: New York.
- United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects: The 2019 Revision, Online Edition. Technical report, United Nations: New York.
- Vincent, V., Shanmugam, J., Duraisamy, S., Loganathan, P., Ganeshkumar, V., and Balakrishnan, V. (2020). Prevalence of depression among elderly population in rural south india. *International Journey of Community Medicine and Public Health*, 7(6):2377–80.
- Williams, D. R., Yu, Y., Jackson, J. S., and Anderson, N. B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of Health Psychology*, 2(3):335–351.
- Winkelmann, R. (2008). *Econometric Analysis of Count Data*. Springer Science & Business Media.
- Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. MIT press.

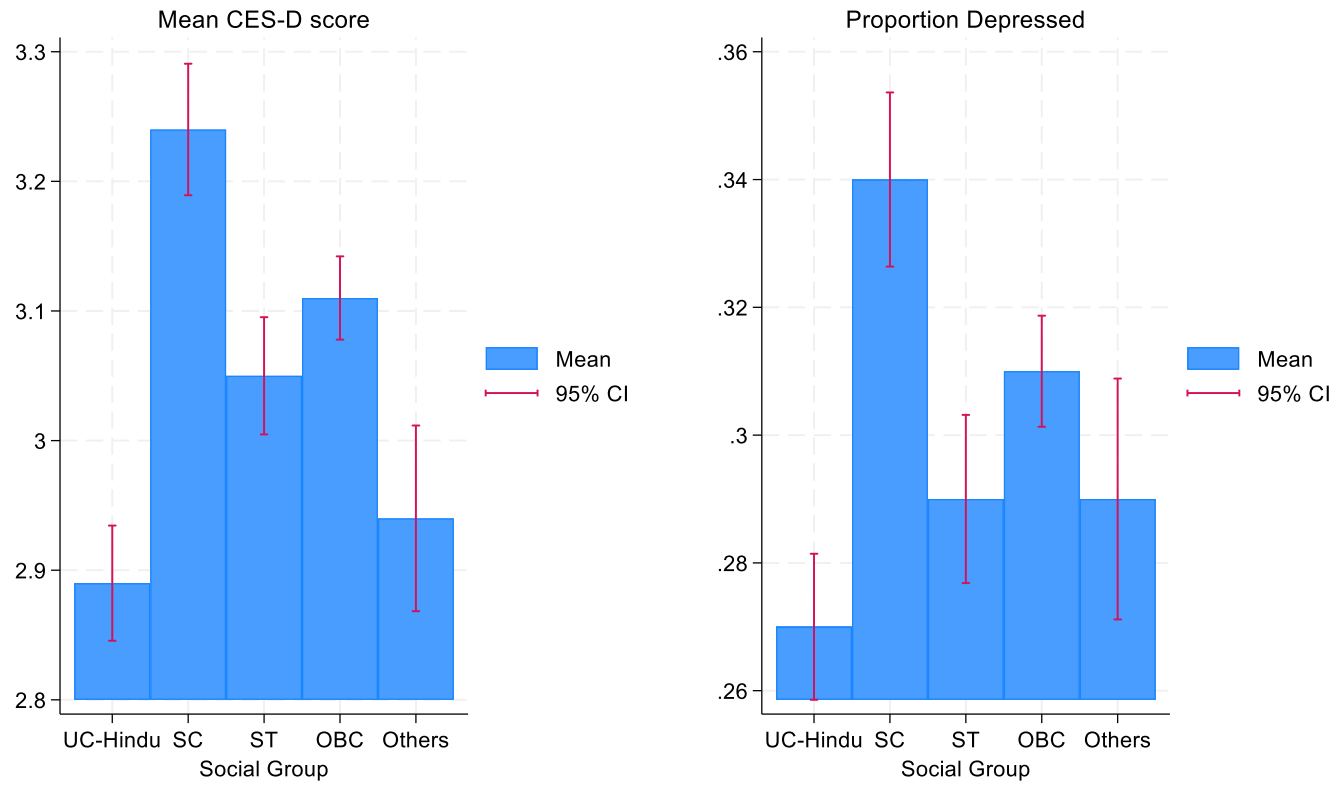


Figure 1. Depression among the elderly across social groups

Notes: Based on author's own calculations using data from LASI 2017-19.

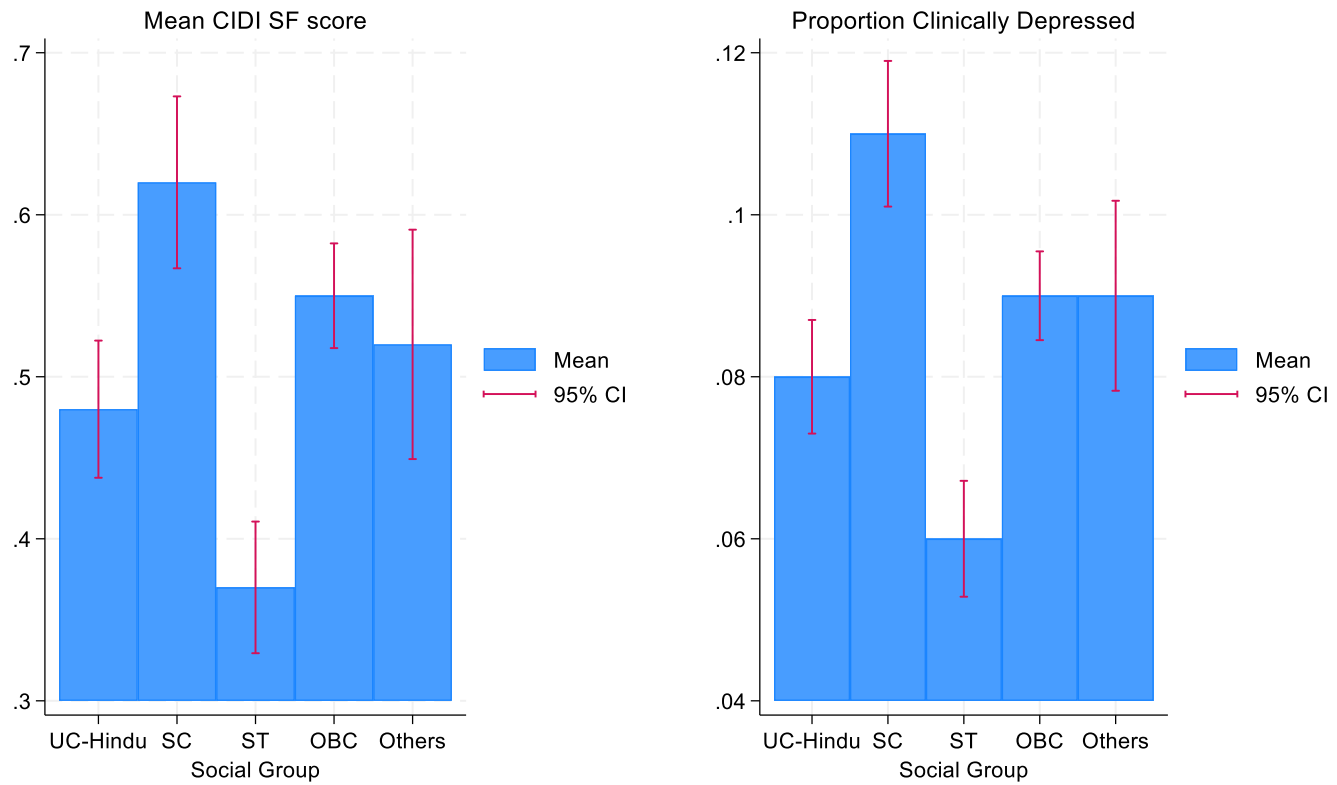


Figure 2. Clinical depression among the elderly across social groups

Notes: Based on author's own calculations using data from LASI 2017-19.

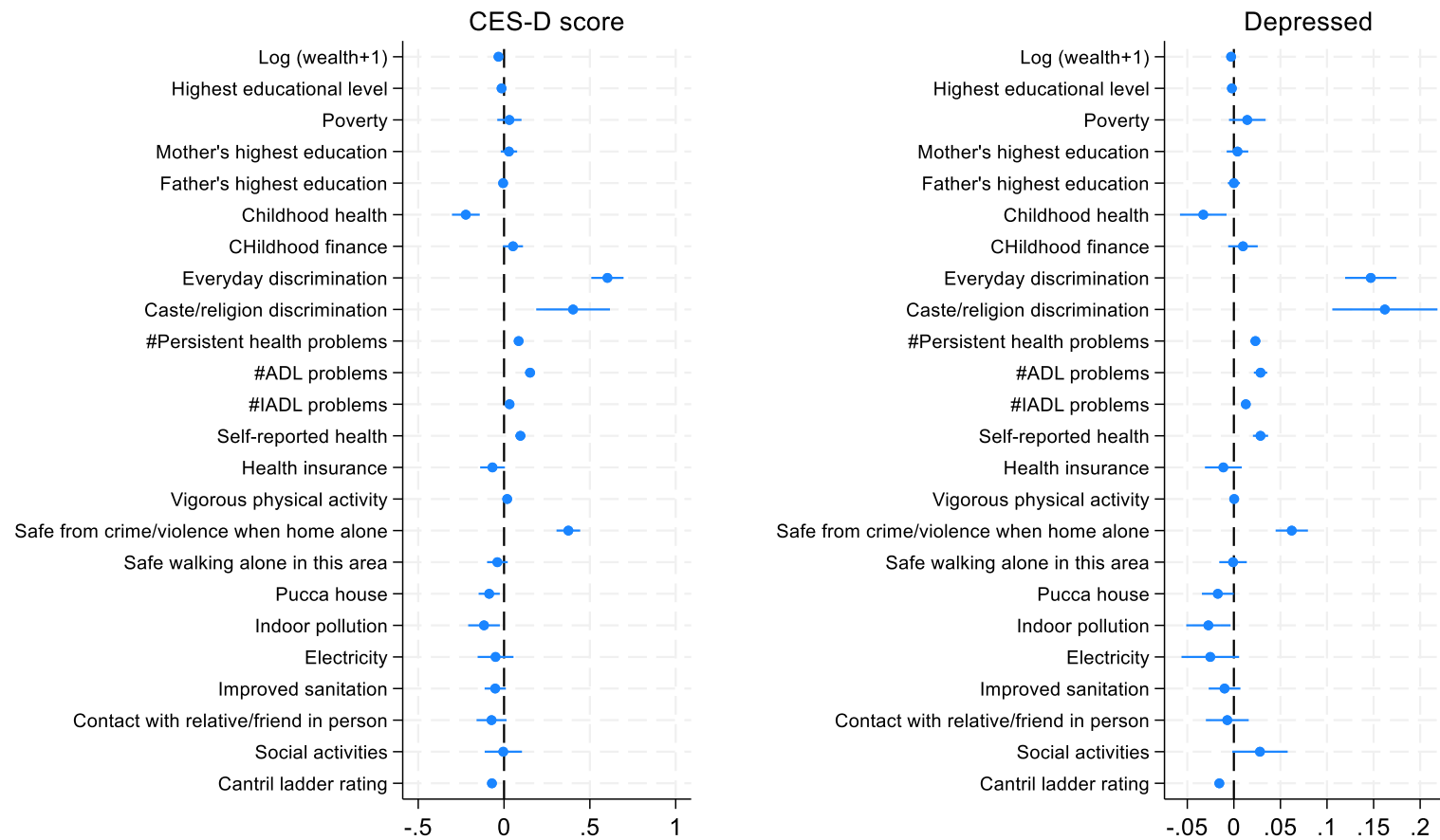


Figure 3. Drivers of the gaps in CES-D score and likelihood of depression among the elderly across social groups

Notes: Based on author's own calculations using data from LASI 2017-19. The plots show estimates of coefficients of all the variables capturing SES and life conditions and experiences, along with the 95% confidence intervals, when the outcome variable is regressed on social group dummies, basic demographics, variables capturing SES and life conditions and experiences, survey year fixed effects and state fixed effects. See Tables 1 and 2 for the definitions of the variables.

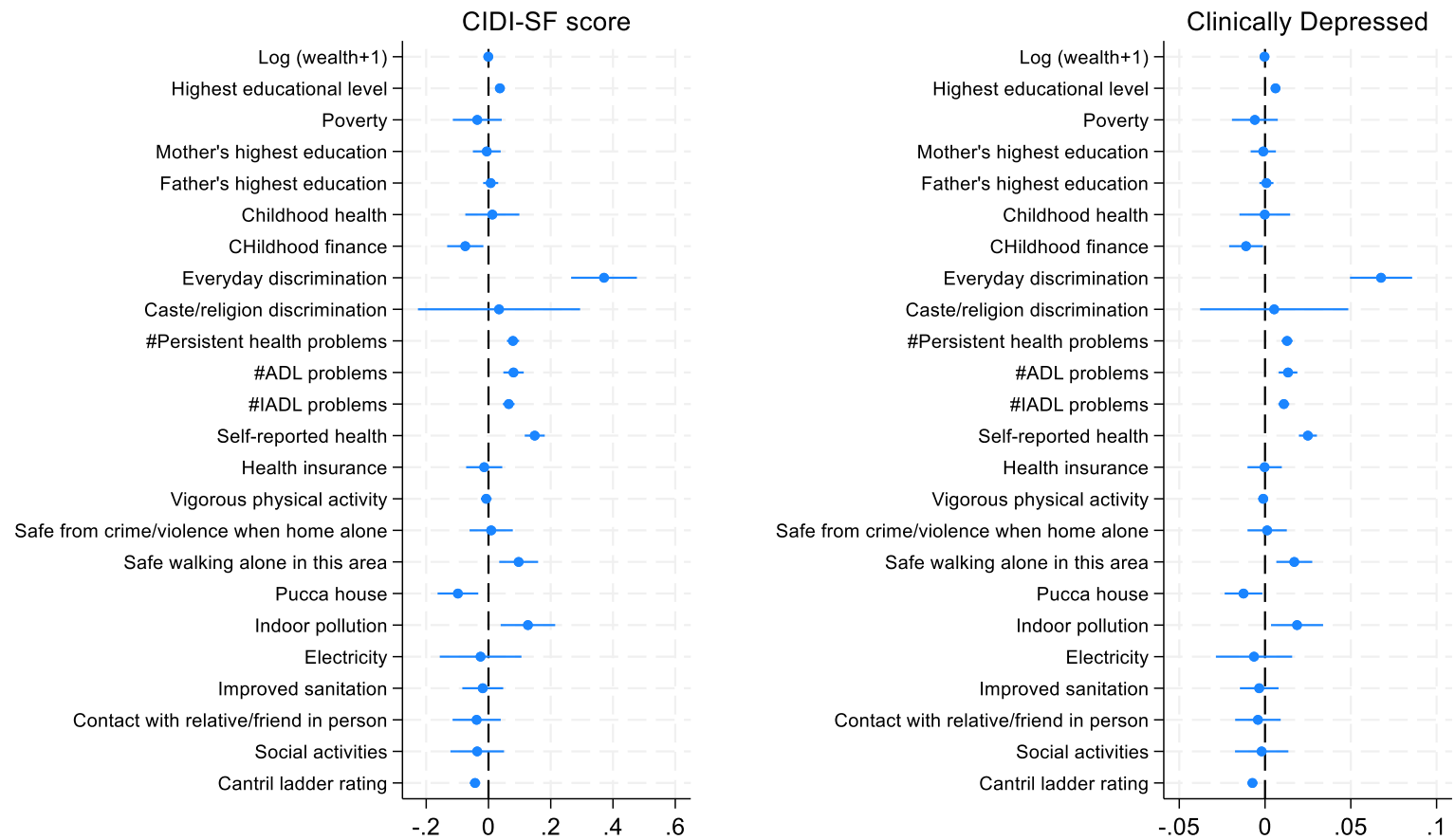


Figure 4. Drivers of the gaps in CIDI-SF score and likelihood of clinical depression among the elderly across social groups

Notes: Based on author's own calculations using data from LASI 2017-19. The plots show estimates of coefficients of all the variables capturing SES and life conditions and experiences, along with the 95% confidence intervals, when the outcome variable is regressed on social group dummies, basic demographics, variables capturing SES and life conditions and experiences, survey year fixed effects and state fixed effects. See Tables 1 and 2 for the definitions of the variables.

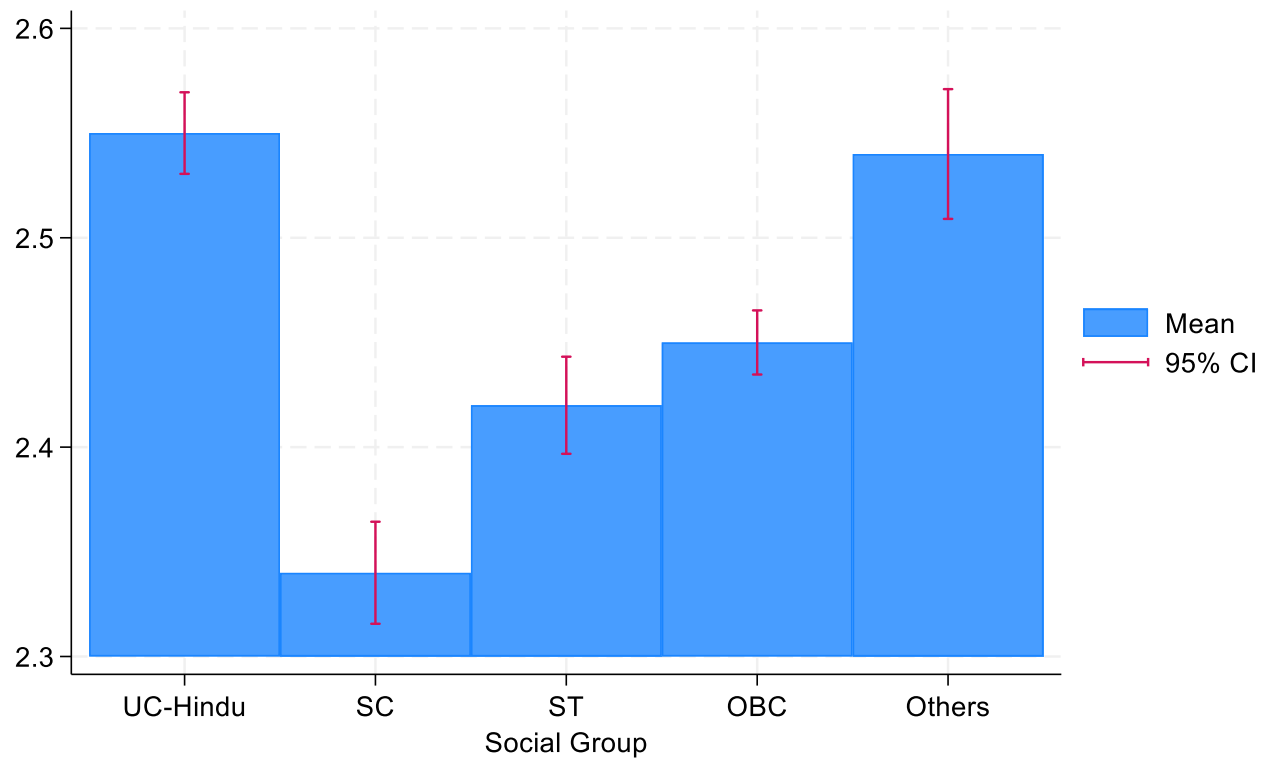


Figure 5. Life satisfaction among the elderly across social groups

Notes: Based on author's own calculations using data from LASI 2017-19. Vertical axis plots values of life satisfaction index.

Table 1. Weighted summary statistics: outcomes, demographics and socioeconomic status

	Full Sample			Upper Caste-Hindu		Scheduled Caste		Scheduled Tribe		Other Backward Classes		Others	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Depression</i>													
CES-D Score (0-10)	27,915	3.07	1.71	2.89	1.71	3.24	1.75	3.05	1.58	3.11	1.7	2.94	1.71
Depressed (=1 if CES-D score \geq 4)	27,915	0.3	0.46	0.27	0.44	0.34	0.47	0.29	0.46	0.31	0.46	0.29	0.45
CIDI-SF Score (0-7)	27,915	0.53	1.69	0.48	1.63	0.62	1.83	0.37	1.42	0.55	1.71	0.52	1.69
Clinically Depressed (=1 if CIDI SF score \geq 3)	27,915	0.09	0.29	0.08	0.27	0.11	0.31	0.06	0.25	0.09	0.29	0.09	0.28
<i>Social groups</i>													
Upper Caste-Hindu (UC-Hindu)	27,915	0.2	0.4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scheduled Castes (SC)	27,915	0.2	0.4	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scheduled Tribes (ST)	27,915	0.08	0.27	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Other Backward Classes (OBC)	27,915	0.45	0.5	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Others	27,915	0.07	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
<i>Basic demographics</i>													
Gender (=1 if male)	27,915	0.5	0.5	0.49	0.5	0.49	0.5	0.49	0.5	0.5	0.5	0.49	0.5
Age (in years)	27,915	68.43	7.21	68.92	7.46	67.99	6.83	67.98	7.06	68.44	7.24	68.61	7.4
Never married (=1 if never married)	27,915	0.01	0.09	0.01	0.12	0.01	0.08	0.01	0.08	0.01	0.08	0.01	0.09
Rural (=1 if lives in rural area)	27,915	0.7	0.46	0.57	0.5	0.79	0.41	0.89	0.31	0.7	0.46	0.61	0.49
<i>Socioeconomic status (SES)</i>													
Household wealth per capita	27,915	13330.6	111224	33812	213369	4637	21486.9	4117.78	27837	8580.06	41054.5	18990.6	170443
log(Household wealth per capita + 1)	27,915	5.37	3.88	6.68	3.95	4.81	3.62	4.81	3.39	5.08	3.9	5.63	3.82
Highest level of education	27,915	1.22	1.96	2.25	2.46	0.65	1.43	0.51	1.24	1.11	1.79	1.35	2.02
Poverty (=1 if HH at/below poverty line)	27,915	0.2	0.4	0.1	0.3	0.27	0.44	0.38	0.49	0.19	0.39	0.13	0.34
Mother's highest level of education	27,915	0.13	0.59	0.34	0.93	0.04	0.33	0.02	0.24	0.09	0.48	0.2	0.65
Father's highest level of education	27,915	0.5	1.19	1.08	1.7	0.21	0.74	0.14	0.6	0.4	1.03	0.62	1.35

Notes: Household wealth is the sum of all wealth components less all debt components. Household wealth per capita is calculated as household wealth divided by the number of people living in the household. Highest level of education takes values between 0 and 9 with 0 indicates never attended school, 1 less than primary school (standard 1-4), 2 primary school (standard 5-7), 3 middle school (standard 8-9), 4 secondary school (standard 10-11), 5 higher secondary (standard 12), 6 diploma and certificate, 7 graduate (BA/BSc), 8 post-graduate (MA/MSc/PhD), and 9 professional course (MBBS, MD, MBA). LASI computes households' poverty status using the international poverty line as defined by the World Bank which is set at \$1.90 per person per day in 2011 purchasing power parity (PPP) dollars.

Table 2. Weighted summary statistics: life conditions and experiences

	Full Sample			Upper Caste-Hindu		Scheduled Caste		Scheduled Tribe		Other Backward Classes		Others	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Childhood conditions</i>													
Childhood health (=1 if childhood health status is good/very good, 0 if otherwise)	27,915	0.88	0.32	0.88	0.33	0.87	0.33	0.87	0.34	0.89	0.32	0.9	0.3
Childhood finance (=1 if pretty well off/average, 0 if otherwise)	27,915	0.57	0.5	0.68	0.47	0.46	0.5	0.4	0.49	0.6	0.49	0.59	0.49
<i>Experiences of discrimination</i>													
Everyday discrimination (=1 if treated with less courtesy/respect, 0 if otherwise)	27,915	0.12	0.33	0.1	0.3	0.14	0.35	0.11	0.32	0.13	0.34	0.08	0.27
Everyday discrimination due to caste/religion (=1 if faced discrimination due to caste/religious reasons, 0 if otherwise)	27,915	0.02	0.16	0.01	0.11	0.05	0.22	0.04	0.2	0.02	0.13	0.02	0.15
<i>Physical health</i>													
Number of persistent health problems	27,915	1.87	1.77	1.81	1.73	1.94	1.78	2.03	1.88	1.82	1.75	1.98	1.82
Activities of daily living (ADL): Reported problems	27,915	0.51	1.24	0.54	1.26	0.53	1.27	0.48	1.21	0.49	1.23	0.54	1.28
Instrumental activities of daily living (IADL): Reported problems	27,915	1.54	2.16	1.36	2.07	1.64	2.21	1.57	2.18	1.59	2.17	1.42	2.08
Self-reported health (1-5, 1 indicates excellent, 5 poor)	27,915	3.44	1	3.36	1.04	3.53	1	3.33	0.97	3.44	0.99	3.58	1
<i>Health Insurance</i>													
Any health insurance (=1 if yes)	27,915	0.19	0.39	0.14	0.35	0.19	0.39	0.3	0.46	0.2	0.4	0.13	0.34
<i>Physical activity</i>													
Vigorous physical activity frequency (1-5, 1 indicates everyday, 5 never)	27,915	3.97	1.63	4.1	1.56	3.96	1.62	3.61	1.72	3.92	1.65	4.27	1.43
<i>Neighborhood conditions</i>													
Safe from crime/violence when alone (1-4, 1 indicates completely safe, 4 not safe at all)	27,915	1.62	0.59	1.55	0.58	1.63	0.61	1.68	0.56	1.63	0.6	1.62	0.59
Safe walking in this area (1-4, 1 indicates completely safe, 4 not safe at all)	27,915	1.77	0.7	1.72	0.72	1.77	0.71	1.88	0.71	1.77	0.68	1.78	0.73

Table 2. Weighted summary statistics: life conditions and experiences (cont.)

	Full Sample			Upper Caste-Hindu		Scheduled Caste		Scheduled Tribe		Other Backward Classes		Others	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Housing & environment</i>													
Pucca house (=1 household has pucca house, =0 if otherwise)	27,915	0.54	0.5	0.73	0.44	0.43	0.49	0.26	0.44	0.53	0.5	0.62	0.48
Indoor pollution (=1 household exposed to indoor pollution, 0 if otherwise)	27,915	0.9	0.3	0.95	0.22	0.89	0.31	0.82	0.38	0.91	0.29	0.77	0.42
Electricity (=1 household has electricity, 0 if otherwise)	27,915	0.91	0.29	0.95	0.22	0.87	0.34	0.85	0.36	0.91	0.28	0.95	0.22
Improved sanitation (=1 household has improved sanitation, 0 if otherwise)	27,915	0.64	0.48	0.76	0.43	0.51	0.5	0.52	0.5	0.64	0.48	0.75	0.44
<i>Social networks</i>													
Contact with friend/relative (=1 if weekly in person, 0 if otherwise)	27,915	0.11	0.31	0.11	0.31	0.08	0.27	0.14	0.34	0.12	0.32	0.14	0.35
Social activities (=1 if participates in social activities yearly, 0 if otherwise)	27,915	0.05	0.21	0.06	0.23	0.04	0.19	0.05	0.22	0.05	0.21	0.05	0.22
Relative Deprivation													
Cantril ladder score (0-10, 1 indicates worst off, 10 best off)	27,915	4.22	2	4.86	2.04	3.68	1.87	3.56	1.9	4.26	1.96	4.37	1.91

Notes: Persistent health problems that respondents could report included swelling, dizziness, headache, wheezing, short of breath while awake, fatigue, backpain, jointpain, cough. ADL included six activities: bathe, dress, eat, getting in/out of bed, walking across a room, and using the toilet. Respondents could report whether they experienced difficulty with respect to an ADL. IADL included seven activities: making telephone calls, managing money, taking medications, shopping for groceries, preparing hot meals, getting around or finding an address in an unfamiliar place, and doing work around the house or garden. Respondents could report whether they experienced difficulty with respect to an IADL. Cantril ladder score is the respondent's rating of their place in society when they are shown an image of a ladder with 10 steps. The respondent is given the following prompt, "Think of this ladder as representing where people stand in our society. At the top of the ladder are the people who are the best off. At the bottom are the people who are the worst off. Please indicate the number given on the rung on the ladder where you would place yourself."

Table 3. Gaps in CES-D score and likelihood of depression

	CES-D score (0-10)			Depressed (=1 if yes)		
	OLS	Poisson	Negative Binomial	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]
SC	0.332*** (0.051)	0.330*** (0.051)	0.330*** (0.051)	0.069*** (0.013)	0.069*** (0.013)	0.069*** (0.013)
ST	0.270*** (0.066)	0.273*** (0.067)	0.273*** (0.067)	0.057*** (0.017)	0.059*** (0.017)	0.058*** (0.017)
OBC	0.185*** (0.042)	0.186*** (0.042)	0.186*** (0.042)	0.036*** (0.011)	0.036*** (0.011)	0.036*** (0.011)
Others	0.097 (0.066)	0.094 (0.067)	0.094 (0.067)	0.016 (0.017)	0.015 (0.018)	0.016 (0.017)
Demographics	YES	YES	YES	YES	YES	YES
State fixed effects	YES	YES	YES	YES	YES	YES
Survey year fixed effects	YES	YES	YES	YES	YES	YES
N	27,915	27,915	27,915	27,915	27,915	27,915

Notes: CES-D score ranges between 0-10. Individuals with CES-D score of 4 or more are classified as Depressed. Demographics include Gender, Age, Never Married and Rural. See Tables 1 and 2 for definition of all variables. The estimates reported for Poisson, Negative Binomial, Logit and Probit represent average marginal effects. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.

Table 4. Gaps in CIDI-SF score and likelihood of clinical depression

	CIDI-SF score (0-7)			Clinically Depressed (=1 if yes)		
	OLS	Poisson	Negative Binomial	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]
SC	0.127** (0.050)	0.123*** (0.047)	0.159*** (0.047)	0.021*** (0.008)	0.021*** (0.008)	0.021*** (0.008)
ST	-0.070 (0.057)	-0.069 (0.055)	-0.025 (0.055)	-0.010 (0.010)	-0.010 (0.009)	-0.008 (0.009)
OBC	0.093** (0.044)	0.088** (0.042)	0.118*** (0.040)	0.016** (0.007)	0.016** (0.007)	0.016** (0.007)
Others	0.045 (0.065)	0.054 (0.064)	0.073 (0.062)	0.006 (0.011)	0.008 (0.010)	0.008 (0.010)
Demographics	YES	YES	YES	YES	YES	YES
State fixed effects	YES	YES	YES	YES	YES	YES
Survey year fixed effects	YES	YES	YES	YES	YES	YES
N	27,915	27,915	27,915	29,915	27,898	27,898

Notes: CIDI-SF score ranges between 0-7. Individuals with CIDI-SF score of 3 or more are classified as Clinically Depressed. Demographics include Gender, Age, Never Married and Rural. See Tables 1 and 2 for definition of all variables. The estimates reported for Poisson, Negative Binomial, Logit and Probit represent average marginal effects. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.

Table 5. Gaps in CES-D score and likelihood of depression accounting for SES and life conditions and experiences

	CES-D Score (0-10)						Depressed (=1 if yes)					
	OLS	Poisson	Negative Binomial	OLS	Poisson	Negative Binomial	OLS	Logit	Probit	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
SC	0.151*** (0.050)	0.143*** (0.050)	0.143*** (0.050)	0.052 (0.047)	0.039 (0.048)	0.039 (0.048)	0.034*** (0.013)	0.033** (0.013)	0.033*** (0.013)	0.008 (0.012)	0.007 (0.012)	0.006 (0.012)
ST	0.089 (0.066)	0.088 (0.068)	0.088 (0.068)	0.003 (0.061)	0.006 (0.063)	0.006 (0.063)	0.021 (0.017)	0.022 (0.017)	0.022 (0.017)	-0.002 (0.016)	-0.001 (0.017)	-0.002 (0.016)
OBC	0.063 (0.042)	0.060 (0.043)	0.060 (0.043)	0.031 (0.039)	0.025 (0.041)	0.025 (0.041)	0.012 (0.011)	0.012 (0.011)	0.012 (0.011)	0.004 (0.010)	0.004 (0.011)	0.004 (0.011)
Others	-0.018 (0.064)	-0.027 (0.065)	-0.027 (0.065)	-0.032 (0.057)	-0.045 (0.059)	-0.045 (0.059)	-0.006 (0.017)	-0.008 (0.018)	-0.007 (0.017)	-0.010 (0.016)	-0.013 (0.016)	-0.014 (0.016)
Demographics	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Life conditions & experiences	NO	NO	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES
State fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Survey year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	27,915	27,915	27,915	27,915	27,915	27,915	27,915	27,915	27,915	27,915	27,915	27,915

Notes: CES-D score ranges between 0-10. Individuals with CES-D score of 4 or more are classified as Depressed. Demographics include Gender, Age, Never Married and Rural. SES includes log(Household wealth per capita + 1), Highest level of education, Poverty status, Mother's highest level of education Father's highest level of education. Life conditions and experiences include Childhood health, Childhood finance, Experience of everyday discrimination, Caste/religious discrimination, Number of persistent health problems, Reported ADL problems, Reported IADL problems, Self-reported health, Any health insurance, Vigorous physical activity frequency, Safe from crime/violence when alone, Safe walking in this area, Pucca house, Indoor pollution, Electricity, Improved sanitation, Contact with friend/relative, Social activities, and Cantril ladder score. See Tables 1 and 2 for definition of all variables. The estimates reported for Poisson, Negative Binomial, Logit and Probit represent average marginal effects. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.

Table 6. Gaps in CIDI-SF score and likelihood of clinical depression accounting for SES and life conditions and experiences

	CIDI-SF Score (0-7)						Clinically Depressed (=1 if yes)					
	OLS	Poisson	Negative Binomial	OLS	Poisson	Negative Binomial	OLS	Logit	Probit	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
SC	0.095*	0.089*	0.115**	0.015	0.002	0.023	0.016*	0.015*	0.015*	0.003	0.001	0.001
	(0.051)	(0.049)	(0.049)	(0.049)	(0.047)	(0.060)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
ST	-0.099*	-0.096*	-0.058	-0.160***	-0.139**	-0.138*	-0.015	-0.014	-0.013	-0.024**	-0.022**	-0.022**
	(0.058)	(0.056)	(0.056)	(0.057)	(0.054)	(0.072)	(0.010)	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)
OBC	0.071	0.065	0.094**	0.036	0.029	0.062	0.012*	0.012	0.012*	0.007	0.006	0.006
	(0.044)	(0.043)	(0.042)	(0.043)	(0.043)	(0.056)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Others	0.024	0.032	0.042	0.038	0.039	-0.014	0.003	0.004	0.004	0.005	0.005	0.003
	(0.065)	(0.064)	(0.061)	(0.062)	(0.066)	(0.078)	(0.011)	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)
Demographics	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Life conditions & experiences	NO	NO	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES
State fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Survey year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	27,915	27,915	27,915	27,915	27,915	27,915	27,915	27,898	27,898	27,915	27,898	27,898

Notes: CIDI-SF score ranges between 0-7. Individuals with CIDI-SF score of 3 or more are classified as Clinically Depressed. Demographics include Gender, Age, Never Married and Rural. SES includes log(Household wealth per capita + 1), Highest level of education, Poverty status, Mother's highest level of education Father's highest level of education. Life conditions and experiences include Childhood health, Childhood finance, Experience of everyday discrimination, Caste/religious discrimination, Number of persistent health problems, Reported ADL problems, Reported IADL problems, Self-reported health, Any health insurance, Vigorous physical activity frequency, Safe from crime/violence when alone, Safe walking in this area, Pucca house, Indoor pollution, Electricity, Improved sanitation, Contact with friend/relative, Social activities, and Cantril ladder score. See Tables 1 and 2 for definition of all variables. The estimates reported for Poisson, Negative Binomial, Logit and Probit represent average marginal effects. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.

Table 7. Gaps in life satisfaction

	Life Satisfaction Index		
	[1]	[2]	[3]
SC	-0.166*** (0.024)	-0.075*** (0.024)	-0.008 (0.023)
ST	-0.139*** (0.030)	-0.048 (0.031)	0.018 (0.031)
OBC	-0.067*** (0.020)	-0.004 (0.020)	0.024 (0.020)
Others	-0.013 (0.030)	0.045 (0.030)	0.056* (0.029)
Demographics	YES	YES	YES
SES	NO	YES	YES
Life conditions & experiences	NO	NO	YES
State fixed effects	YES	YES	YES
Survey year fixed effects	YES	YES	YES
N	27,903	27,903	27,903

Notes: Regressions estimated using OLS. Life satisfaction index ranges between 1-3 with higher values indicating greater satisfaction with life. Demographics include Gender, Age, Never Married and Rural. SES includes log(Household wealth per capita + 1), Highest level of education, Poverty status, Mother's highest level of education Father's highest level of education. Life conditions and experiences include Childhood health, Childhood finance, Experience of everyday discrimination, Caste/religious discrimination, Number of persistent health problems, Reported ADL problems, Reported IADL problems, Self-reported health, Any health insurance, Vigorous physical activity frequency, Safe from crime/violence when alone, Safe walking in this area, Pucca house, Indoor pollution, Electricity, Improved sanitation, Contact with friend/relative, Social activities, and Cantril ladder score. See Tables 1 and 2 for definition of all variables. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.

Table A1. Gaps in CES-D score and likelihood of depression accounting for SES and life conditions and experiences: Full Results

	CES-D Score (0-10)			Depressed (=1 if yes)		
	OLS	Poisson	Negative Binomial	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]
SC	0.052 (0.047)	0.039 (0.048)	0.039 (0.048)	0.008 (0.012)	0.007 (0.012)	0.006 (0.012)
ST	0.003 (0.061)	0.006 (0.063)	0.006 (0.063)	-0.002 (0.016)	-0.001 (0.017)	-0.002 (0.016)
OBC	0.031 (0.039)	0.025 (0.041)	0.025 (0.041)	0.004 (0.010)	0.004 (0.011)	0.004 (0.011)
Others	-0.032 (0.057)	-0.045 (0.059)	-0.045 (0.059)	-0.010 (0.016)	-0.013 (0.016)	-0.014 (0.016)
Male	-0.029 (0.025)	-0.031 (0.025)	-0.031 (0.025)	-0.010 (0.007)	-0.010 (0.007)	-0.009 (0.007)
Age	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Never married	0.268* (0.140)	0.220* (0.120)	0.220* (0.120)	0.035 (0.035)	0.035 (0.033)	0.037 (0.033)
Rural	-0.049 (0.037)	-0.043 (0.038)	-0.043 (0.038)	-0.019* (0.010)	-0.018* (0.010)	-0.019* (0.010)
Log(Wealth + 1)	-0.032*** (0.004)	-0.033*** (0.004)	-0.033*** (0.004)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
Highest education	-0.014* (0.009)	-0.023** (0.010)	-0.023** (0.010)	-0.002 (0.002)	-0.004 (0.003)	-0.004 (0.002)
Poverty	0.031 (0.036)	0.026 (0.035)	0.026 (0.035)	0.014 (0.010)	0.013 (0.009)	0.014 (0.010)
Mother's education	0.028 (0.024)	0.033 (0.027)	0.033 (0.027)	0.004 (0.006)	0.006 (0.007)	0.006 (0.006)
Father's education	-0.005 (0.012)	-0.007 (0.013)	-0.007 (0.013)	0.000 (0.003)	-0.000 (0.004)	-0.000 (0.004)
Childhood health	-0.223*** (0.041)	-0.200*** (0.038)	-0.200*** (0.038)	-0.033** (0.013)	-0.030** (0.012)	-0.031*** (0.012)
Childhood finance	0.052* (0.030)	0.054* (0.029)	0.054* (0.029)	0.010 (0.008)	0.010 (0.008)	0.010 (0.008)
Everyday discrimination	0.602*** (0.048)	0.510*** (0.040)	0.510*** (0.040)	0.147*** (0.014)	0.124*** (0.012)	0.127*** (0.012)
Caste/religious discrimination	0.402*** (0.110)	0.310*** (0.085)	0.310*** (0.085)	0.162*** (0.029)	0.138*** (0.025)	0.139*** (0.025)
Number of persistent health problems	0.085*** (0.009)	0.079*** (0.009)	0.079*** (0.009)	0.023*** (0.003)	0.022*** (0.002)	0.022*** (0.002)
ADL problems	0.152*** (0.015)	0.123*** (0.012)	0.123*** (0.012)	0.029*** (0.004)	0.024*** (0.003)	0.024*** (0.003)
IADL problems	0.032*** (0.008)	0.028*** (0.008)	0.028*** (0.008)	0.013*** (0.002)	0.011*** (0.002)	0.011*** (0.002)
Self-reported health	0.096*** (0.015)	0.103*** (0.015)	0.103*** (0.015)	0.029*** (0.004)	0.030*** (0.004)	0.030*** (0.004)

Table A1. Gaps in CES-D score and likelihood of depression accounting for SES and life conditions and experiences: Full Results (cont.)

	CES-D Score (0-10)			Depressed (=1 if yes)		
	OLS	Poisson	Negative Binomial	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]
Health insurance	-0.067* (0.037)	-0.068* (0.038)	-0.068* (0.038)	-0.011 (0.010)	-0.011 (0.010)	-0.010 (0.010)
Vigorous physical activity	0.018** (0.009)	0.018* (0.009)	0.018* (0.009)	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)
Safe from crime/violence when alone	0.375*** (0.035)	0.354*** (0.035)	0.354*** (0.035)	0.062*** (0.009)	0.059*** (0.009)	0.060*** (0.009)
Safe walking in this area	-0.039 (0.031)	-0.042 (0.031)	-0.042 (0.031)	-0.001 (0.008)	-0.001 (0.008)	-0.002 (0.008)
Pucca house	-0.087*** (0.032)	-0.086*** (0.031)	-0.086*** (0.031)	-0.017** (0.009)	-0.017** (0.008)	-0.018** (0.008)
Indoor pollution	-0.117** (0.047)	-0.099** (0.045)	-0.099** (0.045)	-0.027** (0.012)	-0.026** (0.012)	-0.025** (0.012)
Electricity	-0.049 (0.053)	-0.028 (0.048)	-0.028 (0.048)	-0.025 (0.016)	-0.020 (0.014)	-0.021 (0.014)
Improved sanitation	-0.051 (0.031)	-0.050 (0.031)	-0.050 (0.031)	-0.010 (0.009)	-0.010 (0.008)	-0.009 (0.008)
Contact with friend/relative	-0.073 (0.045)	-0.098** (0.049)	-0.098** (0.049)	-0.007 (0.012)	-0.010 (0.013)	-0.011 (0.012)
Social activities	-0.004 (0.055)	-0.019 (0.062)	-0.019 (0.062)	0.028* (0.015)	0.029* (0.016)	0.028* (0.016)
Cantril ladder score	-0.070*** (0.008)	-0.072*** (0.009)	-0.072*** (0.009)	-0.016*** (0.002)	-0.016*** (0.002)	-0.016*** (0.002)
State fixed effects	YES	YES	YES	YES	YES	YES
Survey year fixed effects	YES	YES	YES	YES	YES	YES
N	27,915	27,915	27,915	27,915	27,915	27,915

Notes: CES-D score ranges between 0-10. Individuals with CES-D score of 4 or more are classified as Depressed. See Tables 1 and 2 for definition of all variables. The estimates reported for Poisson, Negative Binomial, Logit and Probit represent average marginal effects. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.

Table A2. Gaps in CIDI SF score and likelihood of clinical depression accounting for SES and life conditions and experiences: Full Results

	CIDI SF Score (0-7)			Clinically Depressed (=1 if yes)		
	OLS	Poisson	Negative Binomial	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]
SC	0.015 (0.049)	0.002 (0.047)	0.023 (0.060)	0.003 (0.008)	0.001 (0.008)	0.001 (0.008)
ST	-0.160*** (0.057)	-0.139** (0.054)	-0.138* (0.072)	-0.024** (0.010)	-0.022** (0.009)	-0.022** (0.009)
OBC	0.036 (0.043)	0.029 (0.043)	0.062 (0.056)	0.007 (0.007)	0.006 (0.007)	0.006 (0.007)
Others	0.038 (0.062)	0.039 (0.066)	-0.014 (0.078)	0.005 (0.010)	0.005 (0.011)	0.003 (0.010)
Male	-0.020 (0.028)	-0.036 (0.028)	-0.080** (0.039)	-0.002 (0.005)	-0.003 (0.005)	-0.004 (0.005)
Age	-0.007*** (0.002)	-0.006*** (0.002)	-0.009*** (0.002)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Never married	-0.028 (0.133)	-0.084 (0.123)	0.036 (0.152)	0.004 (0.024)	0.000 (0.022)	0.003 (0.021)
Rural	0.037 (0.036)	0.055 (0.040)	0.037 (0.048)	0.008 (0.006)	0.011 (0.007)	0.010 (0.006)
Log(Wealth + 1)	-0.001 (0.004)	-0.001 (0.004)	0.004 (0.006)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Highest education	0.037*** (0.008)	0.030*** (0.009)	0.031** (0.012)	0.006*** (0.001)	0.005*** (0.002)	0.005*** (0.001)
Poverty	-0.036 (0.040)	-0.023 (0.037)	-0.052 (0.047)	-0.006 (0.007)	-0.004 (0.006)	-0.005 (0.006)
Mother's education	-0.005 (0.023)	-0.007 (0.032)	0.023 (0.037)	-0.001 (0.004)	-0.001 (0.005)	-0.001 (0.005)
Father's education	0.007 (0.012)	0.004 (0.014)	-0.017 (0.017)	0.001 (0.002)	0.001 (0.002)	0.000 (0.002)
Childhood health	0.012 (0.044)	0.013 (0.037)	-0.030 (0.052)	-0.000 (0.008)	-0.000 (0.006)	-0.001 (0.006)
Childhood finance	-0.075** (0.030)	-0.064** (0.028)	-0.076** (0.037)	-0.011** (0.005)	-0.010** (0.005)	-0.010** (0.005)
Everyday discrimination	0.371*** (0.054)	0.245*** (0.034)	0.369*** (0.049)	0.068*** (0.009)	0.047*** (0.006)	0.050*** (0.006)
Caste/religious discrimination	0.034 (0.133)	0.003 (0.072)	-0.030 (0.107)	0.005 (0.022)	0.003 (0.014)	0.003 (0.014)
Number of persistent health problems	0.079*** (0.010)	0.056*** (0.007)	0.069*** (0.010)	0.013*** (0.002)	0.010*** (0.001)	0.010*** (0.001)
ADL problems	0.081*** (0.017)	0.027*** (0.009)	0.058*** (0.013)	0.013*** (0.003)	0.006*** (0.002)	0.007*** (0.002)
IADL problems	0.065*** (0.010)	0.053*** (0.007)	0.062*** (0.010)	0.011*** (0.002)	0.009*** (0.001)	0.009*** (0.001)
Self-reported health	0.149*** (0.016)	0.173*** (0.019)	0.187*** (0.021)	0.025*** (0.003)	0.028*** (0.003)	0.027*** (0.003)

Table A2. Gaps in CIDI SF score and likelihood of clinical depression accounting for SES and life conditions and experiences: Full Results (cont.)

	CIDI SF Score (0-7)			Clinically Depressed (=1 if yes)		
	OLS	Poisson	Negative Binomial	OLS	Logit	Probit
	[1]	[2]	[3]	[4]	[5]	[6]
Health insurance	-0.014 (0.030)	-0.017 (0.042)	-0.003 (0.056)	-0.000 (0.005)	0.000 (0.007)	0.001 (0.006)
Vigorous physical activity	-0.007 (0.009)	-0.007 (0.009)	-0.005 (0.012)	-0.001 (0.001)	-0.001 (0.002)	-0.001 (0.001)
Safe from crime/violence when alone	0.009 (0.035)	0.008 (0.031)	0.001 (0.037)	0.001 (0.006)	0.001 (0.005)	0.000 (0.005)
Safe walking in this area	0.097*** (0.032)	0.082*** (0.029)	0.086** (0.034)	0.017*** (0.005)	0.015*** (0.005)	0.015*** (0.005)
Pucca house	-0.098*** (0.033)	-0.086*** (0.033)	-0.106** (0.042)	-0.013** (0.006)	-0.011** (0.005)	-0.011** (0.005)
Indoor pollution	0.127*** (0.045)	0.138*** (0.050)	0.116* (0.068)	0.019** (0.008)	0.020** (0.008)	0.019** (0.008)
Electricity	-0.025 (0.067)	0.017 (0.047)	-0.000 (0.063)	-0.006 (0.011)	-0.000 (0.008)	-0.001 (0.009)
Improved sanitation	-0.018 (0.033)	-0.024 (0.030)	-0.014 (0.040)	-0.003 (0.006)	-0.004 (0.005)	-0.004 (0.005)
Contact with friend/relative	-0.038 (0.039)	-0.061 (0.047)	-0.010 (0.061)	-0.004 (0.007)	-0.006 (0.008)	-0.004 (0.007)
Social activities	-0.036 (0.044)	-0.071 (0.071)	-0.132 (0.081)	-0.002 (0.008)	-0.004 (0.011)	-0.003 (0.010)
Cantril ladder score	-0.043*** (0.009)	-0.042*** (0.009)	-0.055*** (0.012)	-0.007*** (0.001)	-0.007*** (0.001)	-0.007*** (0.001)
State fixed effects	YES	YES	YES	YES	YES	YES
Survey year fixed effects	YES	YES	YES	YES	YES	YES
N	27,915	27,915	27,915	27,915	27,898	27,898

Notes: CIDI-SF score ranges between 0-7. Individuals with CIDI-SF score of 3 or more are classified as Clinically Depressed. See Tables 1 and 2 for definition of all variables. The estimates reported for Poisson, Negative Binomial, Logit and Probit represent average marginal effects. Survey weights are used in all regressions. Robust standard error in parenthesis, corrected for clustering within SSUs (which are villages in rural areas and wards in urban areas). *Significant at 10%, **Significant at 5%, ***Significant at 1%.