Does early-life migration experience determine health and health-risk behavior in later life? Evidence from elderly returns migrants in Kerala, India

Manoj Paul, Sourav Mandal, Ramkrishna Samanta [*]

International Institute for Population Sciences (IIPS), Govandi Station Road, Deonar, Mumbai-400088, Maharashtra, India

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ABSTRACT

Becoming elderly is an intrinsic part of life, and the burden of disease increases with age. However, the early life migration experience and occupational hazards at the destination can lead to serious health problems later in life. This study aims to understand the association between early life migration and the health and risky behavior of elderly return migrants using data from the Kerala Migration Survey in 2018. The results of bivariate and multivariate analyses show that the majority of migrants return due to retirement and ill health at the average age of 51 and suffer from poor health and multiple diseases. More than half (55%) of elderly returnees reported poor health, and among them, 70% have at least one chronic disease. The early life migration experience and injuries at the destination are the main determinants of poor self-rated health and chronic disease. Furthermore, elderly return migrants have high-risk health behaviours such as smoking and alcohol consumption, as well as less access to health schemes. Despite some shortcomings, this study identifies the most vulnerable groups among the elderly and their health characteristics. This will help to promote healthy aging in Kerala, India, or areas with increasing numbers of elderly and return migrants around the world.

1. Introduction

Migration is a key strategy for millions of individuals to escape poverty, better employment opportunities, and better standard of living especially for the developing nations (Massey, 1988). Following other developing nations, India's lack of economic opportunities and low wages have resulted millions of out migrations within India or outside the countries (Deshingkar et al., 2008; Zachariah & Rajan, 2011). According to the Economic Survey of India, 2016–17 around 140 million people of India migrated internally (60 million inter-state and 80 million inter-district) for the reason of employment between 2011 and 2016 while, around 30 million migrated internationally, primarily to the Gulf countries for the low- and semi-skilled work (Wadhawan, 2018). Evidence suggests that the process of migration is highly male selective mainly from rural to urban (rural or abroad) (Dasgupta, 1978) within the 15 and over age group (ILO, 2021) and living more than ten years of their life span the destination state or country. Long back (Ravenstein, 1885) conceptualized that each migration stream also produces a counter or return stream of migration which may not be necessarily equal. Thus, means on average majority of migrants are returning to

their homes after accomplishing their goals, ending work tenure or retirement at their late working age (average age at return 48 years) (Rajan & Zachariah, 2019) and very soon they enter in an elderly population group.

India's elderly population is growing rapidly, with over 140 million people over the age of 60 (Bloom et al., 2021). This increase in life expectancy also brings a higher risk of chronic diseases such as diabetes, heart disease, cancer, and arthritis and approximately 75 million people aged 60 years or more suffer from chronic disease (LASI, 2021). Literature from earlier studies suggests that the health status of the elderly determine by the current socioeconomic and demographic characteristics (Chen, 2022) as well as early life events such as childhood deprivation, health, nutritional status, and environmental conditions (Arpino et al., 2018; Mceniry, n.d.; Muhammad et al., 2022) and migration status (Fastame et al., 2022; Ghimire & Bhandari, 2020). It is widely acknowledged that migrant workers are the most vulnerable members of society, they are mainly working in so-called 3-D occupations, dirty, dangerous, and demanding (sometimes degrading or demeaning) (Quandt et al., 2012). Globally, migrant workers have higher rates of negative occupational exposures, leading to poor health outcomes, and

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workplace injuries (Aktas et al., 2022; Bener, 2017), which laid them to severe health crises in later life.

Emigration from India is very prominent since the very past and Kerala, Tamil Nadu, and Andhra Pradesh are the major source of out migration (Bhagat et al., 2013). In Kerala, high employment opportunity at destination and aspirations leads to a massive outflow of youth within or out of countries particularly in Gulf countries(Amuthan, 2020). According to the National Statistical Office (NSO) Elderly in India 2021 report, Kerala currently has the highest elderly population (16.5 percent) (NSO, 2021), among them 1.3 million elderly are return migrants. Kerala migration survey estimated that the mean age of return is 48 years and around 20 percent return after the age 60 (Rajan & Zachariah, 2019). Thus, on average after 12 years all the return migrants enter into the elderly age group with several circumstances So, there is a need to study the health status of elderly return migrants in Kerala as most of the migrants work in 3D jobs. Hence, the main objective of this study is to understand the existing impact of early life migration experience on the health and health risk behavior of elderly return migrants. The findings of this study will help fill a vacuum in the literature and give the knowledge necessary for advocacy and formulating relevant solutions to the elderly return migrant for healthy aging.

2. Methods

2.1. Data

The study used data from the Kerala Migration Survey (KMS), 2018, undertaken by the Centre for Development Studies (CDS), Kerala. The KMS survey covered the entire 14 districts of Kerala. The sample households are distributed between the district's rural and Urban strata in proportion to the number of households according to the 2011 census. This survey interviewed 15000 households and 60670 individuals, including 2525 return migrants. Total 10980 elderly (60+ age) population was selected for the study. Out of them 599 were return migrants and 10381 are non-migrant elderly (Rajan & Zachariah, 2019). The details of the sample distribution are shown in Fig. 1.

2.2. Study population

The study population consisted of elderly return migrants as well as elderly non-migrants aged 60 and above who lived in Kerala during the survey. This study defines the elderly return migrants as person who have lived outside Kerala for at least 6 months either for work or study or any other purposes and now live in Kerala, and whose current age is 60 and above.

2.3. Outcome variable

This study examines several aspects of the health status of the elderly. These include self-rated health status and chronic disease.

2.3.1. Self-rated health

Self-rated health (SRH), also known as self-perceived health, is a simple and easy way to assess a person's general health (Jylhä, 2009). Respondents in the survey were asked, "In general, how would you rate your health?". The question had five response categories (Excellent, very good, good, fair, and poor). The authors categorized the response categories into two groups: "good," which included "excellent", "very good" and "good," and "poor," which included "fair" and "poor".

2.3.2. Chronic disease

A general definition of chronic disease is a condition that lasts one year or longer and requires continuing medical care or restricts daily activities, or both (CDC, 2023). Individuals in this survey were asked that "Have a chronic disease? And they respond as "yes" or "no". These variables are categorized into two groups: "yes" which was coded as 1 and "no" which was coded as 0.

2.3.3. Smoke

Respondents were also asked, "Do you smoke?". If the answer was yes then coded as 1 and if no coded as 0.

2.3.4. Consume alcohol

Respondents were also asked "Consume alcohol/liquor?". If the answer was "yes" then coded as 1 and if "no" coded as 0.

2.3.5. RSBY health scheme

Respondent asked about being a member of RSBY (Rashtriya Swasthya Bima Yojana). The question had two response categories (yes or no). The authors categorized the response "yes" = 1 and "no" =0.

2.4. Explanatory variable

2.4.1. Migration status of elderly

The migration status of the elderly was taken as the main explanatory variable. The variable was categorized into two groups first, elderly return migrants and elderly non-migrants.
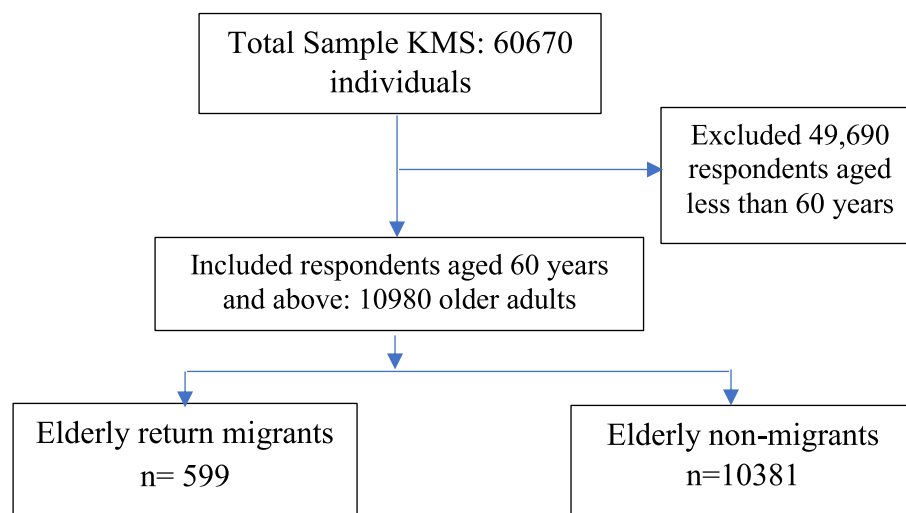

Figure-1. Framework for selecting the study sample.

2.4.2. Control variable

Several demographic and socioeconomic variables were used as control variables in this study. Demographic variables included age (60–69 years, 70–79 years, and 80 years and above), sex (male and female), marital status (single, married, widow/widower/divorced/separated), relationship with household head (head of household, husband/wife, father/mother/mother-in-law, others) and economic activity (self-employment, agricultural labour, non-agricultural labour, household work, pensioners, too old to work, others).

2.5. Statistical analysis

Analysis for this study was confined to those who were aged 60 years or above and had a migration history (n = 10980). Univariate and bivariate analyses were used to analyze the data. Initially, univariate or descriptive analysis was used to describe the respondents' socio-demographic characteristics. An un-adjusted and adjusted binary logistic regression models were performed separately for each outcome variable to examine the impact of early life migration history at old age. Further another two binary logistic regression model was performed used to determine the factors affecting self-rated health and disabilities among elderly return migrants. The entire statistical analysis was carried out using STATA v17.

3. Result

3.1. Background characteristics

The result of this study shows that more than 70% of elderly return migrants are aged between 60 and 69 years and nearly 90% of elderly returnees are male, while in the case of elderly non-migrants, most are female (55.4%). In Kerala, more than 60% of the elderly are the head of their household and among the elderly return migrants 87% are the head of the household but in the case of elderly non-migrants, it's 60%. In terms of marital status, there is a significant difference between elderly return migrants and elderly non-migrants. Among elderly return migrants, 94% are married, compared to 60% of elderly non-migrants. The proportion of elderly people who are too old to work is higher both

among elderly return migrants and non-migrants. Elderly return migrants and non-migrants do not significantly differ in terms of pensioners. However, self-employment (21.2%) ranks third among economic activities for the elderly return migrants, while home work (21.5%) for non-migrants (Table 1).

3.2. Migration history of return migrants

In terms of elderly return migrants, around 21% return from different states of India, while 78% return from international destinations, and the majority of them are from Gulf countries. The mean age of return was 51.3 years and around 55% of elderly returnees spent more than 20 years abroad. The majority of migrants work in offices (18%), shops (22.5%), and the construction sector (16.7%) at the place of destination (Table 2). Retirement is the most common cause for elderly migrants to

Table 2
Migration history of elderly return migrants.

Migration history	Frequency	Percentage
Migration status		
Domestic returnee	129	21.5
International returnee	470	78.5
Duration of living at destination		
1–4 year	51	8.5
5–9 year	68	11.4
10–19 year	148	24.7
20+	332	55.4
Mean duration of living	599	21.5
Mean Age at return	599	51.3
Nature of work		
Office	108	18
Shop	135	22.5
Construction site	100	16.7
House	33	5.5
Factory	35	5.8
Farm	15	2.5
Open space	55	9.2
Workshop	46	7.7
Others	72	12
Total	599	100

Table 1
Background characteristics of study population (n = 10980).

Background characteristics	Elderly Non-migrant		Elderly return migrants		Total	
	Freq.	Percentage	Freq.	Percentage	Freq.	Percentage
Age group						
60–69	6,044	58.2	421	70.3	6,465	58.9
70–79	3,018	29.1	147	24.5	3,165	28.8
80+	1,319	12.7	31	5.2	1,350	12.3
Gender						
Male	4,627	44.6	543	90.7	5,170	47.1
Female	5,754	55.4	56	9.3	5,810	52.9
Relation to household head						
Head of household	6,231	60	522	87.1	6,753	61.5
Husband/wife	2,470	23.8	55	9.2	2,525	23
Father/Mother/Mother-in-law	1,321	12.7	5	0.8	1,326	12.1
Others	359	3.5	17	2.8	376	3.4
Marital status						
Married	6,885	66.3	561	93.7	7,446	67.8
Widow/widower	3,217	31	32	5.3	3,249	29.6
Never married	279	2.7	6	1	285	2.6
Economic activity						
Self-employment	733	7.1	127	21.2	860	7.8
Agricultural labour	502	4.8	26	4.3	528	4.8
Non-Agricultural labour	461	4.4	41	6.8	502	4.6
Household work	2,227	21.5	37	6.2	2,264	20.6
Pensioners	2,208	21.3	128	21.4	2,336	21.3
Too old to work	3,500	33.7	163	27.2	3,663	33.4
Others	750	7.2	77	12.9	827	7.5
Total	10381		599			10980

return (29.7%), followed by job loss (16.9%) and illness (14.2%). A very minimal number of elderly migrants return due to care for the elderly (3%) (Table 3).

3.3. Status of self-rated health and chronic disease by migration status

In Kerala, poor self-rated health was higher among the elderly return (55%) in contrast to elderly non-migrants (48%). Chronic disease was also more prevalent among the elderly return migrants (70%) than non-migrants (61%) and the majority of them suffered from blood pressure, diabetes, and heart disease. Only about 40% of elderly people are covered by the RSBY health plan. Elderly return migrants had less access to the RSBY health scheme (26.04%) than non-migrants (41.39%). Around 93% of the elderly are non-smokers, and there is no such difference in smoking habits between elderly return migrants and non-migrants. Alcohol use is higher among elderly returning migrants (13.36%) than non-migrants (7.12%) (Table 4).

3.4. Impact of migration experience on health and health risk behavior

The result of multivariate logistic regression, the elderly return migrants have a lower probability of reporting good self-rated health (OR = 0.74, CI = 0.62, 0.87) than non-migrants. The result also shows that elderly return migrants are more likely to experience any chronic disease (OR = 2.03, CI = 1.41, 2.94) than elderly non-migrants. Compare to non-migrants, elder return migrants are more likely to smoke (OR = 1.48, CI = 1.18, 1.96). The probability of drinking alcohol is significantly higher among elderly return migrants (OR = 2.01, CI = 1.57, 2.57). Elderly return migrants have significantly lower odds of being covered by the RSBY health scheme than non-migrants (OR = 0.45, CI = 0.32, 0.66) (Table 5).

3.5. Determinants of self-rated health and chronic disease of the elderly return migrants

In Kerala, with increasing age, the probability of poor self-rated health (OR = 1.60, CI = 1.06, 2.42 and OR = 4.27, CI = 1.77, 10.28) and any chronic disease (OR = 2.00, CI = 1.23, 3.24) also increasing. Further, migrants those return due to illness has a higher probability of poor self-rated health (OR = 4.82, CI = 1.62, 14.17) and chronic disease (OR = 3.61, CI = 1.23, 10.58) than those migrants who return after accomplishing the goal for migration. Similarly, elderly returnees who were injured at their destination have higher odds of poor self-rated health (OR = 1.28, CI = 0.81, 2.01) and chronic disease (OR = 1.89, CI = 1.11, 3.23) (Table 6).

4. Discussion

In this study, we analyzed the health determinants of elderly return migrants based on the Kerala Migration Survey (KMS). This study found that most of the elderly migrants returned at the age group of 60–69 and the main reason for return migration is retirement. Because the retirement age in India and abroad typically falls between the ages of 60–65

Table 3
Reason for return.

Reason for return	Frequency	Percentage
To retire	178	29.7
Lost job/laid off	101	16.9
Missed family	60	10
Illness	85	14.2
To care for elderly	18	3
Accomplished goals for migration	25	4.2
Prefer to work in Kerala	32	5.3
Others	100	16.7
Total	599	100

Table 4
Status of Self-Rated health and chronic disease by migration status of elderly.

Outcome variables	Elderly non-migrant	Elderly return migrant	Total
Self-Rated health*			
Poor	48.08	55.57	55.16
Good	51.92	44.43	44.84
Chronic disease*			
No disease	39.59	30.88	39.12
High/low blood pressure	21.65	23.21	21.73
Heart disease	6.56	12.69	6.89
Diabetes	14.02	16.69	14.16
Cancer	1.08	0.5	1.05
Arthritis	1.72	1.17	1.69
Thyroid	1.49	0.67	1.45
Others	13.89	14.19	13.91
RSBY Health Scheme*			
No	58.61	73.96	59.44
Yes	41.39	26.04	40.56
Smoke*			
No	93.25	90.32	93.09
Yes	6.75	9.68	6.91
Consume Alcohol*			
No	92.88	86.64	92.54
Yes	7.12	13.36	7.46

* Chi square P= <0.001.

Table 5
Odds ratio (OR) and 95% confidence interval (CI) for the effect of migration experience on health and health seeking behavior based on logistic regression.

Dependent Variable	Elderly non-migrant = reference category		
	OR	P value	CI (95%)
Self-rated Health (ref: Poor health)			
Good Health	0.74	<0.001	0.62, 0.87
Chronic Disease (ref: No)			
Yes	2.03	<0.001	1.41, 2.94
Smoking (ref: No)			
Yes	1.48	<0.001	1.18, 1.96
Consume Alcohol (ref: No)			
Yes	2.01	<0.001	1.57, 2.57
RSBY Health Scheme (ref: No)			
Yes	0.45	<0.001	0.32, 0.66

Notes: Logistic regression was run separately for each dependent variable. Models were fitted after controlling for age, sex, marital status, Relation to household head, Economic activity.

years (Warnes & A, 2009), which raises the probability of return migration at this stage. After retirement elderly migrants prefer to live and work in their home country where their families are. Some migrants also intend to accumulate savings while they are abroad to use when they retire and return home (Dustmann & Glitz, 2011). According to a Swedish study, as persons reach the age of 65, the probability of returning migrants increases, and after this age, the rate of return migration declines (Klinthäll, 2006). This study shows that self-employment is the primary economic activity for elderly return migrants. According to King et al. (1986), elderly return migrants in Italy exhibit a strong desire for self-employment and they conclude that this tendency for self-employment is the sign of retirement from the labor market. Self-employment requires startup investment, and financial restrictions impede the growth of small businesses and the large transitory foreign income enables migrants who want to switch occupations to self-employment to accumulate savings (Ilahi, 1999).

The early migration history and health status are negatively associated. Unhealthy migrants have a greater propensity to return or migrate in search of employment closer to home, but healthier migrants are more likely to stay at their destinations (Lu & Qin, 2014). The results of this study indicate that elderly return migrants are more likely to report having poorer self-rated health than non-migrants. A previous study on Mexico confirms that poor health is associated with return migration to

Table 6

Odds ratio (OR) and 95% confidence interval (CI) for the factors Self-Rated health and Any chronic disease among the elderly return migrants.

Background Characteristics	Self-rated Health		Any Chronic Disease	
	OR	CI	OR	CI
Age group				
60-69 ®				
70–79	1.60*	[1.06, 2.42]	2.00**	[1.23, 3.24]
80+	4.27**	[1.77, 10.28]	1.04	[0.44, 2.42]
Gender				
Male ®				
Female	1.26	[0.49, 3.25]	1.51	[0.53, 4.31]
Marital Status				
Married ®				
Widow/widower	1.02	[0.41, 2.58]	1.48	[0.49, 4.45]
Never married	1.33	[0.22–8.08]	1.41	[0.18, 10.95]
Relationship to head of the household				
Head of household ®				
Husband/wife	1.09	[0.50, 2.41]	0.79	[0.34, 1.85]
Father/Mother/Mother-in-law	0.5	[0.08, 3.31]	0.39	[0.06, 2.65]
Others	0.25*	[0.07, 0.93]	0.12**	[0.03, 0.43]
Current working Status				
Self-employment ®				
Agricultural labour	0.67	[0.27, 1.68]	1	[0.39, 2.58]
Non-Agricultural labour	1.1	[0.51, 2.36]	0.82	[0.37, 1.83]
Household work	1.45	[0.56, 3.76]	1.02	[0.37, 2.82]
Pensioners	1.03	[0.57, 1.86]	0.95	[0.50, 1.78]
Too old to work	1.6	[0.96, 2.66]	1.12	[0.65, 1.94]
Others	1.21	[0.67, 2.18]	1.22	[0.64, 2.33]
Reason for return				
Accomplished goals®				
To retire	2.09	[0.76, 5.79]	1.6	[0.65, 3.94]
Lost job/laid off	2.96*	[1.05, 8.40]	1.47	[0.58, 3.73]
Missed family	3.71*	[1.24, 11.08]	1.56	[0.58, 4.23]
Illness	4.82**	[1.64, 14.17]	3.61*	[1.23, 10.58]
To care for elderly	2.04	[0.50, 8.31]	1.11	[0.30, 4.18]
Prefer to work in Kerala	2.92	[0.88, 9.71]	1.52	[0.49, 4.66]
Others	4.95**	[1.74, 14.07]	1.59	[0.62, 4.08]
Disease/injury at destination				
No ®				
Yes	1.28*	[0.81, 2.01]	1.89*	[1.11, 3.23]

Exponentiated coefficients; 95% confidence intervals in brackets, *p < 0.05, **p < 0.01, ***p < 0.001.

Mexico (Arenas et al., 2015; Ullmann et al., 2011). Other studies conducted in Europe revealed that international migrants frequently rated their health as poorer than other people(Nielsen & Krasnik, 2010). Overall, the reasons for elderly return migrants' poor self-reported health are likely to be complicated and multifaceted. More research is needed to completely understand the factors that contribute to this issue. Our study also found that any chronic disease is more frequent among the elderly return migrants than the non-migrant elderly. According to Wilson et, al. (2014), Compared to the non-migrant population, return migrants have a higher risk of chronic health issues in later life. The high rates of work-related injuries in occupations with a high migrant employment rate may also be a contributing factor in the poor health reports. Furthermore, due to poverty and limited access to healthcare, return migrants may see an increase in chronic diseases like hypertension, diabetes, and heart disease, which are common among all ethnic groups (Wilson et al., 2014). Elderly Return migrants have a lesser chance of being covered by the RSBY health program than non-migrants. Migration may result in a loss in health coverage or a reduction in coverage due to absence during critical enrollment periods (Ross et al., 2006).

Demographic character is a significant factor in health and disease among the elderly population. Like earlier evidence (Ganguly & Kadam, 2020; Jana & Chattopadhyay, 2022; LASI, 2021) our study also found that poor health and disease burden increase with age. Further, earlier

history of disease or injury or illness at the destination is the main factor that determines the health status of elderly return migrants (Barrett, 2012; Ghimire & Bhandari, 2020).

5. Limitation of the study

However, we need to highlight some limitations in this study. First, this study used a cross-sectional survey. Second, data were collected from the return migrants irrespective of their return duration, and recall bias may have influenced some of the results.

6. Conclusion

There is an urgent need for new understandings of migration aging and health dynamics from the perspective of elderly return migrants, particularly in Kerala, India. The working-age population in Kerala migrated out for better job opportunities or a better standard of living and returned home after spending a portion of their life at their destination. This study shows the early life migration and health penalties at the later age of life. The findings suggest that the elderly population and elderly return migrants, particularly, suffer greater health disadvantages. The findings further highlight the potential difference between return elderly migrants and non-migrant elderly populations. It is well established that the elderly population always disadvantage position in terms of health and morbidity. Meanwhile, early life migration experience and working or living conditions at the destination, such as nature of work, injury at destinations, and reason due to illness, multiply the propensity of poor self-rated health, morbidity pattern, and health-seeking behavior. This study's findings can provide an important finding to policymakers with supporting evidence for the health and health-seeking behavior of elderly return migrants to the overall health status of the elderly. Government should not only focus on health policy for elderly return migrants but also promote health insurance coverage for migrant workers at destinations.

Author credit statement

Manoj Paul: Conceptualization, Methodology, Formal analysis, Supervision, Writing – Original Draft, Writing - Review & Editing. **Sourav Mandal:** Conceptualization, Methodology, Formal analysis, Writing - Review & Editing. **Ramkrishna Samanta:** Conceptualization, Methodology, Supervision, Writing – Original Draft, Writing - Review & Editing.

Declaration of competing interest

None.

Data availability

The authors do not have permission to share data.

Migration Survey (KMS) eight round dataset to conduct this study.

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