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Health Profile of Return Emigrants of Kerala

Umaira.KK
Research Scholar, PG and Research Department of Economics, EMEA College of Arts and Science, Kondotti,(Affiliated to Calicut University) Email ID:umairausman38@gmail.com

Dr.Shibinu.S
Assistant Professor, Department of Economics, Pocker Sahib Memorial Orphanage College, Tirurangadi,, (Affiliated to Calicut University) Email ID:shibinusbs@gmail.com

Abstract

This study explored the reasons for return migration and assessed the influence of socio-economic, demographic, and lifestyle factors on the prevalence of chronic diseases among return migrants of kerala.A stratified multistage random sampling technique was employed and representative selection of return emigrants uesed from Malappuram, Kollam and Ernakulam districts. Here cross-sectional survey data used. A pre-tested questionnaire was administered to a total of 466 participants,with 238 from Malappuram ,127 from Kollam and 101 samples from Ernakulam.Data on common chronic diseases including diabetes, stroke, heart disease, chronic respiratory disease, and cancer along with associated risk factors, were collected based on self-reported morbidity over the past ten years. The findings indicated that illness was the primary reason for return migration. Logistic regression analysis emphasizes age and length of stay as critical predictors of chronic disease, while other factors such as religion, education, and income showed associations with prevalence of disease.Lifestyle factors such as unhealthy diet, heredity, substance abuse, and physical inactivity did not show significant associations in the current model, though unhealthy diet and heredity approached significance, suggesting potential relevance with a larger sample size.

Keywords: *Kerala, Return migration, Chronic disease morbidity, Risk factors, Remittance*

1.Introduction

Return migration has become a significant global phenomenon, with migrants returning to their home countries after spending years abroad, particularly in high-income regions and this group often faces a heightened risk of chronic diseases due to various factors.It includes exposure to occupational hazards, lifestyle changes, and limited access to healthcare while abroad. Returnees may experience a rise in conditions such as hypertension, diabetes, cardiovascular diseases, and mental health disorders, exacerbated by stress, unhealthy living conditions, and inadequate healthcare access during migration. Moreover, when returnees reintegrate into their home countries, they may find healthcare systems ill-equipped to address the specific health needs of this population, further complicating their chronic disease management (Murray et al., 2015). Addressing the health needs of return migrants requires tailored policies and healthcare interventions that consider both their pre-migration health conditions and the challenges they face upon their return.While remittances have bolstered the state's economy, the return of emigrants often reveals underlying health challenges that are less visible during their migration phase. Returnees frequently experience a double burden of health issues: chronic conditions exacerbated by migration-related stressors and new health concerns arising from reintegration challenges. Many return emigrants report a higher prevalence of non-communicable diseases such as diabetes, ,hypertension, and cardiovascular ailments, often attributed to lifestyle changes and occupational exposures abroad (Zachariah et al., 2006).

On a personal level, chronic illness can lead to a profound sense of isolation and frustration for return migrants. Adjusting to a new lifestyle while managing a disease often involves significant mental and emotional challenges, including depression, anxiety, and a loss of self-

worth, particularly if they cannot contribute economically. The social stigma attached to illness or dependency may further exacerbate feelings of exclusion. Additionally, the lack of continuity in medical care after migration such as losing access to advanced healthcare systems abroad can result in inadequate treatment and worsened health outcomes, impacting their overall quality of life. From a socio-economic perspective, return migrants with chronic diseases often struggle to reintegrate into the labor market due to reduced physical or mental capacity, leading to loss of income and productivity. Families may experience financial stress from the costs of long-term treatment, medications, and caregiving responsibilities. Additionally, in communities with limited healthcare infrastructure, the burden of managing chronic diseases can strain local health services and increase out-of-pocket expenses for affected households. If migrants were primary earners, their reduced earning capacity may also diminish remittance inflows, which are crucial for many families and local economies in migrant-sending regions.Studies have noted that the stigma surrounding mental illness in Kerala further deters returnees from seeking professional help, resulting in untreated or poorly managed conditions (Rajan & Narayana, 2010). Moreover, return migrants often face a lack of targeted healthcare programs to address their specific mental health needs, highlighting a gap in the healthcare system.

Kerala's unique demographic profile, characterized by an aging population and a high prevalence of chronic diseases, further complicates the health landscape for return emigrants. Many returnees, particularly those nearing retirement age, find themselves in a healthcare system already strained by the demands of an aging population. Access to quality healthcare can be uneven, particularly in rural areas, where many emigrants return after their overseas employment. This inequity in healthcare access often leaves returnees vulnerable to delayed diagnoses and inadequate management of chronic illnesses (Prakash, 2011).Policy gaps also exacerbate the health challenges faced by return emigrants. While Kerala has implemented several programs to support migrants, there is a notable lack of comprehensive policies addressing the healthcare needs of returnees. Initiatives such as the Norka Roots framework provide some assistance in terms of rehabilitation and reintegration, but they do not adequately address the long-term health challenges faced by this demographic. Addressing these gaps requires a nuanced understanding of the interplay between migration, health, and reintegration, as well as coordinated efforts to integrate return migrants into Kerala's broader public health agenda (Joseph & Varghese, 2018). Addressing these challenges requires a multi-dimensional approach that integrates healthcare access, economic support, and social reintegration policies, ensuring that return migrants can live with dignity and contribute to their communities.

2.Theoretical framework

1. Neoclassical theory of migration(Harris & Todaro,1970) which views migration as an economic phenomenon influenced by regional differences in employment prospects and wages. It makes the assumption that people migrate from low-wage, labor-surplus areas to high-wage, labor-scarce areas in order to increase their income and better their living conditions. According to this idea, people make logical decisions when taking into account variables including the dangers involved, possible income benefits, and the expenses of relocation. At the micro level, it

emphasizes individual cost-benefit analysis as the primary driver of migration, while at the macro level, it emphasizes the importance of regional pay differences.

2. Push and Pull Factor Theory of Migration (Lee,1966), explains migration as a result of two opposing forces: push factors that drive individuals away from their place of origin and pull factors that attract them to a new destination. Push factors include unfavorable conditions like unemployment, political instability, and poor living standards, while pull factors encompass opportunities such as better employment, higher wages, and improved quality of life in the destination. Lee also highlighted intervening obstacles, such as distance and migration policies, which influence the decision-making process. This theory provides a comprehensive framework to understand migration as a dynamic interplay of socio-economic factors.
3. The Human Capital Theory (Becker,1964) posits that individuals invest in education, training, and skills to enhance their productivity and income potential, much like investments in physical capital. In the context of migration, the theory explains that people migrate to regions offering better opportunities to maximize returns on their human capital, such as higher wages, advanced career prospects, or improved living standards. It assumes that migration decisions are rational and based on a cost-benefit analysis, including the economic costs of moving and the expected gains in human capital utilization. This theory is central to understanding how migration aligns with economic development.
4. Relative Deprivation Theory (Gurr,1970),migration is a reaction to perceived differences between people's existing circumstances and their aspirations or comparisons with others. It suggests that people migrate because they feel deprived in comparison to others or their ideal quality of living, rather than solely because they are completely impoverished or lack resources. People are inspired to look for greater possibilities, frequently in more developed areas, by this sense of disparity. The idea emphasizes the social and psychological aspects of migration, highlighting comparisons and ambitions as major motivators.

3.Statement of problem

Chronic illnesses often have long-term consequences on individuals' health, particularly among migrants. Due to high levels of stress, poor living and working conditions, and limited access to healthcare, migrant workers face significant health challenges. Physically demanding labor and unhealthy environments contribute to chronic diseases that often go undiagnosed and untreated, leading to severe consequences such as reduced employability and financial instability. The resulting loss of income not only affects the individual but also their families, who may be heavily reliant on remittances to meet essential needs.

Beyond immediate health concerns, migrants encounter structural barriers in accessing quality healthcare. Limited familiarity with the local healthcare system and language barriers are key challenges that prevent them from seeking

timely and effective medical attention. Many migrants are unaware of their healthcare rights or struggle to navigate bureaucratic procedures in foreign countries, leading to delays in diagnosis and treatment.The economic impact of chronic diseases extends beyond individuals to the broader community. The lack of comprehensive data on the health status of return emigrants in Kerala makes it challenging to formulate effective policies and allocate resources efficiently. Understanding the health conditions of return migrants is essential to identifying common health issues, the factors affecting their well-being, and the barriers they face in accessing healthcare services. This knowledge is critical for designing targeted health policies and programs that support returnees in their reintegration process. Ensuring proper healthcare and assistance for return migrants can contribute to a healthier and more resilient society, benefiting Kerala as a whole.Despite its significance, the health of return migrants has received little attention in policy and research. Therefore, this study seeks to examine the primary reasons for the return of Gulf migrants to Kerala and to identify the key risk factors and social determinants of health throughout their migration journey.

4.Objectives of the study

1. To find out the causes of return emigration in the study area.
2. To investigate the extent of chronic disease morbidity faced by return emigrants and the factors affecting these diseases.

5.Hypotheses

- H0: Illness is not a significant factor in the return migration of Gulf returnees.
  H1: Illness is the key factor driving the return migration of Gulf returnees.
- H0: There is no significant increase in the prevalence of chronic diseases among returnees of Kerala in the post-migration period.
  H1: There is a significant increase in the prevalence of chronic diseases among returnees of Kerala in the post-migration period.
- H0: There is no significant association between the demographic and lifestyle factors with chronic disease morbidity among returnees
  H1: There is a significant association between at least one of the demographic and lifestyle factors with chronic disease morbidity among returnees

6.Methodology

A longitudinal research design was employed to effectively evaluate health changes over time among returnees in Kerala and to gain meaningful insights into the long-term impacts of migration on health. Such a design entails tracking migrants at every stage of their journey, before they depart their home country, during their time abroad, and after they return. However, in practice, longitudinal studies are often limited by prohibitive costs and the extended time periods. So survey followed by adopting a cross-sectional research design with a retrospective approach. This study was conducted using data gathered from return emigrants in Kerala, who had returned from the six GCC (Gulf Cooperation Council) countries. The data collection was facilitated through a structured and pre-tested survey schedule, ensuring consistency and reliability in the responses. The survey focused on capturing a range of health-related aspects, including chronic diseases, socioeconomic factors, and reintegration challenges faced by the return emigrants. By gathering information directly from the emigrants themselves

6.1 Data source and sampling design

The survey employed stratified multi-stage sampling design to ensure a representative selection of return emigrants from different regions of Kerala. Among the fourteen districts, the following districts were determined: (i) Malappuram from north Kerala, Kollam from the southern region of Kerala, and Ernakulam from the central region. Malappuram and Kollam were chosen for the survey based on their prominence in the Kerala Migration Survey (2018), which identified them as having the highest concentration of return emigrants in the state. These districts represent significant migration and reintegration dynamics, with Malappuram being a hotspot due to its strong historical ties to Gulf migration, supported by its socio-cultural networks and large Muslim population that traditionally engages in overseas employment. Kollam, on the other hand, is known for its migration to Gulf countries and beyond, driven by economic factors and the search for better livelihood opportunities. By focusing on these districts, the research aims to capture the unique patterns of migration and the challenges faced by return emigrants, offering insights into the socio-economic factors influencing their reintegration. Ernakulam, while not a leading district in terms of return emigrant numbers, was chosen for this study due to the researcher's interest in its distinctive socio-economic characteristics. As one of Kerala's most urbanized and industrialized regions, the district is home to Kochi, a vibrant commercial hub and a key focus of the Smart Cities Mission, being one of the first 20 cities selected under the initiative. The district boasts strong infrastructure, including Cochin International Airport, a major gateway for global travel, and is widely regarded as Kerala's educational hub. These factors significantly enhance its global connections and foster opportunities for international employment. However, despite these strengths, Ernakulam also witnesses notable return migration, presenting a fascinating paradox. This study seeks to investigate the factors contributing to this phenomenon.

The total number of return emigrants surveyed was set at 466. To determine this figure, the study initially employed Cochran's formula, a standard and widely used statistical method for calculating sample sizes. This formula ensures that the chosen sample size is sufficient to produce reliable and statistically valid results.Once the total sample size was finalized, the researchers allocated it proportionally across the Taluks of the three selected districts. Here used with 238 samples from Malappuram ,127 from Kollam and 101 samples from Ernakulam districts. This allocation was further stratified by rural and urban areas which is followed in the Kerala Migration Survey (KMS) 2018. By adopting this method, the study ensured that the sample was representative of the diverse demographic and geographic characteristics of the districts.This proportional and stratified allocation allowed for a balanced representation of return emigrants across different regions and living environments, enhancing the validity of the survey findings and ensuring that the results could provide meaningful insights into the patterns and factors influencing return migration in Kerala.

The study focused on self reported morbidity to know prevalence of chronic disease among returnees who returned after 2013 which selected due to anticipation in the Kerala Migration Survey (KMS,2013) ,a decline in emigration. The number of emigrants, which stood at 24 lakh in 2013, dropped to 21 lakh in 2018 a reduction of approximately 12 percent over five years. According to KMS 2018, there are 12.95 lakh return emigrants, accounting for about 60 percent of Kerala's total emigrant population. This survey reaffirms the trend observed in the previous round: a steady

decrease in emigration from Kerala coupled with a rise in return migration. Self-reported morbidity is cost-effective and allows researchers to capture large-scale data on individuals' health perceptions, including undiagnosed conditions. It provides insights into subjective health experiences and is useful for analyzing health inequalities linked to socioeconomic factors. A period of one year before to the date of inquiry(January-June,2023) was used to estimate the prevalence rate of chronic illness morbidity and to evaluate the cost of admission treatmentThe data were analyzed using appropriate inferential and descriptive statistics.Inferential statistics provide a foundation for making generalizations from a sample to a population, testing hypotheses, and estimating population parameters.Common methods include hypothesis testing,confidence intervals, regression analysis, correlation analysis, and specialized tests for categorical and non-parametric data.Descriptive analysis, on the other hand, involves summarizing and organizing data to reveal patterns, trends, and key insights from the collected information

7.Result and discussion

7.1 Socioeconomic and Demographic Features of Return Emigrants of Kerala

Socioeconomic and demographic factors significantly influence the physical and mental health of return migrants by shaping their lifestyle, healthcare access, and overall well-being. This chapter examines the socioeconomic and demographic profiles of return migrants, considering employment, education, income, and wealth as key indicators of societal standing. While migration to GCC countries has traditionally been male-dominated, recent trends show a rise in independent female migration for education and employment. The analysis explores how return migrants' social and economic status evolved across migration phases, highlighting both challenges and opportunities during emigration, their time abroad, and reintegration.

Table 7.1 :Socio-Demographic characteristics of study participants (n=466)

	Malappuram n(%)	Kollam n(%)	Ernakulam n(%)	Total
Gender				
Male	228 (50.7)	122 (27.1)	99 (22)	449 (96.3)
Female	10 (58.8)	5 (29.4)	2 (11.7)	17(3.6)
Age				
20-40	100 (57.4)	39 (22.4)	35 (20.1)	174(37.3)
41-60	85 (52.4)	47 (29)	30 (18.5)	162(34.7)
61 & above	53 (40.7)	41 (31.5)	36 (27.6)	130(27.8)
Religion				
Muslim	138 (47.9)	71 (24.6)	79 (27.4)	288(61.8)
Hindu	46 (47.4)	40 (41.2)	11 (11.3)	97 (20.8)
Christian	54 (66.6)	16 (19.7)	11 (13.5)	81(17.3)
Marital Status				
Single	10 (71.4)	1 (7.1)	3 (21.4)	14 (3)
Married	225 (51)	124 (28.1)	92 (20.8)	441(94.6)
Divorce	3 (27.2)	2 (18.1)	6 (54.5)	11(2.3)
Ration Type				
APL	229 (51.9)	118 (26.7)	94 (21.3)	441(94.6)
BPL	9 (36)	9 (36)	7 (28)	25(5.3)
Education				
Primary	28 (51.8)	11 (20.3)	15 (27.7)	54(11.5)
Secondary	64 (48.4)	41 (31)	27 (20.4)	132(28.3)
Higher Education	104 (53)	47 (23.9)	45 (22.9)	196(42)
Professional	42 (50)	28 (33.3)	14 (16.6)	84(18)
GCC Countries				
UAE	127 (50.3)	63 (25)	62 (24.6)	252(54)
Saudia Arabia	52 (47.2)	35 (31.8)	23 (20.9)	110(23.6)
Oman	24 (63.1)	7 (18.4)	7 (18.4)	38(8.1)
Qatar	18 (52.9)	9 (26.4)	7 (20.5)	34(7.2)
Bahrain	6 (46.1)	7 (53.8)	0	13(2.7)
Kuwait	11 (57.8)	6 (31.5)	2 (10.5)	19(4)

Source:Field Survey

7.2Reasons of return migration

Return migration from GCC countries is driven by economic, social, and personal factors, including job losses due to economic downturns, localization policies, and unstable work contracts. Migrants in physically demanding jobs often return due to health issues and limited access to healthcare, while aging workers face difficulties competing in the labor market without social security benefits. Family responsibilities, such as caring for aging parents or managing children's education,

also influence their decision to return. Ultimately, many migrants prioritize stability, health, and family over prolonged stays abroad.

Table 7.2.1: Primary Reasons for Return Migration: A Comparative Analysis Across Districts

Primary Reason to Return	District of a Person			
	Malappuram	Kollam	Ernakulam	Total
Retired	11 (57.8)	3 (15.7)	5 (26.3)	19 (4)
Family Missing	41(51.9)	23 (29.1)	15 (18.9)	79 (16.9)
Elderly Caring	13(86.6)	2 (13.3)	0	15 (3.2)
Goals Accomplished	20(45.4)	13 (29.5)	11 (25)	44 (9.4)
Prefer to Work in Kerala	6(40)	7 (46.6)	2 (13.3)	15 (3.2)
Lost Job	13(48.1)	7 (25.9)	7 (25.9)	27 (5.7)
Illness	69 (44.2)	46 (29.4)	41 (26.2)	156 (33.4)
Contract Expiry	5 (62.5)	3 (37.5)	0	8 (1.7)
Covid 19	12 (46.1)	7 (26.9)	7 (26.9)	26 (5.5)
Compulsory Expatriation	1(50)	1 (50)	0	2 (.4)
Poor Working Conditions	17 (68)	2 (8)	6 (24)	25 (5.3)
Nationalization	18 (58)	6 (19.3)	7(22)	31 (6.6)
Cancellation of Visa	2 (66.6)	1 (33.3)	0	3 (.6)
Migrate to Another Destination	10 (62.5)	6 (37.5)	0	16 (3.4)
Total	238 (51)	127 (27.2)	101 (21.6)	466 (100)
Chi-Square Value = 31.445	Degrees of Freedom = 26		Sig. Value = 0.212	

Source:Field Survey

The chi-square test conducted on the relationship between the primary reasons for return and the district of origin reveals valuable insights regarding the patterns of return migration among individuals from Malappuram, Kollam, and Ernakulam. The null hypothesis for this test assumes that there is no significant association between the district of a person and their primary reason for return, while the alternative hypothesis suggests the presence of a significant relationship between these two variables.Illness emerges as the most common reason overall, accounting for 33.4% of the returns, with Malappuram showing the highest proportion (44.2%) compared to Kollam (29.4%) and Ernakulam (26.2%). Family-related reasons, such as missing family (16.9%) and elderly care (3.2%), are also significant, particularly in Malappuram, where 51.9% of returnees cite family-related reasons.

Table 7.2.2:Main Reasons for the Return of Kerala Migrants

Primary Reason to Return	Observed N	Expected N	Residual
Retired	19	33.3	-14.3
Family Missing	79	33.3	45.7
Elderly caring	15	33.3	-18.3
Goals accomplished	44	33.3	10.7
Prefer to work in kerala	15	33.3	-18.3
Lost job	27	33.3	-6.3

Illness/accident	156	33.3	122.7
Contract expiry	8	33.3	-25.3
Covid 19	26	33.3	-7.3
Compulsory expatriation	2	33.3	-31.3
Poor working conditions	25	33.3	-8.3
Nationalization	31	33.3	-2.3
Cancellation of visa	3	33.3	-30.3
Migrate to another destination	16	33.3	-17.3
Chi-Square = 635.013	Degrees of Freedom = 13		Sig. Value = 0.000

Source:Field Survey

The chi-square test for the primary reason to return provides a comprehensive understanding of the differences between observed and expected frequencies across various reasons for return migration. Null Hypothesis (H_0): There is no significant difference between the observed and expected frequencies of the primary reasons for return migration. All reasons occur with equal likelihood. Alternative Hypothesis (H_1): There is a significant difference between the observed and expected frequencies, indicating that certain reasons for return migration are more prominent than others.The chi-square value obtained is 635.013 with 13 degrees of freedom and a significance value (p-value) of 0.000. Since the p-value is well below the conventional threshold of 0.05, the null hypothesis is rejected. This indicates a statistically significant difference between the observed and expected frequencies, implying that certain reasons are indeed more dominant than others in influencing return migration patterns. Upon examining the residuals, it is evident that the most significant contributing factor is Illness/Accident, with a positive residual of +122.7, far exceeding the expected frequency of 33.3. This indicates a substantially higher-than-expected number of individuals returning due to health-related issues. On the other hand, categories such as Compulsory Expatriation (-31.3), Cancellation of Visa (-30.3), and Contract Expiry (-25.3) show negative residuals, indicating fewer returnees than expected for these reasons.The strong deviation from the expected frequencies, especially the overwhelming contribution of health-related concerns, suggests that illness and accidents play a disproportionately large role in return migration compared to other reasons. This highlights a potential area for policy intervention, such as improving healthcare support for return migrants or preventive health strategies during employment abroad. In overall, the analysis provides strong evidence that the primary reasons for return migration are not evenly distributed, with health-related issues being the most significant factor.

7.3 Prevalance of Chronic Disease Morbidity Among returnees of Kerala

Chronic disease morbidity refers to long-term health conditions like diabetes, hypertension, and cardiovascular diseases that require ongoing management and significantly impact quality of life. Its rising prevalence is linked to lifestyle changes, aging, and genetic factors, placing financial and social burdens on individuals, families, and public health systems. Among migrants, chronic disease risks evolve across pre-migration, migration, and post-migration phases due to factors like strenuous labor, limited healthcare access, and reintegration challenges. Addressing these issues requires preventive healthcare, robust medical systems, and policies that support affected individuals throughout their migration journey.

Table 7.3.1: Chronic Disease Morbidity: Pre-Migration and Post-Migration Phases

Chronic Disease	**Pre-Migration n(%)**
No disease	406 (87.1)
Diabetics	38 (8.2)
Heart	12 (2.6)
Respiratory Disease	9 (1.9)
Stroke	1 (.2)
Chronic Disease	**Post-Migration N(%)**
No disease	190 (40.8)
Respiratory & Others	1 (0.2)
Cancer & Others	1 (0.2)
Stroke & Others	3 (0.6)
Stroke & Respiratory	2 (0.4)
Stroke & Heart	1 (0.2)
Diabetics	125 (26.8)
Heart	23 (4.9)
Respiratory	26 (5.6)
Cancer	22 (4.7)
Stroke	16 (3.4)
Diabetics & Others	3 (0.6)
Diabetics & Heart	14 (3.0)
Diabetics & Respiratory	13 (2.8)
Diabetics & Cancer	14 (3.0)
Diabetics & Stroke	12 (2.6)

Source:Field Survey

Table 7.3.2: Morbidity in pre and post migration phases

Chronic Disease Morbidity Pre Migration - Chronic Disease Morbidity Post Migration			
Ranks	N	Mean Rank	Sum of Ranks
Negative Ranks	14[a]	91.54	1281.50
Positive Ranks	259[b]	139.46	36119.50
Ties	193[c]	Wilcoxon Signed Ranks Test	-13.510
Total	466	Sig. Value	0.000

a. chronic disease morbidity post migration < chronic disease morbidity pre-migration.

b. chronic disease morbidity post migration > chronic disease morbidity pre-migration.

c. chronic disease morbidity post migration = chronic disease morbidity pre-migration.

The Wilcoxon Signed-Rank Test was conducted to examine the differences in chronic disease morbidity levels before and after migration among 466 individuals, is given in table. This non-parametric test is particularly suitable for comparing paired ordinal data, as it assesses whether the median difference between two related conditions is statistically significant. The analysis aimed to determine whether migration had an impact on the chronic disease morbidity levels of the respondents. The test results revealed a clear disparity in chronic

disease morbidity before and after migration. A total of 14 cases exhibited negative ranks, where post-migration morbidity levels were lower than pre-migration levels. These negative ranks had a mean rank of 91.54 and a sum of ranks totalling 1,281.50. Conversely, a much larger group, consisting of 259 cases, showed positive ranks, indicating that post-migration morbidity levels were higher than pre-migration levels. The positive ranks had a significantly higher mean rank of 139.46 and a sum of ranks amounting to 36,119.50. Additionally, 193 cases exhibited no change in morbidity levels, indicating ties between the two conditions.

The test statistic for the analysis, represented as Z, was calculated as -13.510. The significance value (p-value) associated with this test was 0.000. Given that the p-value is well below the conventional threshold of 0.05, the null hypothesis, which assumes no difference in chronic disease morbidity levels before and after migration, was rejected. This finding suggests that there is a statistically significant difference in chronic disease morbidity levels before and after migration. The results of the analysis provide compelling evidence that migration has had a notable impact on chronic disease morbidity among the respondents. The substantial increase in morbidity levels post-migration, as indicated by the predominance of positive ranks and their higher mean rank, highlights the potentially adverse health consequences associated with the migration experience.

7.4: Key Factors Influencing Chronic Disease Morbidity Among Return Migrants

The main determinants of chronic disease morbidity among returnees are shaped by a combination of lifestyle, occupational, and psychosocial factors experienced during migration and after their return. Prolonged exposure to physically demanding jobs, unhealthy dietary patterns, and limited access to healthcare in host countries often contribute to the early onset or exacerbation of chronic conditions such as diabetes, hypertension, and cardiovascular diseases. Post-return, socioeconomic instability, unemployment, and the stress of reintegration can further aggravate these health issues. Additionally, limited access to rehabilitation services, lack of social support, and inadequate awareness of preventive healthcare in the home environment play crucial roles in determining the morbidity burden among returnees. Addressing these determinants through targeted health policies and support systems is essential for improving their quality of life.

Table 7.4.1 :Main determinants of chronic disease morbidity among returnees

Variables	B	S.E.	Wald	DF	Sig.	B	95% C.I.for Exp(B)	
							Lower	Upper
Age	Reference: 20 – 40							
41- 60	3.322	.963	11.911	1	.001	27.715	4.201	182.832
61 and above	3.832	1.102	12.089	1	.001	46.151	5.322	400.193
Religion	Reference: Muslim							
Hindu	-.610	.912	.447	1	.504	.543	.091	3.249
Christian	-.900	.921	.955	1	.328	.407	.067	2.471
Education Status	Reference: Primary							

Secondary	1.052	1.270	.687	1	.407	2.864	.238	34.512
Higher	-.582	1.393	.175	1	.676	.559	.036	8.569
Professional	-1.975	1.364	2.096	1	.148	.139	.010	2.011
Economic Activity	Reference: State/central Govt							
Semi Govt	-.182	1.885	.009	1	.923	.833	.021	33.548
Private Sector	2.501	1.738	2.070	1	.150	12.191	.404	367.816
Self Employment	1.375	1.697	.657	1	.418	3.956	.142	110.149
Agricultural Labour	1.689	2.030	.692	1	.405	5.413	.101	289.065
Household work	.576	1.761	.107	1	.744	1.778	.056	56.116
Monthly salary	Reference: less than 20k							
20k to 40k	-.343	1.926	.032	1	.859	.710	.016	30.912
41k to 70k	2.880	2.166	1.768	1	.184	17.810	.255	1.243E3
More than 70k	-.296	2.195	.018	1	.893	.744	.010	54.908
Stay duration	Reference: less than 2 years							
2-12 years	3.704	1.038	12.742	1	.000	40.590	5.312	310.132
13-25 years	3.953	1.257	9.880	1	.002	52.066	4.428	612.250
More than 25 years	4.398	1.084	16.462	1	.000	81.283	9.713	680.245
Other Factors	Reference: Yes for Factors							
Unhealthy diet	-4.414	2.979	2.195	1	.138	.012	.000	4.160
Heredity	-1.365	.831	2.696	1	.101	.255	.050	1.303
Substance abuse	.751	.757	.984	1	.321	2.119	.481	9.339
Physical inactivity	.935	2.908	.103	1	.748	2.548	.009	760.993
Constant	-5.105	2.674	3.644	1	.056	.006		
Model Summary								
Omnibus Tests of Model Coefficients	Chi-Square = 541.595			DF = 22		Sig. Value = 0.000		
-2 log likelihood = 88.455				Cox & Snell R Square = 0.687				
Nagelkerke R Square = 0.927				Overall Percentage Correct = 97.6				

Source:Field Survey

The logistic regression model presented provides insights into the factors associated with chronic disease occurrence among the surveyed population. The results are based on a robust model, as evidenced by the Omnibus Tests of Model Coefficients, which yielded a chi-square value of 541.595 with a significance value of 0.000, indicating that the model fits the data well. Furthermore, the high Nagelkerke R Square value of 0.927 suggests that the model explains a substantial proportion of the variance in the dependent variable, chronic disease occurrence. The classification table reveals an overall accuracy of 97.6%, with the model correctly identifying 95.3% of cases where no disease was reported and 99.3% where disease was present. This indicates excellent predictive power, reinforcing the strength of the model's ability to distinguish between the groups.

Age emerged as a significant predictor of chronic disease. Respondents aged 41-60 (Exp(B) = 27.715, p = 0.001) and those aged 61 and above (Exp(B) = 46.151, p = 0.001) were significantly more likely to report chronic diseases compared to the reference group of 20-40 years. The odds of chronic disease occurrence dramatically

increased with age, highlighting age as a key risk factor. However, other variables such as religion and education status did not show significant associations with chronic disease occurrence. For instance, being Hindu ($p = 0.504$) or Christian ($p = 0.328$) compared to Muslims did not significantly affect the likelihood of chronic disease. Similarly, higher educational attainment was not significantly linked to disease presence. Economic activity also showed limited significance in predicting chronic disease, with none of the occupational categories displaying statistically significant odds ratios. Monthly income, too, failed to show a strong association, as the significance values were consistently above 0.05 across all income groups. Conversely, the duration of stay was a significant predictor. Those who stayed between 2-12 years (Exp(B) = 40.59, $p < 0.001$), 13-25 years (Exp(B) = 52.066, $p = 0.002$), and more than 25 years (Exp(B) = 81.283, $p < 0.001$) showed a substantially higher risk of chronic disease compared to those with shorter stays. This pattern could suggest prolonged exposure to risk factors associated with long-term residency.Lifestyle factors such as unhealthy diet, heredity, substance abuse, and physical inactivity did not show significant associations in the current model, though unhealthy diet ($p = 0.138$) and heredity ($p = 0.101$) approached significance, suggesting potential relevance with a larger sample size.

In overall, this logistic regression analysis emphasizes age and length of stay as critical predictors of chronic disease, while other factors such as religion, education, and income showed weaker associations. The high model accuracy and explained variance affirm the robustness of the model, yet further investigation with a broader sample could help clarify the non-significant relationships observed. These findings underscore the importance of targeted health interventions focusing on older populations and those with prolonged exposure to chronic disease risk factors.

8.Conclusion

Kerala has achieved impressive socio-economic progress and infrastructure development over the past four decades, largely driven by migration. However, this growth model has faced criticism for its heavy dependence on remittances, raising concerns about its sustainability (Kannan & Hari, 2020). Additionally, many return migrants suffer from chronic illnesses, with notable differences in morbidity between their pre- and post-migration periods in Malappuram and Kollam. To enhance public health, governments in developing countries should implement better policies, including fostering economic conditions that support household health improvements, prioritizing cost-effective public health programs, and decentralizing healthcare services to encourage private and nonprofit sector participation.

9. Limitations of the study

This study faces the inherent limitations of a retrospective cross-sectional design. Chronic disease prevalence is determined solely through self-reported morbidity rather than medical evaluations. Additionally, the survey did not capture information on HIV/AIDS, alcohol consumption, or chronic mental health conditions. Furthermore, respondents may have withheld details about their experiences abroad or the value of household assets, potentially affecting data accuracy.

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