UNRAVELLING THE INFLUENCE OF EARLY LIFE RISK FACTORS ON FUNCTIONAL LIMITATIONS AMONG OLDER ADULTS IN INDIA: EVIDENCE FROM LASI WAVE-1

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Introduction

Nearly two-third of the older adult live in developing countries of the world. The proportion of 60 years and above is expected to double from 12% to 22% between 2015 and 2050. The projected data shows that by 2050 nearly 80% of older people will be living in low- and middle-income countries (WHO 2021). By 2030, the global total dependency ratio is projected to rise to 79 dependents per 100 working-age people and the global potential support ratio is expected to fall to 3.5 by 2050 (UN 2015). Currently, 8.6% of the total population of India is 60 years and above, and by 2050 it is expected to increase by 19.5%. The increasing aged population poses new challenges in developing countries such as increasing old-age dependency, problems in living arrangements, social support, and networks. These all reflect important aspects of the growing old-age population. The concentration of older adult in less developed countries poses economic and health-related challenges and increases social concerns. There are numerous studies on healthy aging but early-life health and socioeconomic situation, and physical health in later life is least explored, especially in developing countries like India.

Many studies reveal that physical and mental health tends to deteriorate with age (Zhang & Lu, 2021; Jones et al., 2018). The most common health problem of old people is a functional disability which includes limitation of mobility and cognitive impairment. At different adult life stages, physical functioning tends to decline at a different rate (Peeters et al., 2013). The Activity of Daily Living and Instrumental Activity of Daily Living (ADL//IADL) is the most common and widely used measure of functional limitation. The different levels of functional disability are determined by the different levels of socio-economic and demographic factors. Exposure to poor social and economic conditions in childhood is likely to cumulate over time and shows a significant association with disability in old age. The higher socioeconomic condition reflects the accumulation of wealth and resources over time which act as a positive factor for better health outcomes. A study comparing life course risk factors and their impact on Basic Daily Living Activity in high and low Human Development Index (HDI) countries found that the probability of disability is high among low HDI countries and low in high HDI countries (Macinko et al., 2021). Socioeconomic factors play an important role in shaping one's perception of life. The lower economic status and poor health during childhood are associated with increased odds of being diagnosed with disease (Lynch & Smith, 2005), particularly heart diseases at later ages (Zhang & Lu, 2021). Education and income level make a huge difference in the perception of health. Educated, and people having better economic status are more aware and have better access to information and services. People with poor economic status have higher chances of IADL disability (Beydoun & Popkin, 2005). Multiple morbidity condition is a significant factor for disability in IADL among older adults (Millán-Calenti et al 2010; Storeng 2020). Older adult with more co-morbidity is at greater risk of having an IADL disability (Fuchs et al., 1998; Storeng et al., 2020). In recent years, there has been a growing interest in the literature conceptualizing a life-course approach to physical and psychological health at older ages (Koster 2006; McEniry 2013; Kuh et al. 2014; Yang et al. 2017; Arpio, Guma and Julia 2018; Aymerich et al. 2021). The life-

course approach to the diseases or Activities of Daly Living (ADL)/ Instrumental activities of daily living (IADL) at older ages is defined as the study of childhood exposure to the physical or social risk factors and its long-term effect on disease occurrence or problems with daily living activity at an advanced age (Ben-Shlomo and Kuh 2002; Van Der Linden et al. 2020). The trajectory focuses on the cumulative effect of life events on adult disease causation (Power and Hertzman 1997). The life-course approach provides an opportunity to study the underlying risk factors of early life on health status at different stages of life. Studies have shown that the life-course approach is an important area of study to improve the understanding of healthy aging (Kuh 2007; Kuh et al. 2014; Pudrovska and Anikputa 2014; Yang et al. 2017; Greenfield, Reynolds, and Moorman 2022; Yang et al. 2017, Shanahan 2000). Most of the studies concentrated on developed nations, while only a little work has been done on developing nations (Selvamani and Arokiasamy 2021).

Research Question:

Does early life-course risk factors (education, health and financial condition in early childhood) are associated with an increased risk of disability at a later age or not?

Research Objectives:

• To examine the effects of Socio-demographic factors on ADL and IADL disability among elderly.

• To assess early life risk factors associated with Activity of Daily Living/Instrumental activities of daily living (IADL) in older adults by using the life-course approach.

Methodology:

Data:

Data for the present study comes from the Longitudinal Ageing Study in India (LASI) Wave 1. The LASI is a biennial panel survey designed to provide a representative sample for all 30 states and 6 union territories of India. This survey aimed to estimate the overall health and social well-being of older adults in India. It follows a multistage stratified area probability cluster sampling design and gathers data from all selected households. All married and non-married men and women aged 45 and above and their spouses, irrespective of age in the selected household, were interviewed. The minimum estimated sample size was 1000 age-eligible persons for the smaller states and union territories. To ensure a representative sample size, larger sample size was considered for states with a larger population, geographical spread, and more socio-economic heterogeneous total of 72,250 individual interviews were completed with an 87.3% response rate from 42,949 households with a 95.8% response rate. Since this study is based only on urban people above 45 years of age. So, the analysis is done only on 23,018 samples.

Variable description: In this study, Activity of Daily Living (ADL) and Instrumental Activity of Daily Living (IADL) were considered as outcome variables. A total of 13 questions were asked to assess ADL, and with all those questions, a composite index was constructed to assess difficulty in the activity of daily living. For the instrumental activity of daily living total of 9 questions were asked, and with those questions, another composite index was constructed to assess IADL. The ADL/IADL index is coded '0' as no difficulty in any daily activity, 1 to 3 difficulties in daily activity are coded as ‘1’ (mild difficulty), and 4 or more difficulties is ADL/IADL as ‘2’ (severe difficulty). Details of both index items are given in the table 1.

Table-1 ADL and IADL Items in the Scale

	ADL	IADL
1	Dressing, including putting on chappals, shoes, etc.	Preparing a hot meal (cooking and serving)
2	Walking across a room	Shopping for groceries
3	Bathing	Making telephone calls
4	Eating, difficulties	Taking medications
5	Getting in or out of bed	Doing work around the house or garden
6	Using the toilet, including getting up and down	Managing money, such as paying bills and keeping track of expenses
7		Getting around or finding an address in an unfamiliar place

Socioeconomic factors such as age, gender, education, marital status, caste, religion, living arrangement, current economic status of the household, morbidity condition, and physical activity are used as the explanatory variable. Physical activity was coded '0' as active and '1' otherwise. Further, to assess multiple morbidity conditions total of eight morbidities (hypertension, diabetes, cancer, lung disease, heart disease, stroke, bone or joint problems, and any psychiatric issues) were considered. The '0' was coded as no morbid, '1' as at list one morbidity among the all-listed morbidities and '2' as two more morbidities. Apart from that, education disruption during childhood, health conditions during childhood, and the household's financial condition are considered life-course risk factors to predict ADL/IADL in old age. Disruption in education was coded '1' if a child missed school for any reason and '0' otherwise. Health condition was categorized into three categories '0' if the health condition was good, '1' as fair, and '2' as poor. Similarly, the financial condition of the household during childhood was coded '0' good, '1' fair, and '2' poor financial condition.

Statistical analysis: As mentioned previously outcome variable is categorical in nature. After descriptive statistics, the multinomial logistic regression is used. The Relative Risk Ratio (RRR) is reported with a P value of 95 percent CI. The results are reported for multinomial with 'no ADL/IADL' as the reference category. Two different models have been analysed. In model-1 socioeconomic variable, including physical activity and morbidity condition, has been used to predict the relative risk of having ADL/IADL. In model-2, life-course risk factors (education, health, and financial condition) have been included to predict the relative risk of ADL/IADL among old people. All the statistical analysis was done in Stata 17 software.

Results:

Table-2: Percentage distribution of ADL and IADL by socio-demographic

Socio-demographic Characteristics	ADL			IADL		
Age	**No ADL**	**Mild Difficulty**	**Severe Difficulty**	**No IADL**	**One IADL**	**Two or more IADL**
45 to 54	81.45	14.66	3.89	53.62	43.96	2.41
55 to 64	71.03	20.29	8.67	44.87	49.17	5.96
65 to 74	59.00	23.79	17.21	42.27	46.60	11.13
75+	39.55	22.02	38.43	37.04	42.11	20.85
Sex						
Male	78.39	14.10	7.51	45.88	47.64	6.48
Female	61.76	23.23	15.01	47.78	44.47	7.75
Marital Status						
Currently not married	53.83	24.50	21.67	48.94	40.83	10.24
Currently married	75.04	17.07	7.89	46.17	47.78	6.05
Years of schooling						
No Education	55.22	24.60	20.18	63.08	31.32	5.61
1 to 5 years	65.29	21.48	13.23	49.53	42.44	8.03
6 to 10 years	75.97	16.63	7.40	40.79	52.19	7.02
11 years and above	82.15	13.02	4.83	31.77	59.37	8.86
Caste						
SC/ST	70.86	18.14	11.01	57.78	37.25	4.97
OBC	67.77	20.17	12.06	49.45	44.61	5.95
Other caste	70.11	18.67	11.22	36.24	53.59	10.17
Religion						
Non-Hindu	70.02	18.14	11.84	49.64	43.37	7.00
Hindu	69.10	19.43	11.47	45.81	46.95	7.24
MPCE						
Poor	68.14	19.03	12.83	56.11	39.10	4.79
Middle	70.12	18.71	11.17	46.56	46.46	6.98
Rich	70.22	19.25	10.53	37.76	52.56	9.68
Living Arrangement						
Living alone	58.05	24.43	17.53	49.43	41.38	9.20
Living with spouse /or others	71.60	19.37	9.03	43.08	48.62	8.29
Living with spouse and children	75.75	16.58	7.66	46.75	47.72	5.53
Living with children and others	53.27	24.59	22.14	47.85	41.52	10.63
Living with others only	61.83	20.84	17.34	54.14	38.34	7.51
Region						

North	70.43	19.55	10.02	40.94	46.37	12.69
Central	68.60	19.44	11.95	50.60	43.73	5.66
East	65.22	21.40	13.39	47.28	46.86	5.85
North-east	76.63	14.77	8.59	57.56	35.00	7.43
West	63.62	23.44	12.94	33.08	56.97	9.95
South	64.78	20.81	14.42	48.94	44.52	6.54
Physical activity						
Active	79.12	13.05	7.83	32.73	57.03	10.24
Inactive	68.52	19.76	11.72	50.36	43.87	5.77
Morbidity						
No Morbidity	78.63	15.03	6.33	55.16	40.89	3.95
Any one Morbidity	65.63	21.47	12.90	40.80	50.72	8.48
Two or more Morbidity	47.31	26.79	25.90	33.75	51.48	14.77

Source: Author's calculation

The result of descriptive statistics is presented in **Table 2**. The frequency distribution shows that with aging, the number of ADL and IADL issues increases. In the study sample, 22.02% and 38.4% population of aged 75+ suffer from mild and severe difficulty in ADL, respectively, while 42.1% and 20.8% population aged 75+ observed to be suffering from one IADL and Two or More IADL respectively. Females are more vulnerable than males; 7.7% of females reported having two or more IADL issues, while only 6.4% of males reported the same. Percentage of female suffering from mild and severe difficulty in ADL found to be 23.2% and 15% respectively which was 14.1% and 7.5% for males.

Education makes a huge difference in both self-perceived health and ADL/IADL. Older adult with a higher level of education reported higher difficulty with two or more IADL 8.86% while only 5.61% of people with no education reported difficulty with two or more IADL. In contrast to ADL reporting, 20.2% sample population with no education reported severe suffering in ADL problems than 4.8% of people who have 11 or more years of schooling. Same trend was also observed in the case of suffering from mild ADL. The suffering from severe ADL were observed to be lower among people with high (rich) monthly per capita expenditure (MPCE), 10.5% among them and 12.8% in low (poor) MPCE. But two or more IADL is lower among people with low MPCE and high among Higher MPCE people. It is observed that severe ADL difficulties are higher in Southern Region which is 14.4% followed by East 13.4%. In case of IADL difficulties in one IADL it is highest 57% in Western region followed by 46.9% in Eastern region of India. Issues in two or more IADL was observed in Northern region of India which is 12.7% and lowest 5.7% in Central region of India. Old people living with spouses and children have less difficulty in ADL which is observed to be 16.6% and 7.7% in mild and severe categories of ADL respectively. While difficulty in one IADL observed to be highest in elderly 48.6% living with spouse or others. In living arrangement category highest percentage of difficulty in two or more IADL 10.6% observed in elderly living with children and others. Physical activity plays an important role in active daily living; around 10.2% of older people who are physically active reported having two or more ADL issues on the other hand, physically active people reported lower severe ADL issues 7.8% in comparison to 11.7% of physically inactive people suffered from severe ADL difficulties. Results also show that more morbidity makes it difficult to perform a daily living activity. People having two or more morbidity reported to suffer more problems in ADL and IADL.

Table-3: Percentage distribution of ADL and IADL by childhood risk factors

ADL				IADL			
Dropped school during childhood	**No ADL**	**Mild Difficulty**	**Severe Difficulty**	**Dropped school during childhood**	**No IADL**	**One IADL**	**Two or more IADL**
No	75.15	16.75	8.10	**No**	40.40	51.86	7.74
Yes	67.50	22.44	10.05	**Yes**	31.78	57.81	10.41
Health during childhood				**Health during childhood**			
Good	69.97	19.29	10.75	**Good**	46.00	47.01	6.99
Fair	68.83	18.02	13.15	**Fair**	52.58	40.15	7.27
Poor	59.59	24.66	15.75	**Poor**	42.81	46.58	10.62
Financial status of the household during childhood				**Financial status of the household during childhood**			
Good	70.85	18.42	10.73	**Good**	39.25	51.41	9.34
Average	71.47	18.17	10.36	**Average**	46.16	46.31	7.53
Poor	64.07	21.46	14.47	**Poor**	50.00	44.22	5.78

Source: Author's calculation

Table 3-shows the percentage distribution of ADL and IADL by childhood risk factors. It shows that prevalence ADL/IADL issues was high among older adults who dropped school during childhood. About 25% of respondents currently with mild ADL issues perceived their health as 'poor' during childhood. The prevalence of IADL issues in elderly respondents based on their perceived financial status as 'good' was 51.41% for one IADL issue and 9.34% for two or more IADL issues, whereas for older adults with No ADL it was 18.42% followed mild suffering in ADL (18.42%), severe suffering in ADL (10.73%).

Gender perspective-

Table-4: Gender-wise percentage of ADL, IADL, and early life risk factors

Characteristics	Female	Male
Activity of Daily Living		
No ADL	61.76	78.39
Mild Difficulty	23.23	14.1
Severe Difficulty	15.01	7.51
Instrumental Activity of Daily Living		
No IADL	47.78	45.88
One IADL	44.47	47.64
Two or more IADL	7.75	6.48
Dropped school during childhood		

No	96.59	96.58
Yes	3.41	3.42
Health during childhood		
Good	89.3	89.7
Fair	9.51	8.89
Poor	1.19	1.41
Financial status of the household during childhood		
Good	10.38	9.07
Average	61.18	59.62
Poor	28.43	31.3

Source: Author's calculation

Table 4- shows the prevalence of ADL and IADL in females and males. It shows that the prevalence of mild difficulty in ADL was higher in elderly female (23.2%) than elderly males (14.1%), while the prevalence with one IADL is higher in males (47.6%), than the female (44.5%). The prevalence of two or more ADLs was 7.7% among females and 6.5% among males. For both males and females, approximately. 97% of LASI age-eligible people responded that they had not dropped schooling. The percentage of older adults who perceive their health during childhood was good is higher in males 89.7% then the females 89.3%. Only 10.4%of female and 9.07% male respondents perceived their financial status as 'good' during childhood while 28.4% females and 31.3% males perceived financial status of the household during childhood as poor.

Results of multinomial logistic regression models

Table-5: Multinomial logistic regression for ADL difficulty by socio-economic and demographic factors

Characteristics	**ADL**	
	Mild ADL difficulty	**Severe ADL difficulty**
Age	**RRR (95% CI)**	**RRR (95% CI)**
45 to 54®		
55 to 64	1.525** [1.107, 2.101]	2.632*** [1.617, 4.282]
65 to 74	2.016*** [1.401, 2.902]	4.156***[2.490, 6.937]
75 +	1.741* [1.010, 3.002]	11.66*** [6.466, 21.03]
Sex		
Male®		
Female	2.213*** [1.601, 3.059]	1.726**[1.153, 2.583]
Marital status		
Currently not married®		
Currently married	0.828 [0.261, 2.627]	0.3 [0.0350, 2.562]
Years of schooling		
11 years & max®		
6 to 10 years	1.057 [0.690, 1.619]	1.835 [0.987, 3.411]
1 to 5 years	2.037** [1.276, 3.254]	2.853** [1.453, 5.604]
No education	2.264*** [1.432, 3.580]	5.429*** [2.832, 10.40]
Caste		

Others®		
OBC	1.07 [0.762, 1.504]	1.138 [0.738, 1.755]
SC/ST	1.144 [0.791, 1.655]	1.633* [1.029, 2.592]
Religion		
Hindu®		
Non-Hindu	1.345 [0.973, 1.858]	0.964 [0.658, 1.413]
MPCE		
Rich®		
Middle	1.462* [1.032, 2.072]	1.365 [0.883, 2.109]
Poor	1.293 [0.941, 1.775]	1.257 [0.852, 1.854]
Living arrangement		
Living alone®		
Living with spouse and/or others	0.536 [0.137, 2.100]	1.629 [0.157, 16.85]
Living with spouse and children	0.662 [0.174, 2.520]	2.52 [0.251, 25.29]
Living with children and others	0.782 [0.379, 1.615]	1.093 [0.460, 2.602]
Living with others only	0.783 [0.310, 1.979]	0.753 [0.245, 2.321]
Region		
North®		
Central	1.059 [0.669, 1.678]	1.271 [0.692, 2.336]
East	1.025 [0.636, 1.651]	1.801 [0.990, 3.275]
Northeast	0.741 [0.375, 1.462]	1.911 [0.897, 4.075]
West	1.581 [0.999, 2.502]	1.699 [0.899, 3.212]
South	1.199 [0.798, 1.800]	1.851* [1.084, 3.163]
Physical activity		
Active®		
Inactive	1.449 [0.798, 1.800]	1.344 [0.822, 2.199]
Morbidity		
No morbidity®		
Any one morbidity	1.715*** [1.288, 2.285]	2.067*** [1.423, 3.003]
Two or more morbidity	2.403*** [1.663, 3.473]	4.026*** [2.605, 6.221]

Note: ® = Reference category of predictors; No ADL is the reference category of independent variable; $p<0.01$=*** and $p<0.05$=**
Source: Authors calculation

Multinomial logistic regression results for factors associated with ADL difficulty are shown in **table 5**. The risk of ADL difficulties significantly increases with increasing age. Females, compared to males, were significantly more likely to have mild ADL difficulty (RRR=2.213, CI=1.601-3.059) or severe ADL difficulty (RRR=1.726, CI=1.153-2.583) difficulty than those with no ADL. The relative risk of mild ADL and severe ADL difficulty were more likely among people with any one morbidity (RRR for mild ADL=1.715, CI=1.288-2.285; RRR for severe ADL=2.403, CI=1.663-3.473) than those who had no morbidity. People with two or more morbidities suffered from more likely mild ADL issue (RRR=2.067, CI=1.423-3.003) and severe ADL (RRR=4.026, CI=2.605-6.221) difficulties.

Table-6: Multinomial logistic regression for IADL difficulty by childhood risk factors

Characteristics	IADL	
	One IADL	Two or more IADL
	RRR (95% CI)	
Age		
45 to 54®		
55 to 64	1.301* [1.008, 1.680]	1.912 [0.996, 3.670]
65 to 74	1.643** [1.208, 2.236]	6.131*** [3.192, 11.78]
75 +	2.667*** [1.208, 2.236]	17.66*** [8.084, 38.58]
Sex		
Male®		
Female	1.256 [0.985, 1.602]	1.753* [1.066, 2.885]
Marital status		
Currently not married®		
Currently married	0.677 [0.273, 1.679]	0.614 [0.0697, 5.409]
Years of schooling		
11 years & max®		
6 to 10 years	0.642** [0.463, 0.890]	0.726 [0.401, 1.316]
1 to 5 years	0.425*** [0.290, 0.623]	0.595 [0.295, 1.201]
No education	0.215*** [0.148, 0.313]	0.160*** [0.0750, 0.342]
Caste		
Others®		
OBC	1.137 [0.861, 1.502]	0.82 [0.433, 1.552]
SC/ST	1.420* [1.051, 1.919]	1.851* [1.011, 3.391]
Religion		
Hindu®		
Non-Hindu	0.879 [0.679, 1.138]	0.736 [0.451, 1.200]
MPCE		
Rich®		
Middle	1.087 [0.815, 1.449]	2.207* [1.185, 4.111]
Poor	1.413** [1.095, 1.823]	2.841*** [1.632, 4.946]
Living arrangement		
Living alone®		
Living with spouse and/or others	2.446 [0.815, 7.343]	5.5 [0.382, 79.14]
Living with spouse and children	2.705 [0.923, 7.925]	5.686 [0.406, 79.56]
Living with children and others	1.522 [0.793, 2.919]	4.267 [0.905, 20.12]
Living with others only	0.681 [0.296, 1.565]	0.673 [0.0785, 5.762]
Region		
North®		
Central	0.711 [0.484, 1.044]	0.483 [0.0785, 5.762]
East	0.703 [0.476, 1.038]	0.261*** [0.117, 0.579]
Northeast	0.441** [0.270, 0.720]	0.449 [0.195, 1.036]
West	1.204 [0.803, 1.805]	0.622 [0.300, 1.290]
South	0.768 [0.546, 1.079]	0.444* [0.238, 0.826]
Physical activity		

Active®		
Inactive	0.676** [0.503, 0.910]	0.519* [0.304, 0.886]
Morbidity		
No morbidity®		
Any one morbidity	1.446** [1.145, 1.827]	3.802*** [2.273, 6.360]
Two or more morbidity	1.927*** [1.394, 2.666]	4.924*** [2.672, 9.072]

Note: ® = Reference category of predictors; No IADL is the reference category of independent variable; p<0.01=*** and p<0.05=**
Source: Authors calculation

Table 6 depicts that the risk of two or more IADL difficulties was nearly 17.66 times higher in people aged 75 or above than aged 45 to 54. Uneducated people had less risk (0.215 times) of having one IADL difficulty than their counterparts. It significantly increases with increasing years of schooling. There is a significant association between physical activity and having one IADL. Considering morbidity conditions, people who had one morbidity (RRR: 3.802, CI=2.273-6.360) or more than one (RRR=4.924, CI=2.672-9.072) morbidity condition suffered from two or more IADL difficulties.

Table-7: Multinomial logistic regression for IADL and ADL difficulty by childhood risk factors

Characteristics	IADL		ADL	
	One IADL	Two or more IADL	Mild ADL difficulty	Severe ADL difficulty
Dropped school during childhood	RRR ((95% CI)		RRR (95% CI)	
No®				
Yes	1.463*** (1.210-1.768)	1.660*** (1.215-2.268)	1.403** (1.135-0.733)	1.273 (0.948-1.709)
Health during childhood				
Poor®				
Good	1.113 (0.831-1.490)	0.656 (0.416,1.035)	0.668* (0.481-0.929)	0.498*** (0.332-0.746)
Fair	0.82 (0.602,1.116)	0.632 (0.387,1.031)	0.650* (0.456-0.926)	0.649 (0.420-1.003)
Financial status of household during childhood				
Poor®				
Good	1.09 (0.970,1.224)	1.702*** (1.379,2.101)	0.881 (0.762-1.018)	0.879 (0.722-1.069)
Fair	0.956 (0.885,1.032)	1.237** (1.060,1.442)	0.811*** (0.737-0.894)	0.698*** (0.612-0.797)

Note: ® = Reference category of predictors; No ADL and No IADL is the reference independent variable in multinomial; 0>p
Source: Authors calculation

IADL and ADL difficulties were also associated with childhood risk factors (Table 7). People who dropped school during childhood had more risk of one IADL (RRR=1.463, CI=1.210-1.768) than those who didn't have any IADL difficulty. Fair health during childhood had significantly 0.82 times less chance to had one IADL than people who had poor health during childhood. People who belonged to fair households during childhood were more likely to risk two or more IADLs (RRR=1.237, CI=0.060-1.442) than their counterparts.

Discussion:

This study mainly focuses on assessing early life risk factors associated with Activity of Daily Living and Instrumental Activity of Daily Living (ADL/IADL**)** in older adults using the life-course approach. In the study that the risk of ADL difficulties significantly increases with increasing age. Females, compared to males, were significantly more likely to have one ADL or more than one ADL difficulty than those with no ADL. The relative risk of one ADL and more than one ADL were more likely among people who had any one morbidity than those who had no morbidity. There was a significantly higher rate of ADL and IADL problems in the following groups: the older adults of 75+ age, females, currently not married, those who have 11 years & more years of schooling, those with lower income, those with lower levels of physical activity, those who did not exercise, and those with one or more than one morbidity. Various studies have shown that females have a higher risk of ADL and IADL issues. Females were more vulnerable than males; 15% of females reported having two or more IADL issues, while only 7.5% of males reported the same. Women with chronic diseases and social vulnerability are at greater risk of instrumental activity of daily living but an acute event such as stroke is greatly associated with disability among older men than women (Alexandre et al. 2014). Study reveals that elderly with two or more morbidity suffering from mild and severe ADL is observed to be highest 26.8% and 26% respectively while elderly having difficulty in one IADL and One or more IADL are observed to be 51.5% and 14.8% which is highest among any other categories of morbidity. Marital status and living arrangements are other important factors of healthy aging. Older adults living with a spouse or children have better physical and phycological health than those living alone. Numerous works of literature show that elderly widow and those who are living alone has poor social network and community engagement which ultimately affect their activity of daily living (Tomioka, Kurumatani and Hosoi 2017; Kim 2011).

Prevalence of mild and severe ADL issues are very less for the elderly living with spouse or children and spouse or others. Percentage of elderly suffering from mild and severe ADL are higher in living arrangement category of living alone and living with children and others**.** Education and income level make a huge difference in the perception of health, educated, and better economic status of the people who are more aware and have better access to information and services. In our study, about 10.4% of female respondents perceived their financial status as 'fair' during childhood, followed by 9% of elderly males. Available literature suggests that low childhood socioeconomic status is associated with disability among older people (Bowen 2009, Laditka and Laditka 2018), but socioeconomic status affects men and women differently. Older women with poor childhood circumstances are at greater risk of ADL and IADL disability than older men. For older men, it can be reduced by the type of occupation and ability to meet their financial needs (Landös et al., 2019). Childhood and adulthood financial constrain are significantly related to functional disability among older adults, particularly in urban areas (Zhong, Wang, and Nicholas, 2017). Underdeveloped or developing economies and weaker social policies often have a higher

rate of disability among older people and the earliest onset of disability. The lower economic status and poor health during childhood are associated with increased odds of being diagnosed with the disease (Lynch and Smith 2005). A life course approach to chronic disease epidemiology. Annual review of public health, 26(1), 1-35.) particularly heart diseases at later ages (Zhang and Lu 2021). A study by Zhong et al. (2017) on Chinese older adults reported that ADL and IADL are higher among women than men.

Conclusion:

The study of the life course approach to predict ADL and IADL provide an opportunity to assess the impact of early life risk factors on fictional ability at old age. Research is necessary to determine what factors contribute to the development of disability in older individuals through the life course approach. Older adults with low income and fewer years of schooling or uneducated have faced more difficulties with ADL and IADL than any others. Our study revealed a high prevalence of ADL and IADL among the 75+ age group. Also, females, currently unmarried elderly, physically inactive elderly, those who did not exercise, and those with more than one morbidity had significantly higher rates of ADL and IADL problems. So, special focus is needed on this group to improve these people's quality of life, and action can be taken in the care of elderly people, such as involving the social network and reducing the need for help with ADL/IADL. Lifestyle interventions targeting physical exercise, nutrition, and cognition appear to be effective against disability in ADL and IADL; To be effective, these interventions should be inexpensive, feasible, and easy to implement (Fougère et al., 2018).

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