

Research Paper

Poverty and Social Policy of Aging: Investigating the Determinants of Income Poverty Among Older Adults in the Organization for Economic Co-operation and Development Countries



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ABSTRACT

Objectives: Income poverty is one of the most common problems of old age. It varies among older adults living in different societies. This study aims to investigate the predictors of income poverty in older adults based on the data from Organization for Economic Cooperation and Development (OECD) countries.

Methods: The secondary data analysis method was used in the present study. The income poverty rate and its associated variables were extracted from 36 members of OECD countries and entered into the SPSS software, version 22. For data analysis, descriptive and inferential statistics, including the Pearson correlation coefficient test and multiple linear regression analysis were employed.

Results: The results showed that in the studied countries, the mean of income poverty among older adults was higher in women (11.48±16.2), and the elderly aged 75 years or above (12.57±16.1). The income poverty of older adults was significantly correlated with older adults' share in the gross domestic product ($r=-0.376$, $P=0.024$), targeted pension coverage ($r=-0.505$, $P=0.003$), income sources based on public transfers ($r=-0.460$, $P=0.005$), income sources from work ($r=0.697$, $P=0.000$), mandatory pension contribution rate ($r=-0.343$, $P=0.040$), and net pension replacement rate ($r=-0.424$, $P=0.010$). The results of regression analysis also revealed that variables of income sources from work and targeted pension coverage explained 66% of the variance in income poverty among older adults.

Discussion: It is important to pay attention to the variables of age and gender of older people to overcome economic vulnerability in social policies. It is also necessary to consider the role of the share of public transfers and basic old-age pensions to reduce older adults' poverty. The lessons to be learned from OECD countries in this research are useful for the social rehabilitation of older adults in Iran.

Keywords:

Aging, Income poverty, Gender, Social assistance, Social policy of aging, Social rehabilitation

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Highlights

- It is necessary to pay attention to factors that determine income poverty among older adults, such as income sources from public transfers and work, coverage of targeted pensions, etc.
- It is essential to expand government spending on the elderly's affairs and increase the net pension replacement rate to reduce poverty among older people and improve their welfare.
- It is important to pay particular attention to the variables of gender and age in social policies for old age.
- A basic old-age pension to prevent the socioeconomic consequences of old-age poverty is recommended.
- It is essential to provide social rehabilitation and social support services for vulnerable groups of older adults.

Plain Language Summary

Income poverty is one of the most important problems among older adults in any society and investigating determinants of income poverty among older adults based on the experiences of countries can help social policies on aging and poverty; namely, social policies that reduce poverty and improve the welfare and quality of life among older adults. The results showed that income poverty was significantly higher among older women compared to older men. Also, the income poverty of the old-old group was higher than that of the young-old group. Based on the results, raising the share of government spending on older adults' affairs is suggested and can be highly effective in preventing poverty among older adults. It is recommended to consider a basic old-age pension to prevent the socioeconomic consequences of old-age poverty. In addition, the improvement of retirement pensions and social support for older persons is crucial in preventing poverty and improving the welfare of older adults. Finally, considering the high prevalence of income poverty in old age, it is necessary to provide social rehabilitation and social support services for older adults (especially vulnerable groups and old-old) to improve their lifestyle, behaviors, and economic empowerment.

Introduction

Population aging is a universal phenomenon that has been predicted in nearly all countries worldwide. In 2020, 9.3% of the world's population was ≥ 65 years old. Also, according to reports in 2020, nearly 727 million people were 65 years old or above in the world, which is predicted to reach above 1.5 billion by 2050 (a 2-fold increase). In addition, estimates suggest that the share of older adults in the world's population will increase from 9.3% in 2020 to 16% in 2050 [1]; nevertheless, the speculated increase in the aging population will not be similar in different parts of the world. Considering the development status, the [United Nations](#) reported that the rate of population aging will be much higher in developing countries when compared to developed countries. So far, the fastest rate of population aging has been reported in developing countries, with the number of older people increasing by 60% from 2000 to 2015. This rate is predicted to increase by 71% from 2015 to 2030 [2].

The phenomenon of population aging and older adults' socioeconomic status can affect the economic development of countries with older populations in the future [3]. This phenomenon also raises various questions and challenges regarding the everyday life activities and experiences of older persons and their families. Moreover, governments' responses to the needs of this population and their families have been highlighted [4], as aging is a threat to the growth of public welfare and health and imposes high care costs on communities [5]. Consequently, population aging requires social policies in any country.

Older people are one of the target groups in social policymaking and should be considered as important as other population groups in social policies. Even in some cases, more attention should be paid to this group as they face income uncertainties, along with increased treatment and care costs in old age [6]. Governments establish social policies and programs to protect older adults against poverty and to smoothen the transition from work to retirement [7, 8]. Social policies and programs for older people provide income support for this group

to prevent any decline in their quality of life and lifestyle while growing old.

The “social safety net” is a non-participatory social assistance program for the poor, sick, and older people with disability who have no or very limited work experience. It is commonly funded by public tax revenues, providing minimum benefits to cope with old-age poverty, which can be either universal (comprehensive) or based on a means test [9]. The goal of social policies for older people is mainly the improvement of welfare and quality of life in old age.

On the other hand, income poverty is one of the common problems among older people. Townsend (1981) identifies older persons as one of the main groups at risk of poverty and dependence [10]. Ferreira (2005) also believes that vulnerable groups, including older people, are one of the most poverty-stricken groups in any society [11]. One of the reasons for old age poverty is that access to income security for older adults is closely related to inequalities in the labor market and employment [12]; therefore, income poverty can vary based on gender and age group. The role of social security and pension systems is decisive in old age poverty. The two core objectives of pension systems are to smoothen consumption over an individual’s life and reduce poverty in retirement [13]. Research also demonstrates that social security and pension systems are highly effective in reducing poverty and income inequality among older persons [14-16]. Pensions constitute the largest and most important part of older adults’ income and play an important role in preventing and coping with poverty in old age [16]. Moreover, social support for the elderly, provided as old-age pensions, is very effective in reducing older adults’ poverty. In this regard, Willmore (2004) argued that inclusive schemes can significantly affect poverty [17]. Also, social pension schemes remarkably reduce poverty in elderly’s households [18-21]. These pensions have been particularly effective in low-income countries. Additionally, Kakwani and Subbarao (2007) along with Bertranou et al. (2004) found that social pensions in low-income countries, such as African and Latin American countries, contributed to the reduction of old-age poverty [21, 22].

Meanwhile, studies show that the limitations of formal social support systems pose a major challenge to providing income security for older people [19]; besides, high poverty rates among older people indicate insufficient welfare support [23]. The studies show that older adults experience high levels of poverty in developing countries, as only a few of these countries have an old-age

social pension program (or very limited coverage) [24, 25]. Accordingly, inequality in the experience of old-age poverty should be considered in different societies.

Growing old is a social phenomenon, experienced unequally in different communities and societies. Various studies have been conducted in the field of poverty, but investigation of social policy or macro-level predictors of poverty in old age has received less attention. Identifying the macro-level factors of poverty may help save resources and provide targeted support to vulnerable older adults in developing countries. Therefore, the present study aims to examine the correlates of income poverty among older persons, based on the data gathered from members of the [Organization for Economic Cooperation and Development \(OECD\)](#) countries. Since, the [OECD](#) data includes different countries from Europe, the United States, and Asia, the status and related factors of old age poverty can be well understood. Also, this is the only available data regarding policy factors related to old-age income poverty.

Old age poverty studies only consider case studies, such as Vietnam [19, 26], Hong Kong [23], and Nigeria [27], or investigate the European and advanced developed countries [15, 28, 8, 29, 16]. The results of this study can be also applied to social welfare policy-making for older adults in Iran. Considering the high rate of poverty among older adults (24.9%) in Iran [30], the experience of other countries with low rates of poverty will help Iran’s policies in managing the issue of old age poverty and making more effective plans on the most important factors correlated with poverty reduction.

Materials and Methods

In this study, a secondary data analysis method was applied. The social data of 36 member countries of the [OECD](#)¹ were extracted from the [OECD](#) database² regarding various indicators, such as the income poverty rates among older persons, net pension replacement rates, mandatory pension contribution rates, public expenditure on old age and survivors benefits (gross domestic product [GDP] percentage), public expenditure on old age and survivors benefits level (percentage of total government spending), income sources of the older persons (public transfers, occupational transfers, capital, and work), coverage of old-age pensions (minimum, targeted, and residence-based), and value of old-age pension benefits (Table 1). According to our literature review, these variables were examined as contributing

1. As of 2018, a total of 36 countries were members of the OECD, and these countries were investigated in the present study.

2. The latest available data is intended.

Table 1. The determinants of old-age poverty and their definitions [31]

Indicators	Definitions
Old-age income poverty rate (>65 y)	The poverty criterion depends on the average household income in a particular country over a specific period. In this indicator, the poverty line is set at 50% of the average disposable household income.
Net pension replacement rate by earnings	Net pension replacement rate by earnings represents the adequacy of the pension system. At the net replacement rate, taxes and premiums imposed on the individual's wages and pensions are deducted from their receipts, after which the replacement rate is calculated. Three coefficients are applied to reduce income inequalities among older persons and support low-income people. A factor of 1 is the average wage, a factor of 0.5 is half the average wage, and a factor of 1.5 is equal to 1.5 times the average wage.
Mandatory pension contribution rate for an average worker	The mandatory pension contribution rate for an average worker indicates the effective rate of mandatory pension insurance premiums (public and private) and the share of the employer and the insured (employees).
Public expenditure on old age and survivors benefits	One of the indicators representing the extent of benefits is the amount of public expenditure on old-age benefits. The share of these expenditures in the total government spending and the country's gross domestic product is calculated by this indicator.
Income sources of the older persons	The income sources of older persons are classified into 4 types of resources related to public transfers, occupational transfers, capital, and work. The income sources of older persons determine the share of income sources among older persons.
Coverage of old-age pensions	Coverage of old-age pensions represents the amount of coverage of old-age pensions, such as minimum, targeted, and residence-based pensions.
Value of old-age pension benefits	It represents the value of old-age pension advantages.

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factors to old-age poverty in this study. Next, the collected data were entered into the SPSS software, version 22, and analyzed using descriptive and inferential statistics, such as independent sample t-test, one-way analysis of variance (ANOVA), the Pearson correlation coefficient test, and multiple linear regression analysis using the stepwise method. The level of statistical significance was set at 0.05(5%).

Results

As shown in Figure 1, the lowest old-age income poverty rates were reported in Denmark (3%), the Neth-

erlands (3.1%), Iceland (3.1%), and Norway (4.3%), respectively, while the highest income poverty among older adults was reported in Estonia (37.6%), Latvia (39%), and Korea (43.4%), respectively.

Table 2 compares poverty among older people (>65 years) and other age groups, such as the working-age population (18-65 years) and children (<18 years). Also, the rate of poverty is reported based on age in different age groups of the older adults, i.e. 66-75 years (young-old) and >75 years (old-old), and also based on gender. Income poverty was significantly higher among older women compared to older men ($t=-2.26$, $P=0.027$). The

Table 2. Indicators of old-age income poverty by gender and age groups

Indicators		Mean±SD	Minimum	Maximum	F/t	P
Old-age income poverty by gender	Women	16.2±11.48	1.7	48.3	-2.26	0.027*
	Men	10.8±8.37	2.2	37.1		
Old-age income poverty by age groups of older persons	65-75	12.1±8.5	2	34.6	-1.78	0.078
	>75	16.6±12.57	1.1	55.1		
Old-age income poverty by age groups	0-17	12.2±5.20	4	23	3.23	0.043*
	18-64	10±2.7	5	16		
	≥65	14.2±10.25	3	43		

*Significant at $P<0.05$.

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Table 3. The correlation coefficient between old-age income poverty and independent variables

Old-age Income Poverty	Correlation Coefficient	Old-age Income Poverty	Correlation Coefficient
The benefit value of the minimum pension	-0.165	Public expenditure on old-age and survivors (% of GDP)	-0.376*
Sources of income from public transfers	-0.460**	Public expenditure on old-age and survivors (% of total government spending)	-0.299
Sources of income from occupational transfers	0.057	Coverage of residence-based basic pension	-0.302
Sources of income from capital	0.071	Coverage of targeted pension	0.505**
Sources of income from work	0.697**	Coverage of minimum pension	-0.249
Mandatory pension contribution rates	-0.343*	The benefit value of a residence-based basic pension	-0.279
Net pension replacement rates	-0.424**	The benefit value of the targeted pension	-0.261

*Correlation is significant at the 0.05 level, **Correlation is significant at the 0.01 level.

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mean income poverty in the studied countries was 16.2% among women and 10.8% among men.

Regarding the mean old-age poverty by age, although the income poverty of the old-old group was higher than the young-old group, the difference was not significant at the 0.05 level. A comparison of the mean income poverty between the age groups of children, individuals at the age of economic activity, and older people showed that individuals in the age range of 18-65 years (economic activity age) had significantly lower income poverty compared to children under 18 years and the elderly over 65 years ($F=3.23$, $P=0.043$).

The correlation coefficients between old-age income poverty and independent variables (Table 3) suggested a significant negative correlation (a weak correlation) between old-age income poverty and the share of GDP. In other words, with an increase in the share of the aging population in GDP, their income poverty is reduced. On the other hand, there was a significant positive correlation (moderate) between old-age income poverty and targeted pension coverage. In other words, with an increase in the targeted old-age pension coverage, old-age income poverty also increased.

The results showed a significant negative correlation (moderate) between old-age income poverty and income sources based on public transfers. In other words, with an increase in income sources based on public transfers, the income poverty of older persons decreased. Conversely, a significant positive correlation (strong) was observed between old-age income poverty and income sources from work. Accordingly, with an increase in in-

come sources from the older adult's work, their income poverty also increased.

On the other hand, there was a significant negative correlation (weak) between old-age income poverty and the mandatory pension contribution rates; that is, with an increase in the mandatory pension contribution rates of each country, the income poverty of older persons decreased. Countries that receive high mandatory pension contribution rates from their employees offer more benefits during retirement which can ultimately reduce old-age income poverty. Finally, a significant negative correlation (moderate) was detected between old-age income poverty and the net pension replacement rate; accordingly, with an increase in the net pension replacement rate, the income poverty of older persons decreased.

To identify variables predicting old-age income poverty, a stepwise multiple linear regression analysis was performed, where the income poverty of older persons was considered as a dependent variable, and other variables were regarded as independent predictor variables. This method is suitable for investigating the simultaneous effect of each predictor variable on the dependent variable. The results of stepwise regression analysis revealed that variables of income sources from work and the amount of targeted pension coverage could significantly explain 66% of the variance in old-age income poverty in 2 steps of the analysis, respectively. In the first step, income sources from work positively predicted the significance of old-age income poverty ($P=0.000$; $R^2=0.561$; $\beta=0.749$). This variable alone could explain 56% of the variance in the income poverty of older persons.

Table 4. Results of stepwise regression analysis of predictors of old-age income poverty

Model	Indicators	F	P	B	β	t	P	R	R ²
1	Constant	33.272	0.000	-2.924	-	-0.967	0.342	0.749	0.561
	Sources of income from work			0.682	0.749	5.768	0.000		
2	Constant	24.376	0.000	-2.762	-	-1.019	0.318	0.813	0.661
	Sources of income from work			0.602	0.661	5.466	0.000		
	Coverage of Targeted pension			0.175	0.328	2.711	0.012		

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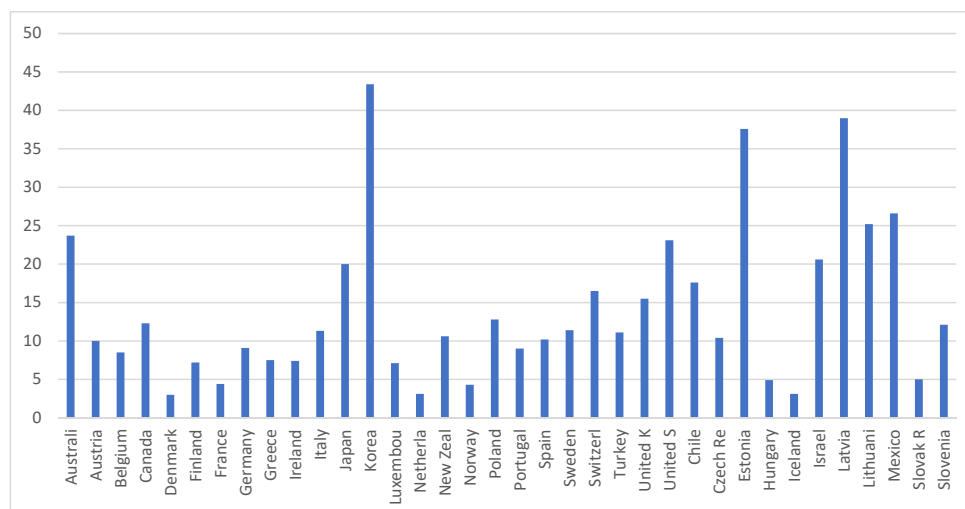
In the second step, 2 variables of income sources from work and the amount of targeted pension coverage significantly predicted old-age income poverty (Equation 1). In this analysis, by adding the variable of targeted pension coverage rate to the equation, the R² coefficient increased by 10% (R²=0.661). Based on the coefficient of determination, 66% of the variance in old-age income poverty could be explained by two variables of income sources from work and the amount of targeted pension coverage in the regression model. Overall, the regression model had an acceptable fit (F=24.376, P=0.000). According to the standardized β coefficients, the variables of income sources from older adults' work and the amount of targeted pension coverage played the most significant roles in predicting the income poverty of older people and explaining the changes, respectively (Table 4).

1. Old-age income poverty=-2.762+0.661 (sources of income from work)+0.328 (coverage of targeted pension)

Discussion

Poverty is one of the most important problems among older persons in any society. In the present study, the experience of income poverty was investigated in some member countries of the OECD. The findings showed that income poverty was higher among older women compared to older men and gender significantly contributed to old-age poverty. Historically, women have had less access to job opportunities, depriving them of pension insurance. Besides, during their working life, women devote more time to family caregiving and have more occupational leaves, if employed, which in turn reduces their income in old age.

The International Labor Organization (ILO) has declared that older women are more at risk of poverty compared to older men [12], which is related to different employment conditions, in addition to the unequal income of women and men during employment. More-



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Figure 1. Income poverty rates for older persons in organization for economic co-operation and development countries

over, women have a high share of family responsibilities and mostly have informal, low-income, insecure, or part-time jobs, which can influence their retirement benefits [12, 32]. Besides, previous studies have reported a high prevalence of poverty among older women [23, 33]. They suggested that women are more likely to experience old-age poverty due to lower participation rates in the labor market, family-related employment interruptions, and wage gaps compared to men [8, 34].

The present findings showed that income poverty was lower in the young-old elderly group (66-75 years) compared to the old-old elderly group (>75 years); it can be concluded that individuals are more exposed to income poverty as they grow older. With advancing age, the incidence of diseases increases, and the increased medical and healthcare costs raise the risk of income poverty. Besides, with aging, which is associated with disabilities people are less able to work and generate income. On the other hand, the younger age group of older adults had better physical and mental abilities for work during old age, which increased their income level. Studies by Rank and Hirschl (1999) and Vu and Nguyen (2021) confirmed these results, as they also found that older people were more vulnerable to poverty [35, 36]. Even if older people are supported by social support systems, they experience a higher poverty rate compared to their younger counterparts [37].

Poverty varies in different age groups. Individuals in the economic-activity age group of 18-65 years had lower income poverty compared to children under 18 years and older people over 65 years. On the other hand, income poverty was higher among older persons compared to children and individuals at the age of economic activity, as the amount of income decreased with retirement. Also, the financial burden increases in old age due to the deterioration of health, the development of various diseases, and the increased need for healthcare services, which can lead to more poverty. Based on the results, the level of income poverty was higher among older persons compared to children and individuals at the age of economic activity. In this regard, a study by Forster et al. (2003) reported that in the last decades of life, the average income of older adults was significantly lower than other age groups, while the rates of income poverty were much higher in this population [38]. However, given the increased costs of old age, especially at old-old age, increased financial security is essential.

The results of the present study revealed that old-age income poverty and the share of the aging population in GDP were negatively correlated. In other words, with

an increase in the share of the aging population in GDP, their income poverty decreased. Smeeding and Williamson (2001) also showed that an increase in public expenditures was associated with lower poverty and income inequality among older people [29]. Similarly, Jacques et al. (2021) confirmed the role of public pension expenditures in the old-age poverty rates [39].

According to the present findings, the income poverty of older persons and targeted pension coverage had a significant positive correlation; that is, with an increase in the older adults' targeted pension coverage, old-age income poverty also increased. Targeted pension coverage for older persons in any country represents a high level of old-age income poverty. Countries with this type of pension scheme cannot overcome the problem of elderly poverty. It is worth mentioning that the main purpose of targeted pensions is to meet the basic needs of the elderly, whose income is inadequate [40]. These plans are based on the means tests.

Evidence suggests that a minimum pension for older adults is effective in overcoming income poverty in old age. In Argentina, Brazil, Chile, and Uruguay, with minimal pension systems, the old-age poverty rates are reportedly low [41]. Conversely, another study reported that countries with targeted models experienced more poverty based on the means test and basic security model [42]. In this regard, Ebbinghaus (2021), in a study on European countries, also showed that minimum income security (especially through basic, guaranteed, or minimal pensions) is necessary to reduce severe poverty in the retired population [28]. Therefore, the means test is not used in countries with lower poverty rates and all individuals over the age of 65 years are pension recipients.

Additionally, the results of the current study showed that the income poverty of older people and income sources based on public transfers were significantly and negatively correlated. In other words, with an increase in income sources based on public transfers, the income poverty of the elderly decreased. The higher share of public pensions in the income of older persons is associated with lower poverty rates [12]. A comparative analysis of 14 advanced welfare state members of the OECD (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, the United Kingdom, and the United States) during 1980-2010 showed that extended government pensions were effective in reducing the number of elderly living below the poverty line [16]. Universal old-age pension schemes, alone or in combination with income-related schemes, can reduce poverty and income inequality [43].

The role of public pensions is significant in income security and old-age poverty reduction [16]. According to a study by Korpi and Palme (1998), the more a system seeks to create equality through public transfers, the less likely it is to reduce poverty and inequality [42].

The present results showed that income poverty among older adults and income sources from work among them had a significant positive correlation. Accordingly, with an increase in income sources from work, old-age income poverty also increased. Besides, an ILO report (2014) indicated that in some countries where the public pension coverage is low, although most older men and women continue working as long as they physically can, poverty is not necessarily prevented [12]. Accordingly, the likelihood of income poverty among older adults increases when they become dependent on income sources from work. For example, Adisa (2019) showed that many older people continue working to overcome their economic vulnerability in the absence of social support schemes [27]. However, if older adults solely rely on their income sources, the risk of poverty increases (as reported in countries, such as Mexico, Chile, and Korea); however, if they have access to other income sources, including public transfers, along with income sources from work, they will not be exposed to the risk of poverty [26].

Based on the current findings, old-age income poverty and the mandatory pension contribution rate were negatively correlated. In other words, with an increase in the mandatory pension contribution rate in each country, the income poverty of older people decreases. The mandatory pension insurance premium is an indicator of the adequacy of the pension system. The mandatory pension contribution rate in pension systems is directly related to the pension payment system. Countries with higher pension premium rates (e.g. Italy) often offer higher-than-average retirement benefits or provide longer retirement periods due to younger retirement age (e.g. France) [31]. Therefore, the present results showed a significant negative correlation between old-age income poverty and the net pension replacement rate; that is, with an increase in the net pension replacement rate, income poverty decreased. The replacement rate is one of the most important criteria for retirement pension adequacy [44]. Holzmann and Guven (2009) also proposed replacement rate as a useful criterion for measuring the adequacy of retirement benefits [45]. This indicator represents the adequacy of the pension system and indicates the power of the system in providing income and livelihood [31]. It is the ratio of pension payment to pre-retirement income [39]. It also shows income changes in the retirement period

compared to the employment period; the higher this indicator is, the lower the level of old-age poverty will be.

Finally, the lessons to be learned from this study is that developing a basic pension in Iran is necessary to prevent old-age poverty among the present cohort of older adults as well as the baby boomer generation in the future. The experience of countries with high percentages of aging populations and low rates of old-age poverty such as Denmark, Norway, Netherlands, and Island, show high rates of net pension replacement, public expenditure on old age, and having residence-based pensions.

Turkey has almost the same percentage of the aging population as Iran but with a lower rate of old age poverty due to the high rate of pension replacement and providing a minimum pension with means-test. The ranking of Slovakia and Hungary's human development index is close to Iran but with a very low rate of old age poverty due to the high proportion of public transfer in income sources of the older persons. Although these countries do not have universal pension coverage, they could reduce the old-age poverty rate with a high share of public transfer policies. Countries such as Mexico with a higher poverty rate than Iran show again the main role of public expenditure on old age.

Conclusion

Based on the present results, it is important to pay particular attention to the variables of gender and age in social policy-making for old age. It is recommended to consider vulnerable groups of older adults (e.g. older persons without pension insurance, working older people, low-income older people, oldest-old individuals, and older women) to overcome their economic vulnerability. Moreover, it is suggested to consider the role of macro social support for older adults in reducing old-age poverty. Increasing the share of public transfers in the income sources of older adults and raising the share of government spending on older adults' affairs can be highly effective. Given the significant relationship between old-age income poverty and the net pension replacement rate, improvement of retirement pensions, and social support for older persons is crucial for preventing poverty and improving the welfare of older adults. Also, adequate old-age benefits can reduce working for "living" toward working for "being active."

Considering the increased prevalence of income poverty in old age, it is necessary to provide social rehabilitation and social support services for older adults (especially vulnerable groups and the oldest-old) to improve

economic empowerment. Governments should also prepare people for successful aging based on the life course approach. According to this approach, old age is an outcome of previous life experiences, and during their working life, especially regarding financial matters. Reinforcement of this approach can prevent income poverty in old age in any society.

Study limitations

One of the limitations of the present study is that the role of sociocultural context, especially social and cultural norms, in old-age poverty was not considered. It should be noted that in some cultures, some traditions and norms reduce the risk of poverty among older adults. Also, in the present study, only the components of formal social support were investigated, whereas informal social support networks in the form of a child- and kin-centered support or other community-based networks as another source of old-age income support were not examined in this study.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be regarded in this research.

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Authors' contributions

Supervision: Ali Akbar Taj Mazinani; Methodology Shiva Parvaei and Nasibeh Zanjari; Conceptualization and writing the original draft: Shiva Parvaei; Review and editing: All authors.

Conflict of interest

The authors declared no conflict of interest.

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