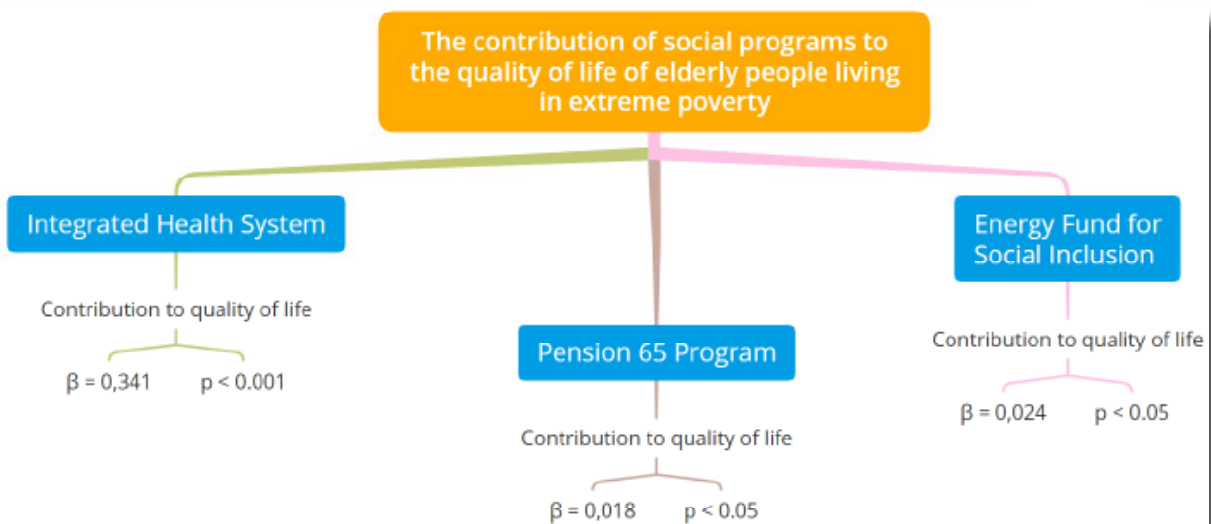


Social programs and the quality of life of elderly people in situations of extreme poverty

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Graphic Abstract



Abstract

Within 30 years, two out of every five people will be over 60 years old and more than 80% of these people will live in countries with medium and low economic incomes, so it is urgent that these countries implement policies to reverse this situation. This study aimed to identify the impact of social programs on the quality of life of elderly people living in extreme poverty. This study was explanatory-cross-sectional, working with 634 elderly people between 66 and 97 years old, in the provinces of: San Román, Puno and Azángaro in the Puno region. The Fumat scale was constructed to assess quality of life, followed by multiple linear regression analysis with a significance level lower than 0.05. The results indicated that the Comprehensive Health System is the social program that contributes most to quality of life ($\beta = 0.341$; $p < 0.001$) compared to the social programs: Social Inclusion Energy Fund ($\beta = 0.024$; $p < 0.05$) and the *Pensión 65* program ($\beta = 0.018$; $p < 0.05$). Maintaining a good quality of life and good health in adulthood is decisive for enjoying a full and satisfying life.

Keywords: Quality of Life. Social Programs. Emotional Wellbeing. Personal Development. Social Inclusion.

INTRODUCTION

It is estimated that, in 2050, two in five people will be over 60 years of age and more than 80% of these people will live in countries with low and medium economic incomes^{1,2}. Therefore, these countries have an urgent need to implement efficient public social protection policies with the aim of improving the quality of life of these people^{3,4}. Quality of life encompasses satisfaction with life in its entirety⁵ and is influenced by a series of factors, such as physical and mental health, access to health services, economic stability, social support and participation in social activities^{6,7}.

Furthermore, quality of life can have a considerable impact on physical and emotional well-being, promoting a healthy lifestyle, excellent medical care and integration into social activities. These initiatives can contribute to disease prevention and the reduction of factors that deteriorate quality of life in adulthood^{8,9}. Therefore, it is imperative to guarantee the quality of life of the elderly through various social programs that allow them to live in dignity, enjoy physical and mental well-being and continue contributing to the community. This practice not only represents an act of justice and respect, but is also beneficial to society as a whole.

The aging of the population in Latin America continues to rise, and it is expected that, by 2030, there will be more people over 65 than under 155. As a result, at the beginning of the 21st century, most Latin American countries implemented significant changes in their social policies, such as increased social spending and the creation of social programs focused on serving adult people in conditions of poverty or extreme poverty¹⁰. Thus, social programs emerged aimed at improving the quality of life of people over 65 years of age in conditions of poverty and extreme poverty.

In the context of Peru, a notable aging process has been observed in recent decades. In 1950, the proportion of the elderly population represented only 5.7% of the total population in the country. However, in 2021, this demographic experienced a significant increase, reaching 13% of Peru's total population. This increase highlights a growth of more than

50% in the elderly population over a period of approximately 70 years¹¹.

In less developed countries in Latin America, the number of people over 65 years of age is increasing even faster^{12,13}. The majority of these people enter old age without the right to a formal pension or other guaranteed form of income security, which further complicates their quality of life. Governments in these countries have introduced protection programs specifically aimed at the elderly. One example is the transfer of cash to the elderly, aiming to improve their quality of life and reduce the poverty rate¹⁴. However, little is known about the impact of social programs on the quality of life of the elderly.

In Peru, it is estimated that there are more than 4 million people over 65 years of age, representing 12.7% of the Peruvian population, and more than 800,000 elderly people in situations of poverty and extreme poverty, of which 52.4% are women and 47.6% are men¹⁵. It is important to highlight that more than 77% of the elderly population faces significant health problems that affect their right to life, integrity, dignity and social security, including poverty, abuse, violence, abandonment and dependence^{15,16}.

The Political Constitution of Peru recognizes the importance of protecting the elderly and, for this reason, the Peruvian State has implemented state policies that respond to the provision of benefits through programs and services that guarantee the full exercise of their rights, considering the elderly as a subject of law¹⁷. Social programs can significantly improve the quality of life of the elderly. Furthermore, numerous studies in health economics and public health have demonstrated that higher economic incomes are associated with better health behaviors⁴, healthier eating¹⁸, and better access to medical care, which ultimately leads to a better quality of life^{19,20}. Quality of life is assessed through a variety of indicators that analyze different aspects of human well-being, which can be classified into categories such as health, education, income, environment, safety and personal satisfaction.

Over the last decade, the Peruvian government has shown a greater willingness to invest in social protection programs aimed at people over 65 years of age. Among these programs, *Pensión 65* (PP65) stands out, whose main objective is to improve the well-being of the population over 65 years old in conditions of extreme poverty, according to the socioeconomic classification of the Housing Targeting System²¹. This program provides a subsidy of 250 soles (67.60 USD) per person every two months²². Another relevant program is the Comprehensive Health Insurance (SIS), which aims to achieve universal health coverage, offering subsidized coverage for people over 60 years of age in conditions of

poverty and extreme poverty¹⁶. However, only 40.8% of the elderly population is affiliated with the SIS¹⁵. Additionally, the Social Inclusion Energy Fund (FISE) was created to provide social compensation and promote access to Liquefied Petroleum Gas (LPG) in vulnerable sectors both urban and rural across the country²³. These social programs are part of government policy aimed at mitigating risk situations that directly affect the quality of life of elderly people in situations of poverty and extreme poverty.

The objective of this study was to identify the impact of social programs implemented by the Peruvian government on the quality of life of these elderly people.

METHOD

Descriptive, explanatory and cross-sectional study, carried out from May to November 2022. 634 elderly people (aged 65 years or over) from the Puno region, Peru were included, of which 7.7% (n= 49) are from the province of Azángaro; 69.7% (n=442) from the province of Puno and 22.6% (n=143) from the province of San Román. In this study, 207 (32.6%) men and 427 (67.4%) women participated. Regarding the level of education of the elderly who participated in this study, they were: Elementary School 138 (21.8%); High School 129 (20.3%); No studies 345 (54.4%) and

Higher Education 22 (3.5%), showing that more than 96% of elderly people did not have higher education. Participants were randomly selected from the Bank of the Nation queue when seniors attended to receive the PP65 program benefit.

The ages of participants in this study ranged from 65 to 97 years old, with an average age of 71.26 ± 6.273 years old, of which 71.6% (n=454) were between 65 and 74 years old; 22.7% (n=144) were between 75 and 84 years of age and 5.7% (n=36) were between 85 and 97 years of age (table 1).

Table 1 - Sociodemographic characteristics of elderly people in the Puno region, Peru, 2022.

Sociodemographic variables	n (Percentage)
Age	
Ages 65 to 74	454 (71.6 %)
Ages 75 to 84	144 (22.7 %)
Ages 85 to 97	36 (5.7 %)
Sex	
Female	427 (67.4 %)
Male	207 (32.6 %)
Education level	
No study	345 (54.4 %)
Primary	138 (21.8%)
Secondary	129 (20.3%)
Higher	22 (3.5 %)
Place of residence	
Azángaro, Puno, Peru	49 (7.7 %)
Puno, Puno, Peru	442 (69.7 %)
San Román, Puno, Peru	143 (22.6 %)

The quality of life of elderly people over 65 years of age was determined using the Fumat scale, which is designed for application in adults, with eight dimensions, which are: (1) Physical Well-Being, whose indicators are: health, activities of daily living, health care, leisure; (2) Emotional Well-Being, with indicators: satisfaction, self-concept, absence of stress; (3) Interpersonal Relationships, with indicators: interactions, relationships and support; (4) Social Inclusion, with indicators: integration and social support; (5) Personal Development, with indicators: education, personal competence and performance; (6) Material Well-Being, with indicators: economic status, employment and housing; (7) Self-determination, with indicators: autonomy, personal goals/values and choices; and (8) Rights, with indicators: human rights and legal rights.

The Fumat scale has 57 items organized into 8 dimensions, each item has a scale of always or almost always (4 points); frequently (3 points); sometimes (2 points) and never or almost never (1 point). To validate the Fumat scale, this instrument was applied to a pilot sample of 20 people over 65 years of age who had the same conditions as the research sample, reporting high internal consistency ($\alpha = 0.898$).

To evaluate the quality of the service of the PP65, SIS and FISE social programs, a questionnaire was applied consisting of 22 items with a *Likert* scale: 9 items to evaluate the service of the PP65 program; 7 items to evaluate the SIS program service; and 6 items to evaluate the FISE program service. This instrument presen-

ted an internal consistency of $\alpha = 0.837$.

The surveys were applied to people over 65 years of age who were in the PP65 program, aimed at elderly people in situations of poverty and extreme poverty. Before administering the questionnaires, participants were informed about the objectives of this study and the importance of informed consent. Data confidentiality was guaranteed through anonymous searches and secure storage of the information obtained. Participants received clear and complete information about the study objectives, procedures, possible risks and benefits, and the use of the data collected.

To collect information, home visits were carried out to apply the instruments in a personalized way. The data obtained were analyzed using Pearson's correlation coefficient to establish the relationships between the various variables and multiple linear regression analysis to examine the association between quality of life and social programs: PP65, SIS and FISE. Impact Assessment is a strategy that allows measuring the causal effect directly attributable to an intervention on the results expected through its implementation. For this, a multiple linear regression analysis model was used to examine (a) the *Pensión* 65 program, comprehensive health service and the FISE program as predictor variables of quality of life; (b) PP65, SIS and FISE as predictor variables of emotional well-being; (c) PP65, SIS and FISE as predictor variables of social inclusion. In all analyses, significances less than 0.05 were calculated using IBM SPSS V.26 software.

RESULTS

We can note that there are positive and statistically significant correlations ($p < 0.01$) between quality of life and the dimensions: Emotional well-being, Interpersonal relationships, Material well-being, Personal development, Physical well-being, Self-determination, Social Inclusion and Rights (table 2). The SIS program was the social program that most correlated with quality of life ($r = 0.340$; $p < 0.01$) compared to the social programs: PP65 ($r = 0.119$; $p < 0.01$) and FISE ($r = 0.071$; $p < 0.01$). Furthermore, the

SIS program was the social program that had the highest correlation coefficient with the dimensions of quality of life: Emotional well-being ($r = 0.317$; $p < 0.01$); Interpersonal relationships ($r = 0.308$; $p < 0.01$); Material Well-being ($r = 0.179$; $p < 0.01$); Personal development ($r = 0.327$; $p < 0.01$); Physical Well-being ($r = 0.339$; $p < 0.01$); Self-determination ($r = 0.219$; $p < 0.01$); Social inclusion ($r = 0.077$; $p > 0.05$) and Rights ($r = 0.310$; $p < 0.01$), in relation to the FISE program and PP65 Program (table 2).

The SIS, FISE and PP65 social programs positively influenced the quality of life of elderly people in poverty ($R^2=0.479$; $p<0.01$). The standardized coefficients β indicate that the SIS social program contributed significantly to the quality of life of the elderly ($\beta = 0.341$; $p<0.001$). However, social programs such as the FISE social program ($\beta = 0.024$; $p<0.05$)

and the PP65 social program ($\beta = 0.018$; $p<0.05$) had less contribution to the quality of life of elderly people in situations of poverty (table 3). Our results state that the social program of the Comprehensive Health System had an influence of more than 34% on the quality of life of elderly people in situations of poverty and extreme poverty.

Table 2 - Matrix of correlations of quality of life dimensions and social programs in Puno, Peru, 2022.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Emotional well-being (1)	-											
Interpersonal relationships (2)	,521**	-										
Material well-being (3)	,601**	,426**	-									
Personal development (4)	,755**	,614**	,545**	-								
Physical well-being (5)	,559**	,267**	,435**	,593**	-							
Self-determination (6)	,477**	,581**	,669**	,584**	,581**	-						
Social inclusion (7)	,402**	,459**	,483**	,286**	,409**	,617**	-					
Rights (8)	,364**	,427**	,153**	,209**	,032	,335**	,421**	-				
Quality of life (9)	,796**	,739**	,748**	,782**	,662**	,842**	,729**	,491**	-			
PP65 (10)	,229**	,129**	,063	,067	,072	-,088*	,105**	,136**	,119**	-		
SIS (11)	,317**	,308**	,179**	,327**	,339**	,219**	,077	,310**	,340**	,382**	-	
FISE (12)	,012	,216**	,005	,173**	,161**	,058	,102*	-,064	,071	,221**	,163**	-

** The correlation is significant at the 0.01 level (two-sided).

* The correlation is significant at the 0.05 level (two-sided).

Table 3 - Multiple linear regression model for predicting the quality of life of the elderly in Puno, Peru, 2022.

Model 1	Unstandardized coefficients		Standardized coefficients			95.0% confidence interval for B	
	B	DE	B	T	Sig.	Inferior limit	Upper limit
(Constant)	141.212	1.751		80.653	.000	137.774	144.650
PP65	.019	.145	.018	.019	.048	-.529	.432
SIS	3;506	.433	.341	8.091	.000	2.655	4.357
FISE	.201	.589	.024	.341	.043	-.956	1.357

Dependent variables: Quality of life

Table 4 - Quality of life and attention in the SIS social program in Puno, Peru, 2022.

	Quality of life		Total
	Bad	Regular	
SIS Program	Bad service	74	99
		100.0%	15.6%
	Regular service	381	381
		0.0%	60.1%
	Good service	154	154
	0.0%	24.3%	
Total	609	634	
	100.0%	100.0%	

The attention provided by the SIS social program is closely related to the quality of life of people over 65 years of age in situations of poverty and extreme poverty ($\chi^2=140.647$; $p<0.001$). It is important to highlight that 87.9% of people over 65 who receive good or regular care through the SIS program notice an impro-

vement in their quality of life. This program not only contributes to the physical health of beneficiaries, providing access to essential medical services, but also plays a crucial role in their emotional well-being, by offering comprehensive support that allows them to face their daily lives with greater security and peace of mind.

DISCUSSION

This study provides the first evidence on the impact of social programs on the quality of life of elderly people in situations of poverty and extreme poverty in the Puno region, one of the areas with the highest poverty rate in Peru. Our study reveals that the SIS social program ($\beta=0.341$; $p<0.05$) had the greatest influence on improving quality of life (endogenous variable), which highlights the importance of this program on the physical and emotional health of beneficiaries. In comparison, the social programs FISE ($\beta=0.024$; $p<0.05$) and PP65 ($\beta=0.018$; $p<0.05$) (table 3) also showed a positive impact, although to a lesser extent (figure 1). This research highlights the importance of investing in social programs that promote the comprehensive well-being of older people, improving both their physical and emotional health.

Our study adds to existing studies by showing a significant association between

the impact that social programs generate on quality of life, especially the SIS social program, which is in line with the results of several studies^{24,25,26,27}. Furthermore, our findings expand the investigation into the impact of social programs on quality of life, carried out in Latin American countries⁵, and others carried out in Peru^{10,28,29}, by confirming that the social program of the Comprehensive Health System (SIS) was the social program that most influenced the quality of life of people over 65 who participated in this study ($\beta=0.341$; $p<0.05$). The attention of the SIS social program in the Puno region is associated with the quality of life of people over 65 years of age in situations of poverty and extreme poverty ($\chi^2=140.647$; $p<0.001$), since 87.9% of people over aged 65 who received good or regular care in the SIS social program consider that this program contributed to a regular quality of life.

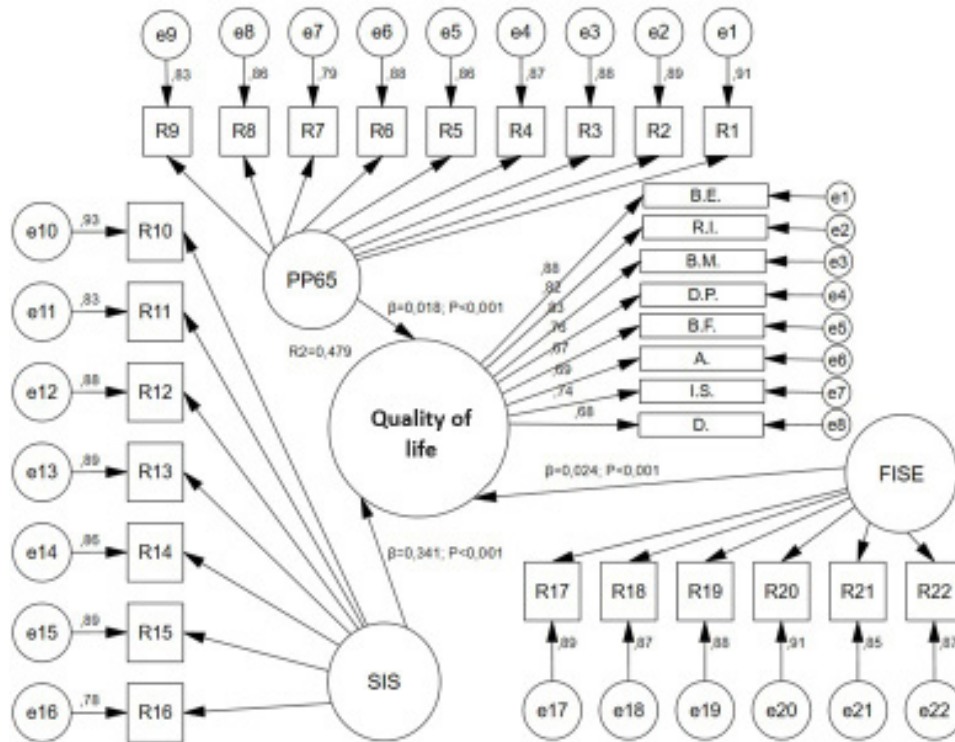


Figure 1 - Structural equation model of the influence of social programs on quality of life.

The Comprehensive Health System (SIS) is the social program with free access for elderly people in situations of poverty and extreme poverty that was most related to the quality of life of these individuals ($r=0.340$; $p<0.001$). This program showed an important association with several dimensions of well-being, including emotional well-being ($r=0.317$; $p<0.001$), interpersonal relationships ($r=0.308$; $p<0.001$), material well-being ($r =0.179$; $p<0.001$), personal development ($r=0.327$; $p<0.001$), physical well-being ($r=0.339$; $p<0.001$) and self-determination ($r=0.219$; $p<0.001$) (Table 2). These results highlight the effectiveness of the SIS in improving multiple aspects of the lives of elderly people, highlighting its crucial role in promoting a dignified and fulfilling life for this vulnerable population. The greatest impact of the SIS program on the quality of life of the elderly is its direct and personalized focus on medical care. When elderly people use the SIS program, they are cared for by health professionals, such as nurses and doctors, who provide them with warm and human care. This direct contact not only facilitates timely and appropriate medical

care, but also promotes an emotional bond and trust between patients and healthcare personnel, which is crucial for the emotional and physical well-being of older adults. In contrast, the PP65 program was limited to providing an economic bonus that beneficiaries could withdraw from Bank of the Nation, without establishing continuous or significant contact with health services. This reduced opportunities to create a human bond that could improve their emotional well-being. Likewise, the FISE program, which subsidized the cost of cooking gas through a voucher, also lacked direct interaction with beneficiaries. While economic support was undoubtedly valuable in easing the financial burden on older adults, it did not provide the opportunity for regular interaction with healthcare professionals or to receive personalized, comprehensive care.

The quality of life and health of older people are closely related and refer to the general well-being of an older person⁷, including physical, emotional, social and spiritual aspects³⁰. Health, in turn, is a fundamental component of quality of life and refers to the physical and mental sta-

te of a person^{27,31}. Maintaining a good quality of life and good health in adulthood is crucial to enjoying a full and satisfying life^{26,32-34}. Taking care of your health in adulthood is essential to enjoying a full and satisfying life³¹. This involves developing the ability to recognize and manage both positive and negative emotions. On the other hand, taking care of your body and mind through practices such as regular exercise, adequate rest, healthy eating, seeking pleasurable activities and practicing relaxation techniques. Health and emotional well-being in adulthood are fundamental to a good quality of life²⁵. Self-knowledge, stress management, healthy relationships, self-care, resilience, professional support and work-life balance are key aspects that contribute to optimal emotional health. Taking care of your emotional health is as important as taking care of your physical health to enjoy a full and satisfying adult life^{24,35-37}.

Access to healthcare is one of the fundamental aspects to promote the well-being and quality of life of elderly people, especially those in situations of poverty and extreme poverty, which implies the active participation

of elderly people in society, the maintenance of relationships healthy interpersonal relationships, community integration and a sense of belonging³⁸⁻⁴¹. For older people, fostering social development, community support, promoting inclusive and accessible community environments that facilitate participation and social interaction is essential to maintaining good mental health^{38,42 24,43}. In this research, the importance of receiving quality care in hospitals in Puno, Peru, for the elderly people who participated in the study was highlighted. A hospital environment that promotes respect and dignity contributed significantly to the emotional well-being of patients, improving their quality of life. Ensuring that hospitals in Peru provide this level of care is fundamental to ensuring that elderly people can live their senior years with health and dignity in accordance with the Peruvian state policies operationalized through the SIS social program, which are: free access to health services; full coverage; personalized attention; promotion of integral well-being; facilitating access and interinstitutional coordination.

CONCLUSION

The Comprehensive Health System, implemented by the Peruvian government, contributed significantly to quality of life ($\beta=0.341$; $p<0.05$). However, social programs such as FISE ($\beta = 0.024$; $p<0.05$) and PP65 ($\beta = 0.018$; $p<0.05$) contributed very little to the quality of life of elderly people in situations of poverty. The quality of life and health of people over 65 are closely related and refer to the general well-being of an elderly person, including physical, emotional, social and spiritual aspects. In turn, health is a fundamental

component of quality of life and refers to a person's physical and mental state, therefore, maintaining a good quality of life and good health in adulthood is crucial to enjoying a fulfilling life. Therefore, greater integration and coordination between the SIS and the FISE and PP65 programs would be necessary to ensure that beneficiaries receive not only economic support, but also access to health services and personalized care. This may include creating care centers where seniors can receive comprehensive services.

CRedit author statement

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