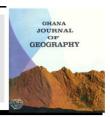
Ghana Journal of Geography

j o u r n a l h o m e pa g e : https://www.ajol.info/index.php/gig/ https://journals.ug.edu.gh/index.php/gig/



The Well-being of Older Persons in Tanzania: Does receiving family social support count?

Innocent Fabiano Mpeta^{1*}, Herbert Hambati Qambalo¹ & Shadrack Elia Kibona²

¹Population Studies and Research Centre (PSRC)-University of Dar es Salaam, Tanzania.

article info

Article history: Received 28th January 2025 Accepted 16th October 2025 Published 31st October 2025

Keywords:
Older persons,
Socio-economic and demographic,
Family social support,
Well-being,
Tanzania,

abstract

This study was conducted in Buhigwe District to understand the determinants of the well-being of older persons, with a focus on the family support, and guided by the intergenerational solidarity theory. The quantitative cross-sectional study used data from 403 respondents aged 60 and above. It used a survey method with a researcher-administered questionnaire to collect the data. The binary logistic regression was used to determine the predictors of well-being. The results revealed an association between lower odds of having high well-being and age groups 70-79 and 80+ years, with aORs= 0.216 (95% CI: 0.099-0.472) and 0.319 (95% CI: 0.144-0.709), respectively, and P-values of < 0.001. Poor health was also associated with lower odds of having high well-being, aOR=0.139(95% CI: 0.073-0.263), P-value<0.001. Inability to participate in family activities was associated with lower odds of having high well-being (aOR=0.26(95% CI 0.094-0.721), P-value<0.05), likewise weak commitment to familial obligations (aOR=0.223 (95% CI: 0.107-0.531), P-value<0.001. Furthermore, lower odds of having high well-being were associated with poor wealth (aOR=0.384(95% CI: 0.186-0.793), P-value<0.05), large households (aOR=0.43(95% CI: 0.234-0.788), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 and moderate frequency of contact aOR=0.475 (95% CI: 0.232-0.973), P-value<0.05 (95% CI: 0.232-0. value<0.05. The findings give insights into the family support and socio-economic factors on older persons' well-being. However, the association between each type of support and well-being was not statistically significant. Targeted policy programmes by the government are needed to improve health services and reduce poverty. The study has contributed to knowledge on receiving family support and well-being. A mixed research approach is recommended to understand the relationship between social support and well-being in comparable environments.

© 2025 GJG Ltd. All rights reserved.

Introduction

This study assesses the determinants of well-being for older persons in Tanzania, with a focus on the familial support they received and its influence on their well-being using the Well-being of Older Persons (WOOP) measure. As the population of older persons continues to grow in developed and developing countries, the well-being of older persons has become an issue of concern. Well-being is associated with healthy ageing, emphasizing functional abilities in old age, and is also related to the quality of life (Tungu et al., 2024). Although multifaceted and with no common agreed-upon measure, well-being reflects people's lives and attached values. It sets a stage for people to evaluate their lives based on the interaction between what they do, feel and their circumstances embedded in socio-cultural factors (Kaufman et al., 2022). Well-being is particularly of critical concern in developing countries where ageing takes place against the backdrop of poverty and poor health. According to Lewis et al. (2023) and Cooper et al. (2022), older persons in developing countries are subjected to frailty and social vulnerability, which are linked to mortality among them. In light of this, Boah et al. (2025) further elaborate on the dire situation, especially among those aged 70 and above, who suffer from multimorbidity and disability, which are associated with a low quality of life.

* Corresponding author.

E-mail address: innocentmpeta@yahoo.com (I.F. Mpeta).

http://dx.doi.org/10.4314/gjg.v17i2.5 © 2025 GJG. All rights reserved. Moreover, a few older persons in those countries benefit from formal social protection, leaving the majority of older persons to rely on their families for support and well-being. According to Curreri et al. (2022), because of unreliable formal protection systems across Eastern, Western, Southern Africa and even in Latin America, older persons believe that the best support system for their well-being depends on their families.

The well-being of older persons has been associated with several factors, such as personal and household characteristics. In ageing circumstances, particularly in poor societies, intergenerational social support remains one of the important factors. According to Asante and Karikari (2022), social support entails an activity done for an individual in need by others. It suggests that unless individuals have needs beyond their abilities, they may not need social support. It is of particular relevance for older persons, given the circumstances accompanying old age, such as declining physical and mental strength, diseases and disability; they depend on others for survival (Mefteh, 2022). Nevertheless, Churchill et al. (2020) argue that social support may have no effect, or may have negative effects on the well-being of older persons. They elaborate that the effect of support on the well-being may depend on their adequacy, consistency and appropriateness. It may also depend on whether the support considered is the actual received or perceived. For instance, in their study, Akinrolie et al. (2020) argue that social support below older persons' expectations was associated with low satisfaction with

In addition to that, the type of support received may also affect the well-being of older persons in diverse ways. For instance, Akinrolie et al. (2020) found that older persons in Nigeria needed emotional support from their adult

²Department of Statistics, University of Dar es Salaam, Tanzania

children, and were emotionally stressed because they missed it. Similarly, Attafuah et al. (2023) revealed that older persons in Ghana needed assistance with healthcare needs, financial and activities of daily living, but the support was unavailable or inadequate. Nevertheless, with limited options for the formal sources of social support, like in most developing countries, in Tanzania, older persons rely on their families for support, regardless of whether adequate or not. According to Ebimgbo et al. (2021), informal social support is essentially manifested under intergenerational relationships, with the family playing a primary role. In their work, they further explained that support from other sources was negligible. Generally, the literature reflects the relevance of the intergenerational solidarity theory, which encompasses the socio-economic and cultural factors in support exchange and the well-being of older persons.

Theoretical underpinning and conceptual framework

The study was guided by the Intergenerational Solidarity Theory of (Bengtson & Roberts, 1991). The theory covers six areas, which are fundamental to intergenerational relationships between children and older parents. The areas are affectual, associational, consensual, functional, normative and structural solidarity. Whereas affectual solidarity entails the positive sentiments held by family members and related reciprocity, associational solidarity considers patterns of interactions measured by the frequency of contact. Consensual solidarity covers agreement on values, norms, and beliefs, while normative solidarity focuses on commitment to carry out filial obligations by adult children. Functional and structural solidarity focus on social support exchange and geographic proximity, favoring the exchange of support. Duflos and Giraudeau (2022) argue that these intergenerational dimensions build the foundation for family support and the well-being of its members. The theory was originally focused on intergenerational relationships in Western countries but was later used to study family care-giving in different parts of the world. For instance, it has been applied in care-giving studies in Tanzania (Rutagumirwa et al., 2020) and in Uganda (Schatz et al., 2018), which have similar characteristics with the current study area. Mbuthia et al. (2022) in Kenya also indicated the active integrational support between adult children and their older parents, especially during hard times. The theory is relevant to the current study to understand well-being, and given family support for older persons. Its strength lies in considering crucial aspects of intergenerational relationships and cultural influences in social support. However, the theory

still has limited empirical evidence, especially in developing countries. Nonetheless, it has provided a framework for studying intergenerational relationships and served as the basis for the conceptual framework in this study.

Conceptual framework

The framework (Figure 1) shows the variables studied and the underlying relationships. Demographic variables of older persons and their households (Box 1) influence the types of care and support for older people. However, they can also affect the well-being status directly. Similarly, socio-economic variables (Box 2) affect family support provision and can directly influence the well-being of older persons. Care and support provided to older person can affect their well-being (Box 4), as depicted by the arrows in Figure 2. In addition, the figure shows the arrows pointing in both directions, implying that the well-being status of older persons may affect the rest of the family members. The available literature has revealed that older persons with a high well-being status are even able to provide support to their family members, including emotional and financial support in some instances.

Rationale for the study

Tanzania is one of the countries with minimal formal social protection for older persons. The country has only 6.0 % of older persons benefiting from the formal old-age pension scheme (ILO, 2024). This lack of a reliable formal social protection scheme makes the older persons rely on themselves and their families for social support and their well-being. The reliance continues regardless of the inadequacy or inconsistency of the support, due to the absence of alternative sources. Like other rural areas of Tanzania, older persons in the district under study consider family as the main source of social support and their well-being. Recently, the interest in studying old age in Tanzania has been increased, with scholars focusing on trends in social support (Mfungo & George, 2022), vulnerability and frailty, living arrangements, and challenges (see Cooper et al., 2022; Lewis et al., 2023; Mdendemi et al., 2023). Few studies have focused on the well-being of older persons and associated factors. For instance, studies have focused on the implications of modernization on the well-being of older persons

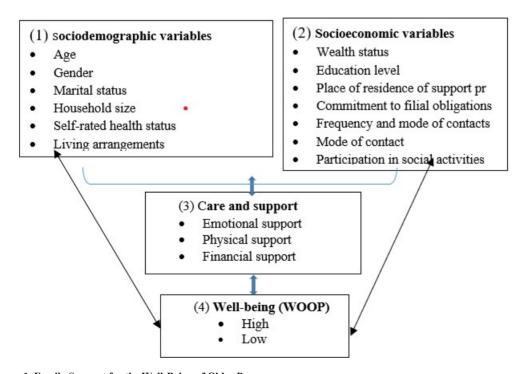


Figure 1. Family Support for the Well-Being of Older Persons

Source: (adapted from Gallardo-Peralta et al., 2022)

(Mfungoa & George, 2022), health-related quality of life and psychological distress (Ivanova et al., 2022; Tungu et al., 2024). The mentioned studies implicitly study the well-being, but they do not focus on its association with family support. In addition, they have employed tools like Health-Related Quality of Life (HRQoL), which mostly focus on health measures. This study delves into the familial support received by older persons and its influence on their well-being, using the WOOP measure. The analysis aims to contribute valuable insights to addressing the concern of support for older persons in the rural Tanzania context and strengthening family-based support systems to improve their well-being.

Methods

Research design

This study employed a cross-sectional design to collect data once from representatives of older persons in Buhigwe District, followed by data processing and analysis. This design enables the researchers to study the degree to which variations in one variable are associated with variations in the other (Crano et al., 2015). It was also appropriate for the limited-time of the study. The study used quantitative research techniques.

Justification of the study area

The study population was older persons aged 60 and above living in Buhigwe District in Buhigwe, Munanila, and Kilelema wards. The Buhigwe District is located in the Kigoma Region in the western part of Tanzania. The region has a Human Development Index of 0.515, below the Tanzania Mainland average of 0.639 (UNDP, 2023), ranking 23rd among 26 regions. The same report shows the region ranking 25th in terms of low-income level. In such areas with low levels of development, the disadvantaged population groups such as older persons comprise the most affected group (Banda et al., 2024). It was therefore, a relevant place to study the well-being status of older persons in connection with family support and other socio-economic characteristics.

Sampling procedure and sample size

For the sake of selecting a statistically representative sample, the study used the random sampling techniques. The study adopted the multistage sampling approach. The first stage was the selection of three wards from the twenty wards in the district using a lottery method of simple random sampling technique after assigning a unique number to each ward. The same technique was used in the second stage to select six villages from the three wards, comprising two villages from each ward. The villages in each ward ranged from two to four. The selection of two villages from each ward ensured the maximum coverage of the wards. Financial resource limitation was the reason behind the limited geographical scope. The final stage was the selection of the representative older persons aged 60 and above from the lists of households provided by local authorities in all six villages. A simple random technique was also used employing the Random Number Generator method in Microsoft Excel (RAND Function) after assigning a unique number to each household. Since the population of older persons in the district was not known, the ideal formula for an infinite population was used to obtain the 384 respondents. With the assumption that some respondents would not be found, as it sometimes occurs in survey studies (Wittes, 2002), the sample size was adjusted by adding 5% to the 384, making the total number of cases 403. It turned out that all households were reached and data were collected from all the 403 older persons. Since increasing the sample size increases the representativeness of the sample, it was left to be 403. Therefore, analysis was conducted for 403 cases. The formula for the sample size for the unknown population used was as proposed by Israel (1992) and given by;

$$n = \frac{Z^2 pq}{e^2} \tag{1}$$

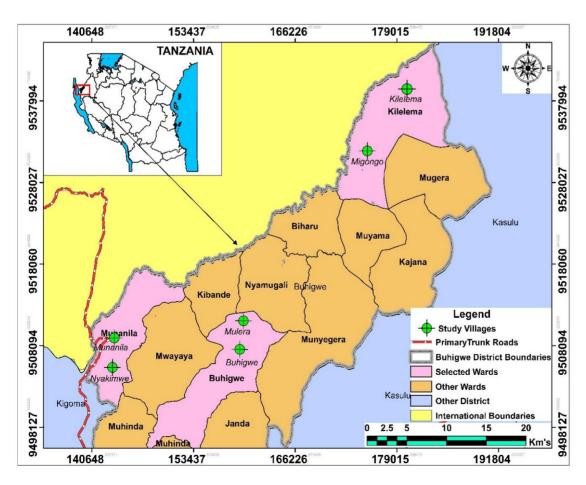


Figure 2: Map showing the study area in Buhigwe District

Whereby;

- n= Sample size
- z= Value of standard variate at a given confidence level, and to be worked out from tables showing area under the normal curve (Z=1.96)
- p = Sample proportion of older persons assumed to report high well-being = (0.5)
- q = Sample proportion of older persons assumed to report low well-being = (1-p)
- e = Given precision rate or acceptable error set at 5%

Study Variables

Independent Variables

Living arrangement. Living arrangements were measured by asking participants with whom they currently live. The responses were recorded as 1 = Living with spouse, children and grandchildren, 2 = Living without spouses but with children and grandchildren, and 3 = Living without children or grandchildren.

Household size. Household size was coded as 1 for <5, 2 for >=5

Household wealth status. Wealth status was used as a proxy of socioeconomic status (SES). Wealth status was categorised as 1 = Poor, 2 = Middle, and 3 = Rich. The wealth index was computed using the Principal Component Analysis (PCA) approach using IBM SPSS Statistics software version 25.

Social contacts. Social contacts were measured by the mode or means and the frequency of contact between older persons and support providers. For the means of contact, the responses were coded as 1= Physical contact, 2= Using a mobile phone, and 3= Using both physical and mobile phone. For the frequency of contacts, the responses were coded as 1= Low frequency, 2= Moderate frequency and 3= High frequency.

Commitment to familial obligations score (normative solidarity). The variable was coded as 1= Weak and 2= Strong. The categories were derived from summing up the scores of respondents on items measuring normative solidarity. Data were gathered on the six items intended to measure the commitment to the obligations of family members to care for and support older persons (Xu et al., 2021). The questions asked, covering items, included the following: Do you receive enough care from your children? How much are you pleased with the greeting trend from your children? How much are you respected by your children? How do your children contribute to your happiness? How much are you pleased with the obedience of your children? And how helpful is the financial support received from your children? The reliability statistic $\alpha=0.809$ indicated the internal consistency of the normative solidarity construct.

Participation in family activities. Participation in family activities was coded as 1= Never, 2= Once or twice a month, 3= Once or twice a week, 4=Daily.

Place of residence of the caregiver or support provider. This variable was coded as 1= Same home or village, 2= Migrated. The variable was intended to capture the geographical proximity.

Receiving support from families. The types of support received were physical (like cooking, washing, running errands, fetching water and firewood), financial (cash, paying bills, food and healthcare expenditures, and other costs), and emotional support (companionship, a listening ear, assisting with remembering and expression of care during stressful periods). The response for all types of support was coded as 1 = Yes if the support was received and 0 = No if not (in the recent past).

Self-reported health status of older persons. This variable was coded as 1= Poor, 2 = Good.

Covariates. Age was a categorical variable coded as 1= 60-69, 2= 70-79 and 3 = 80+. Gender response categories were 0= Male and 1= Female. Marital status response categories, 0= married, and 1= not married, and education level was coded as 1= No education, 2= Primary education.

Dependent Variable

The dependent variable was the well-being status of older persons. The study employed the nine-item Well-being of Older People measure (WOOP) developed and validated by Hackert and colleagues (Hackert et al., 2021). The approach considers items that older people find crucial in evaluating their well-being. WOOP provides an opportunity to measure specific domains of well-being. The items measured include physical and mental health, social contacts, receiving support, acceptance and resilience, feeling useful, independence, making ends meet, and living situations. All the items were on a 5-point Likert Scale. Physical and mental health were rated from 1 = severe problems to 5 = no problems, social contacts rated from 1 = very dissatisfied to 5= very satisfied, and satisfaction with support ranged from 1 = very dissatisfied with the support when needed to 5= very satisfied. Acceptance and resilience were rated from 1= not at all able to deal with my circumstances and changes to 5 = more than able. Feeling useful ranged from 1= do not feel at all useful to 5= feel very useful, while independence ranged from 1 = feel very dependent to 5 = feel very independent. Making ends meet ranged from 1 = not at all able to make ends meet to 5 = more than able. Lastly, the living situations ranged from 1 = very dissatisfied to 5 = very satisfied. The summation of scores from items produces well-being scores ranging from 9 when a respondent scores 1 in each item to 45 when scores 5 in each item. The higher scores indicate higher well-being. In this study, the researchers classified the range of scores 9 to 27 (rate scale 1-3) as "low" well-being and 28 to 45 (rate scale 4-5) as "high" well-being based on distributional considerations because the measure has no available utility score. Therefore, the dependent variable categorical responses

Table 1: Set of Independent Variable Descriptions

Variable name	Variable type	Expectations on the outcome variable
Living arrangements (La)	Nominal	Positive or negative
Household size (Hs)	Nominal	Positive or negative
Wealth status (Ws)	Nominal	Positive
Mode of contact (Mc)	Nominal	Positive
Frequency of contact (Fc)	Ordinal	Positive
Commitment (Co)	Nominal	Positive
Participation (Pa)	Ordinal	Positive or negative
Place of residence (Pr)	Nominal	Positive or Negative
Self-rated health status (He)	Nominal	Positive or negative
Receive financial support (Rf)	Nominal	Positive
Receive emotional support (Re)	Nominal	Positive
Receive physical support (Rp)	Nominal	Positive
Age (Ag)	Nominal	Negative
Gender (Ge)	Nominal	Positive or Negative
Marital status (Ma)	Nominal	Positive or Negative
Education level (Edu)	Nominal	Positive

were 0 = Low well-being and 1 = High well-being. Considering cultural and social settings, the researchers translated and customised questions to be appropriate and to reflect the experiences and values of the population in the study area. Reliability statistic (Cronbach's alpha (α = 0.806) indicated the internal consistency of the items used to measure the well-being construct in the study area.

Data analysis

The data were analyzed using IBM SPSS Statistics version 25 software. To begin with, the researchers conducted a descriptive analysis to obtain statistics on the demographic and socio-economic characteristics and well-being of the study population. This analysis helped to provide initial insights through generated summary statistics, including frequency, percentages, mean, and standard deviation. In inferential analysis, univariate binary logistic regression was performed to explore how each explanatory variable relates to the outcome variable and crude Odds Ratios (cORs) were reported. Then the researchers performed a multivariable logistic regression to determine the predictors of well-being among older persons. Explanatory variables with a pvalue less than 0.2 during univariate analysis were included in the adjusted model, and the results were reported as adjusted Odds Ratios (aORs). The inclusion of explanatory variables with p<0.2 instead of only those with p<0.05 was to prevent the omission of important predictors whose association with the outcome variable become vivid when other predictors are included (Stoltzfus, 2011). A statistically significant association was indicated by a pvalue less than 0.05 and less than 0.01. The results presented crude and adjusted odds ratios and 95% confidence intervals.

The modelling in this case involved the binary logistic regression model to determine factors influencing the well-being of older persons, including receiving family support. The dependent variable was Well-Being (y), which has two possible outcome values: 1 representing high well-being, and 0 representing low well-being, with the conditional probability

$$\pi = \frac{e^{\alpha + \sum_{j=1}^{k} \beta_{i} x_{ij} + \mu}}{1 + e^{\alpha + \sum_{j=1}^{k} \beta_{i} x_{ij} + \mu}}$$

$$1 - \pi = \frac{1}{1 + e^{\alpha + \sum_{j=1}^{k} \beta_{i} x_{ij} + \mu}}$$
And

The binary logit regression for this case can be presented as;

Whereby

$$y(x) = \ln\left(\frac{\pi}{1-\pi}\right) = \alpha + \sum_{j=1}^{k} \beta_i x_{ij} + \mu$$

$$y(x) = \begin{cases} 1, & \text{High well - being} \\ 0, & \text{Low well - being} \end{cases}$$

 x_i = Vector of independent variables consisting of qualitative and quantitative data

 β_i = Coefficients of the explanatory variables

y(x) = Well-being status variable (Dependent variable)

 π = The probability of an older person having a high well-being status

 $1-\pi_{=}$ The probability of an older person having a low well-being status

 μ = Residual term

After successful statistical tests, the predictor variables were included in the model, and the fitted multivariable binary logistic regression equation was as follows:

$$\begin{aligned} y_{wb}(x) &= \ln\left(\frac{\pi}{1-\pi}\right) \\ &= \beta_0 + \beta_1 A_g + \beta_2 G_e + \beta_3 M_a + \beta_4 E_d \\ &+ \beta_5 L_a + \beta_6 P_r + \beta_7 H_e + \beta_8 F_c + \beta_9 M_c \\ &+ \beta_{10} C_o + \beta_{11} H_s + \beta_{12} P_a + \beta_{13} R_f \\ &+ \beta_{14} R_e + \beta_{15} R_p + \beta_{16} W_S \\ &+ \mu \dots \dots \dots \dots (4) \end{aligned}$$

Results and discussion

In this section, the findings of the study are presented and explained, guided by the research questions: How do family social support and socio-economic characteristics influence the well-being of older persons in Tanzania?

Description of the socio-economic characteristics of respondents

The results in Table 2 show that of all older persons, 35% had an age range from 60 to 69, 30.5% had an age range of 70 to 79, and 34.1% were aged 80 and over. Categorising the age gives room to study and make comparisons among older persons on various issues of concern. The results in Table 2 show that the gender distribution of respondents constituted 52.3% males, while females constituted 47.7%.

Table 2: Distribution of sociodemographic characteristics of older persons (n = 403)

Variable	Categories	Count (%)
Age	60-69	139(34.5)
	70-79	126(31.5)
	80+	138(34.2)
Gender	Male	208(51.6)
	Female	195(48.4)
Marital status	Married	247(61.3)
	Not married	156(38.7)
Level of education	No education	231(57.3)
	Primary	172(42.7)
Health status reported	Poor	184(45.7)
	Good	219(54.3)
Living arrangements	With spouses, children and grandchildren	181(44.9)
	Without spouses, children and grandchildren	142(35.22)
	Without children or grandchildren	80(19.9)

This implies that in this study, there was a good representation of both males and females, and this would result in fairly distributed responses regarding variables of interest. Results also revealed that the majority (61.3%) of respondents were married. Regarding education level, the results in Table 2 show that 57.3% of older persons had never attended any formal education, while 42.7% had primary education. The results also show that 52.4% of households had a household size of less than five. The results reflect the household size of Tanzania as presented in the Tanzania Mainland basic demographic and socio-economic profile (URT, 2024).

Moreover, the results show that slightly above half of older persons (54.3%) reported good health, while the rest reported poor health. Meanwhile, 63.3% of older persons participated daily in family activities and contributed to family affairs. About 45% of older persons live with spouses, children and grandchildren, while a few (19.1%) live alone or with spouses only. The results further show that there was a roughly equal distribution between the poor and rich, while 19.9% had a middle wealth index status. Regarding support, the study found that 85.6% of older persons received support from their families. Support received was financial (70.7%), physical (31.8%) and emotional (69.2%). Above half of the support providers were co-residing with the older persons (57.4%), while the rest lived apart from them. Results show that nearly half (46.8%) of older persons used phones and physical meetings to contact support providers, and about 50% had daily contact. Table 2 also shows that there was still a strong commitment of family members to filial obligations (77.2%) despite modernization and traditional family dynamics.

Predictors of the well-being of older persons in Tanzania

The study found that slightly above half, that is (56.8%) of all respondents had high well-being. The univariate logistic regression analysis with crude Odds Ratios (cORs) in Table 3 showed a statistically significant association between low well-being and being aged 70 years and above, being female, and unmarried. Low well-being was also associated with living with children and grandchildren, weak commitment to filial obligations, never participating in family activities, poor wealth household and receiving physical support. High well-being was associated with a reported moderate and good health status and receiving emotional and financial support. The multivariable binary logistic regression with adjusted Odds Ratios (aORs) reveals that the statistically significant predictors of well-being were age, self-reported health status, commitment to filial obligations, participation in family activities, household wealth status, frequency of contacts and household size.

Regarding age, the results in Table 3 show that older persons in the age group 70 to 79 had a reduced chance by 78.4% of having high well-being relative to those in the age category of 60 to 69 (aOR = 0.216, 95%CI: (0.099-0.472). Similarly, those aged 80 and above had a reduced chance of 68.1% of having high well-being those aged 60 to 69 (aOR = 0.319, 95%CI: (0.073-0.263). The results imply that scores in well-being domains decline as older persons get into advanced ages.

Table 2(Continued): Distribution of sociodemographic characteristics of older persons

Variable	Categories	Count (%)
Household size	< 5	211(52.4%)
	>= 5	192(47.6)
Participation in family activities	Never	60(14.9)
	Once or twice a month	44(10.9)
	Once or twice a Week	44(10.9)
	Daily	255(63.3)
Wealth index status	Poor	161(40)
	Middle	80(19.9)
	Rich	162(40.2)
Receive emotional support	No	124(30.8)
	Yes	279(69.2)
Receive physical support	No	275(68.2)
	Yes	128(31.8)
Receive financial support	No	118(29.3)
	Yes	285(70.7)
Commitment status	Weak	92(22.8)
	Strong	311(77.2)
Support providers information		
Residency of support providers(N=357)	Same home or village	205(57.4)
	Migrated	152(42.6)
Mode of contact(N=357)	Physically	141(39.5)
	Through a mobile phone	49(13.7)
	Both physical and mobile phones	167(46.8)
Frequency of contacts(N=357)	Once a week or more	55(15.4)
	twice to six times a week	124(34.7)
	Daily	178(49.9)

Source: Field data

The results agree with a study by Boah et al. (2025) in Rwanda, who found that being aged 70 years and above was associated with low quality of life. Their study focused on health and well-being, and age was associated with poor health in old age. Arguments in other studies, such as Maniragaba et al. (2019) in Uganda, associated old age with declining financial powers, particularly in control over resources, in some older persons, affecting their financial well-being. Furthermore, in their study on the shift of intergenerational relations, Gouttefarde et al. (2024) found that old age was associated with declining social authority and influence, which makes older persons feel less useful, affecting their mental health and emotions. Despite distinct measures of well-being in the literature, they agree with the present study that as individuals continue to age, the chances of deteriorating well-being increases. Therefore, the findings might suggest that the well-being of older persons could be getting worse as age increases unless intergenerational relations buffer against consequences.

Concerning self-reported health status, the findings revealed that older persons who reported poor health status had a reduced chance by 86.1% of having high well-being relative to older persons who reported good health status (aOR = 0.139, 95% CI: (0.073-0.263). Poor health status is associated with low well-being because it inhibits active ageing. In their study, on social vulnerability and frailty in Tanzania, Cooper et al. (2022) found poor health to be significantly associated with depression, while social vulnerability was associated with mortality among older persons. The lack of access to health services fills older persons with worry and fear of death. Being hopeless, Attafuah et al. (2023) reported that unmet health needs caused psychological distress among older persons, as it reduces their participation in daily activities. As such, high morbidity and frailty lower the scores in domains of

well-being, given the inability to access quality health services. This was underscored by Tungu et al. (2024) in Tanzania in their study on healthrelated quality of life based on possession of health insurance. The findings may suggest that healthy ageing is paramount in maintaining high well-being of older persons as they continue to participate in social and family activities. The results in Table 3 revealed that older persons who never participate in family activities had a reduced chance of 74% of having high well-being relative to their counterparts who participate daily in family activities (aOR = 0.26, 95% CI: 0.094-0.721). The results imply a significant association of inactivity with low well-being, controlling for other factors. Participation helps older persons maintain their physical and mental health. For instance, Attafuah et al. (2023) found that limited involvement in activities associated with worries about impending financial insecurity in Ghana. With a similar perception, some older persons in Ethiopia felt they were better off dead instead of living uselessly because of poor health, which limited their engagement in daily activities (Mefteh, 2022). Considering domains of wellbeing as per WOOP, the sense of feeling not being useful and dependent contributes to low well-being. This was also affirmed by Naah et al. (2020) in Cameroon, who found a strong association between participation and older persons' well-being. Nevertheless, too much work for older persons may negatively affect their well-being. Rutagumirwa et al. (2020) found that older women in Coast Tanzania would generally complain of the burden of care for their grandchildren left behind by their parents. Breadwinner-older persons in particular become tired and psychologically stressed. The literature may suggest that reasonable participation of older persons may positively contribute to their well-being.

Table 3: Predictors of high well-being of older persons

Variable	cORs (95% C.I.)	aORs (95% C.I.)
Age (Years)		
60-69 (Ref)	1.000	1.000
70-79	0.333(0.195-0.569) ***	0.216(0.099-0.472) ***
80+	0.161(0.095-0.275) ***	0.319(0.144-0.709) ***
Gender		
Male(ref)	1.000	1.000
Female	0.525(0.352-0.782) **	1.104(0.537-2.269)
Marital status		
Married (Ref)	1.000	1.000
Unmarried	0.288(0.190-0.439) ***	0.72(0.309-1.682)
Education level		
No education (Ref)	1.000	1.00
Primary education	2.583(1.705-3.913) ***	0.974(0.512-1.856)
Living arrangements		
With spouses, children and grandchildren (ref)	1.000	1.000
Without spouses, children and grandchildren	0.383(0.243-0.602) ***	0.474(0.203-1.108)
Without children and grandchildren	0.763(0.443-1.313)	1.009(0.451-2.254)
Residence of support providers		
Co-reside or same village (Ref	1.000	1.000
Migrated	1.489(0.973-2.278)	0.473(0.209-1.069)
Health status		
Good (Ref)	1.000	1.000
Poor	0.129(0.083-0.202) ***	0.139(0.073-0.263) ***

Variable	cORs (95% C.I.)	aORs (95% C.I.)
Commitment status		
Strong (Ref)	1.000	1.000
Weak	0.442(0.275-0.710) ***	0.238(0.107-0.531) ***
Participation in family activities		
Daily (Ref)	1.000	1.000
Never	0.091(0.043-0.194) ***	0.26(0.094-0.721) **
Once or twice a month	0.681(0.356-1.306)	0.911(0.351-2.365)
Once or twice a week	0.822(0.425-1.591)	1.243(0.496-3.114)
Wealth index status		
Rich (Ref)	1.0	1.0
Poor	0.334(0.211-0.527) ***	0.384(0.186-0.793) **
Middle	0.587(0.337-1.023)	0.898(0.404-1.997)
Frequency of contacts		
High frequency (Ref)	1.000	1.000
Low frequency	1.567(0.829-2.962)	1.098(0.404-2.989)
Moderate frequency	0.67(0.423-1.062)	0.475(0.232-0.973) **
Household size		
< 5 (Ref)	1.000	1.000
>=5	0.75(0.505-1.113)	0.43(0.234-0.788) **
Mode of contact		
Physically and mobile phones (ref)	1.000	1.000
Physically	0.689(0.439-1.081)	0.892(0.414-1.926)
Mobile phones only	1.392(0.717-2.703)	1.564(0.591-4.14)
Receive financial support		
Yes(ref)	1.000	1.000
No	1.561(1.002-2.431) **	1.579(0.728-3.426)
Receive emotional support		
Yes(ref)	1.000	1.000
No	1.941(1.245-3.025) **	1.708(0.801-3.639)
Receive physical support		
No(ref)	1.000	1.000
Yes	0.608(0.398-0.927) **	0.591(0.293-1.192)

^{** =} p-value < 0.05; *** = p-value <0.01, Note: The reference category is 1 = High well-being status

Concerning commitment to familial obligations, results revealed that older persons from households with weak commitment to filial obligations had a reduced chance of 76.2% of having high well-being compared to those in households with strong commitment, aOR = 0.238, (95% CI: 0.107-0.531). Commitment to filial obligations encompasses items related to care and the significance of support received. It also embraces traditional values such as respect and obedience of young people to older persons. These commitments not only guarantee material, but also, emotional support to older persons based on the intergenerational relations. The results are in line with the findings by Mfungo et al. (2022) who found that in Tanzania, older persons pointed to a declining commitment to filial obligation as the factor behind the weakening social support system. On the other hand, Ndubajam et al. (2023) found older persons praising some of their adult children's commitment despite economic hardship, while Ofori-Dua (2023) found some older persons complaining of being deserted by their children, a sign of poor commitment to filial obligations. The discussion may suggest that the traditional system of intergenerational support still works; however, its decline may be detrimental to the well-being of older persons. From a theoretical perspective, not meeting the traditional expectation raises doubts about the intergenerational relations

and their role in sustaining intergenerational exchange of support and wellbeing for older persons.

Regarding the wealth index, the results show that older persons from poor households were 61.6% less likely to have high well-being than those in rich households (aOR = 0.384, 95% CI: 0.186-0.793). The results imply that poverty in households may negatively affect the scores in well-being domains, lowering the well-being status. The results are in unison with the findings of the study by Banda et al. (2024) in Zambia, who found a poor well-being association with deprivation of economic resources and poor access to social services. In Tanzania, Tungu et al. (2024) found that higher income was positively associated with higher quality of life. Though wellbeing was not measured using the framework used in the mentioned studies, the results would implicitly associate low well-being with low wealth status. In addition, Muhammad et al. (2021) revealed that older persons who do not have sufficient income to meet their financial needs were usually stressed and had low well-being. The discussion may suggest that household wealth is strongly associated with well-being and could be an important area of social policy focus.

Concerning contact, the results show that older persons who had moderate frequency with their support providers had a reduced chance of 52.5% of having high well-being compared to those with a high frequency of contacts (aOR = 0.475, 95% CI: (0.232-0.973), P-value<0.05. The results imply that older persons need frequent communication with their support providers to feel cared for, loved and supported. The results agree with a study by Kuligina & Dobelniece (2022) on intergenerational factors in family who found the frequency of contact to be correlated with the physical assistance to older parents in Latvia. The role of frequency of contact was affirmed by Akinrolie et al. (2020) in Nigeria, who found that older persons who were not consulted by young people for advice or who missed the listening ear of their children were emotionally stressed. The literature may suggest that frequent contact enhances emotional support and eventually contributes to the well-being of older persons.

Regarding the household size, the results show that older persons from households with five or more members had a reduced chance by 56.8% of having high well-being than those from small households (aOR = 0.43, 95% CI: (0.234-0.788). The result as per Kamiya & Hertog (2020) contrasts with the norm, particularly in sub-Saharan Africa, where large households were associated with intergenerational support due absence of formal support systems. However, the composition of the household may determine the socio-economic position and its influence on well-being. For instance, Sabates-Wheeler et al. (2020) established that households composed of noneconomically active members only may be associated with poor quality of life. In addition, large households increase consumption allocation of household resources. Unless the households have sufficient resources, a large household may register low well-being among its members (Adisa, 2019). On the other hand, large households composed of economically active individuals may be advantageous to older persons, particularly in diet quality (Liu et al., 2021). Thus, household size may be circumstantial concerning its association with the well-being of the older persons and should be interpreted with caution.

Receiving support and well-being. This was the point of focus of the study to find whether receiving family support mattered for the well-being of older persons. Table 3 shows that although receiving support may have effects on well-being, its association was not statistically significant (p-value >0.05) in the adjusted model, despite being significant in the unadjusted model. The results contrast with many related studies, which show a positive association of social support with well-being or quality of life (Asante and Karikari, 2022; Churchill et al., 2020). The reasons for the situation may be twofold: the first being the nature of the support. For instance, Churchill et al. (2020) argue that the support has to be adequate, consistent and appropriate because it should ignite the satisfaction feeling of the recipient; otherwise, it may even negatively affect the well-being status. Thus, merely receiving support may not count in the well-being of older persons. The second reason may be related to measurements. Many studies, including the aforementioned, have used 'perceived' rather than received support. Perceived support captures the perception of receiving support when one needed it, while received support considers the actual support received. In addition to that, other studies have measured the well-being using different tools, mostly capturing subjective well-being rather than the WOOP measure. Therefore, concluding whether family social support counts or not in the well-being should be considered with caution, considering the theoretical and practical aspects.

Moreover, variables of gender, education level, marital status, mode of contact, living arrangements and proximity were not significantly associated with the well-being of the older persons. With respect to the intergenerational solidarity, Saha (2024) argues that the quality of integrational relationships and functional support may be important than demographic factors or structural arrangements. In their study in Zimbabwe, the findings of Maushe et al. (2025) concur with Saha, demonstrating that, unless demographic variables affect the emotional or functional aspects of intergenerational solidarity, they may not directly be able to influence the well-being of older persons. In addition, Ren et al. (2025) elaborate that even if face-to-face contact is in place, it may be less important in influencing the well-being of older persons if it does not lead to meaningful interaction. However, the effects of such variables may vary depending on culture and the development status of sub-populations. Therefore, being non-significant in this study may not be the case in different cultures. Even though there may be insufficient

statistical evidence to support their significant associations, they may still have effects on the well-being of older persons.

Limitations of the study

The study has limitations that need to be considered in the interpretation of the findings. First, it employed a cross-sectional design, which makes it difficult to establish a causal relationship between predictors and the outcome variable. Second, the study used only quantitative analytical techniques, missing qualitative techniques important in the self-evaluation of well-being.

Conclusion

A slightly larger proportion (56.7%) of the older persons has high well-being. While this may signal good living conditions, the remaining proportion (43.3%) with low well-being should not be overlooked, as it is derived from low scores in life domains attributing to the well-being, such as poor health, income poverty, dependence and others, which are obstacles to attain better well-being as per the Tanzania Human Development Report 2022. The study has revealed that well-being deteriorates with increasing age and poor health. Reduced chance of high well-being was also associated with weak commitment to familial obligations. However, filial commitment remains strong in a large proportion of households. The older persons who never participate in family activities are less likely to have high well-being. Likewise, large household size was associated with low well-being. While receiving support might influence the well-being of older persons, the association is not statistically significant and probable reasons have been discussed for this scenario. Based on the conclusion, the government has to improve the existing healthcare cost exemption policy to improve access to and quality of health services.

To improve the socio-economic situation through universal pensions and expand inclusion of older persons in a Productive Social Safety Net (PSSN), of which older persons form only 16.5% of its beneficiaries, as per the Tanzania National Economic Survey 2022. The local authorities and Non-Governmental Organisations should work together to strengthen intergenerational solidarity to sustain the support and well-being of older persons. While the intergenerational support theoretical framework still holds, the threat posed by modernization and family dynamics that weaken the traditional family, concerns for the support and well-being of older persons should be extended beyond family to include other social networks, such as community and other institutions. The study has contributed to expanding knowledge on family social support and well-being. The study has limitations in that it does not provide causal relationships between predictors and the outcome variables. It has also employed quantitative techniques, which limits the qualitative knowledge on support and well-being. This calls for careful interpretation of results, especially in relation to other population groups. The study recommends further research using mixed research methods to fill this

Funding

The data collection exercise was funded by the Institute of Rural Development Planning-Tanzania

Competing Interests

The authors declare that they have no competing interests

Acknowledgement

The authors acknowledge the Institute of Rural Development Planning's contribution by sponsoring the PhD studies for the main author and funding the data collection exercise that led to the preparation of this article.

References

- Adisa, O. (2019). Why Are some Older Persons Economically Vulnerable and Others Not? The Role of Socio-Demographic Factors and Economic Resources in the Nigerian Context. Ageing International, 44(2), 202– 222. https://doi.org/10.1007/s12126-019-09348-8
- Akinrolie, O., Okoh, A. C., & Kalu, M. E. (2020). Intergenerational Support between Older Adults and Adult Children in Nigeria: The Role of Reciprocity. *Journal of Gerontological Social Work*, 63(5), 478–498. https://doi.org/10.1080/01634372.2020.1768459
- Asante, S., & Karikari, G. (2022). Social Relationships and the Health of Older Adults: An Examination of Social Connectedness and Perceived Social Support. *Journal of Ageing* and Longevity, 2(1), 49–62. https://doi.org/10.3390/jal2010005
- Attafuah, P. Y. A., Everink, I. H. J., Lohrmann, C., Abuosi, A., & Schols, J. M. G. A. (2023). Health and social needs of older adults in slum communities in Ghana: a phenomenological approach used in 2021. *Archives of Public Health*, 81:74, 1–15. https://doi.org/https://doi.org/10.1186/s13690-023-01056-9
- Banda, A., Hoffman, J., & Roos, V. (2024). *Individual and Community-Contextual Level Factors Associated With Well-being Among Older Adults in Rural Zambia*. 69(February), 1–13. https://doi.org/10.3389/ijph.2024.1606571
- Bengtson, V. L., & Roberts, R. E. L. (1991). Intergenerational Solidarity in Aging Families: An Example of Formal Theory Construction. *Journal of Marriage and the Family*, 53(4), 856. https://doi.org/10.2307/352993
- Boah, M., Isano, S., Greig, C., Davies, J., & Hirschhorn, L. R. (2025). Health and well-being of older adults in rural and urban Rwanda: epidemiological findings from a population-based cross-sectional study. 15. https://doi.org/10.7189/jogh.15.04108
- Churchill, S. A., Appau, S., & Farrell, L. (2020). Measuring, understanding and improving well-being among older people. In *Measuring*, *Understanding and Improving Well-being Among Older People*. https://doi.org/10.1007/978-981-15-2353-3
- Cooper, F., Lewis, E. G., Urasa, S., Whitton, L., Collin, H., Coles, S., Wood, G. K., Ali, A. M., Mdegella, D., Mkodo, J., Zerd, F., Dotchin, C., Gray, W. K., & Walker, R. W. (2022). Social Vulnerability, Frailty, and Their Association With Mortality in Older Adults Living in Rural Tanzania. 77(10), 2050–2058.
- Crano, W. D., Brewer, M. B., & Is, A. L. (2015). Principles and Methods of Social Research (Third). Taylor & Francis.
- Curreri, N. A., McCabe, L., Robertson, J., Aboderin, I., Pot, A. M., & Keating, N. (2022). Family beliefs about care for older people in Central, East, Southern and West Africa and Latin America. *International Journal of Care and Caring*, 7(2), 343–363. https://doi.org/10.1332/239788221X16686052128058
- Duflos, M., & Giraudeau, C. (2022). Using the intergenerational solidarity framework to understand the grandparent–grandchild relationship: a scoping review. European Journal of Ageing, 19(2), 233–262. https://doi.org/10.1007/s10433-021-00626-6
- Ebimgbo, S. O., Atama, C. S., Igboeli, E. E., Obi-keguna, C. N., & Odo, C. O. (2021). Community versus family support in caregiving of older adults: implications for social work practitioners in South-East Nigeria. Community, Work and Family, 25(2), 152–173. https://doi.org/10.1080/13668803.2021.1926222
- Gallardo-Peralta, L. P., Sanchez-Moreno, E., & Herrera, S. (2022). Aging and Family Relationships among Aymara, Mapuche and Non-Indigenous People: Exploring How Social Support, Family Functioning, and Self-Perceived Health Are Related to Quality of Life. *International Journal of Environmental Research and Public Health Article*, 19(9247). https://doi.org/https://doi.org/10.3390/ijerph19159247
- Gouttefarde, P., Gay, E., Guyot, J., Kamdem, O., Socpa, A., Tchundem, G.,
 Dupré, C., Nkenfou, C., Bongue, B., Barth, N., & Adam, S. (2024).
 The shifts in intergenerational relations in Cameroon and their potential impact on the health of older adults. *BMJ Global Health*, 9(5), 1–11. https://doi.org/10.1136/bmjgh-2023-014678
- Hackert, M. Q. N., van Exel, J., & Brouwer, W. B. F. (2021). Content validation of the Well-being of Older People measure (WOOP). *Health and Quality of Life Outcomes*, 19(1), 1–24. https://doi.org/10.1186/s12955-021-01834-5
- ILO. (2024). World Social Protection Report 2024-2026: Universal social protection for climate action and a just transition. https://doi.org/DOI: https://doi.org/10.54394/ZMDK5543
- Israel, G. D. (1992). Determining Sample Size. Fact Sheet PEOD-6. Institute of Food and Agricultural Sciences, University of Florida, November 1–5.

- Ivanova, O., Sineke, T., Wenzel, R., Siyame, E., Lalashowi, J., Sabi, I., & Ntinginya, N. E. (2022). Health-related quality of life and psychological distress among adults in Tanzania: a cross-sectional study. Archives of Public Health, 1–11. https://doi.org/10.1186/s13690-022-00899-y
- Kamiya, Y., & Hertog, S. (2020). Measuring household and living arrangements of older persons around the world: The United Nations Database on the Households and Living Arrangements of Older Persons 2019. (3). www.un.org/development/desa/pd/.
- Kaufman, M. B., Guest, A. M., Mmbaga, B. T., Mbelwa, P. A., Hyatt, J. E., Mushi, D., Tibendelana, J., Saing'eu, P. Y. O., Msoka-Bright, E. F., Swalele, A., & Kessy, J. (2022). What the World Happiness Report doesn't see: The sociocultural contours of well-being in northern Tanzania. *International Journal of Well-being*, 12(4), 27–50. https://doi.org/10.5502/ijw.v12i4.2061
- Kuligina, N., & Dobelniece, S. (2022). Intergenerational solidarity in family influencing factors. SHS Web of Conferences, 131, 01002. https://doi.org/10.1051/shsconf/202213101002
- Lewis, E. G., Rogathi, J., Kissima, J., Breckons, M., Lee, R., & Urasa, S. (2023). A cross-cultural investigation of the conceptualisation of frailty in northern Tanzania. *Ageing and Society*, 43(1), 127–160. https://doi.org/10.1017/S0144686X21000520
- Liu, C., Yi, F., Xu, Z., & Tian, X. (2021). Do living arrangements matter?— Evidence from eating behaviours of the elderly in rural China. *Journal of the Economics of Ageing*, 19(January), 100307. https://doi.org/10.1016/j.jeoa.2021.100307
- Maniragaba, F., Nzabona, A., Asiimwe, J. B., Bizimungu, E., Mushomi, J., Ntozi, J., & Kwagala, B. (2019). Factors associated with older persons' physical health in rural Uganda. *PLoS ONE*, 14(1), 1–15. https://doi.org/10.1371/journal.pone.0209262
- Maushe, F., Gambiza, T. A., & Chinengundu, C. (2025). *Intergenerational Solidarity in the Face of Adversity: Exploring the Role of Family Ties in Fostering Resilience among Older Adults. April.* https://doi.org/10.5281/zenodo.15030486
- Mbuthia, K., Mwangi, S., & Owino, G. (2022). Implications of providing social support to close network members on the social well-being of older people in Kitui County, Kenya. *Frontiers in Aging*, 3(November), 1–12. https://doi.org/10.3389/fragi.2022.897508
- Mdendemi, T. R., Mpeta, I. F., Mkelenga, A. J., & Macha, L. (2023).
 Determinants of Living Arrangements of Older Persons in Rural Areas of Kasulu District in Tanzania. *Rural Planning Journal*, 25(1), 97–111. https://doi.org/DOI: https://doi.org/10.59557/5k4xec35
- Mefteh, K. Y. (2022). Health Related Challenges of Rural Elderly Living in Co-Residential Family Care Arrangements. *Qualitative Report*, *27*(8), 1765–1782. https://doi.org/10.46743/2160-3715/2022.5488
- Mfungo, B. D., & George, V. (2022). Trends of Intergenerational Support towards Elderly Parents in Coast Region, Tanzania. East African Journal of Education and Social Sciences, 3(4), 11–23. https://doi.org/https://dx.doi.org/10.4314/eajess.v3i4.193
- Mfungoa, B. D., & George, V. (2022). Implications of Modernisation Processes on Elderly Well-Being In the Coast Region, Tanzania. *Tengeru Community Development Journal*, 9(2), 57–72. www.ticd.ac.tz
- Muhammad, T., Srivastava, S., & Sekher, T. V. (2021). Association of self-perceived income status with psychological distress and subjective well-being: a cross-sectional study among older adults in India. BMC Psychology, 9(1), 1–13. https://doi.org/10.1186/s40359-021-00588-5
- Naah, F. L., Njong, A. M., & Kimengsi, J. N. (2020). Determinants of active and healthy ageing in Sub-Saharan Africa: Evidence from Cameroon. *International Journal of Environmental Research and Public Health*, 17(9). https://doi.org/10.3390/ijerph17093038
- Ndubajam, L. N., Salifu Yendork, J., & Mills, A. A. (2023). The Older Adult Migrant and Support Systems: A Focus on Haatso and Agbogbloshie Yam Markets' Communities in Ghana. Families in Society, 104(1), 57– 74. https://doi.org/10.1177/10443894221145087
- Ofori-Dua, K. (2023). Elderly Care in Rural Ghana: Support System and Survival Strategies of Older Persons in Bamang, Ashanti Region, Ghana. Social Aspects of Aging in Indigenous Communities, 272–291. https://doi.org/10.1093/oso/9780197677216.003.0012
- Ren, K., Lan, J., Ge, L., & Zhou, L. (2025). The impact of intergenerational support on the mental health of older adults: a discussion of three dimensions of support. Frontiers in Public Health, 13(April). https://doi.org/10.3389/fpubh.2025.1467463
- Rutagumirwa, S. K., Hutter, I., & Bailey, A. (2020). "We Never Graduate from Care Giving Roles"; Cultural Schemas for Intergenerational Care Roles Among Older Adults in Tanzania. *Journal of Cross-Cultural*

- Gerontology, 35(4), 409–431. https://doi.org/10.1007/s10823-020-09412-w
- Sabates-Wheeler, R., Wylde, E., Aboderin, I., & Ulrichs, M. (2020). The implications of demographic change and ageing for social protection in sub-Saharan Africa: insights from Rwanda. *Journal of Development Effectiveness*, 12(4), 341–360. https://doi.org/10.1080/19439342.2020.1853792
- Saha, S. (2024). Social relationships and subjective well-being of the older adults in India: the moderating role of gender. *BMC Geriatrics*, 24(1), 1–14. https://doi.org/10.1186/s12877-023-04520-x
- Schatz, E., Seeley, J., & Zalwango, F. (2018). Intergenerational care for and by children: Examining reciprocity through focus group interviews with older adults in rural Uganda. *Demographic Research*, 38(1), 2003–2026. https://doi.org/10.4054/DemRes.2018.38.63
- Stoltzfus, J. C. (2011). Logistic regression: A brief primer. *Academic Emergency Medicine*, 18(10), 1099–1104. https://doi.org/10.1111/j.1553-2712.2011.01185.x

- Tungu, M. M., Saronga, H., & Amani, P. J. (2024). *Health-Related Quality of Life for the Insured and Non-Insured Elderly in Rural Tanzania : A Cross-Sectional Study.* 7(2).
- UNDP. (2023). Tanzania Human Development Report 2021/2022. In *MoF*. https://hdr.undp.org/system/files/documents/...report.../hdr2021-22pdf 1.pdf
- URT. (2024). The 2022 Population and Housing Census: Basic Demographic and Socio-Economic Profile; Tanzania Mainland (Vol. 4).
- Wittes, J. (2002). Sample Size Calculations for Randomised Controlled Trials. *The Johns Hopkins Bloomberg School of Public Health All*, 24(1), 39–52.
- Xu, L., Liu, J., Mao, W., Guo, M., Chi, I., & Dong, X. (2021). Intergenerational Solidarity and Being Primary Caregiver for Older Parents in Chinese American Families: Findings From PIETY Study. *Journal of Transcultural Nursing*, 32(6), 716–726. https://doi.org/10.1177/10436596211004677