Associations of informal employment and age with subjective and somatic health among older adults: Examining the pathways through social support and Loneliness

Charles Sunday UMEH[1] . Babatola Dominic OLAWA[2]
[1]*Department of Psychiatry, College of Medicine, University of Lagos, Lagos, Nigeria.*
[2]*Faculty of Humanities, North-West University, Mafikeng Campus, South Africa.*

Abstract

This study examined whether social support and loneliness can function as pathways from informal employment and age to subjective and somatic health. The sample consists of 465 older adults ($Mean_{age} = 74.18 \pm 9.42$) from rural communities in Ekiti State, Nigeria. Data were collected using structured instruments in individual households and subjected to path analyses. In the overall model, age was significant on subjective and somatic health but not informal employment. Only the indirect associations of age with subjective and somatic health were significant. Specifically, advancing age was associated with low social support, which in turn was associated with high loneliness feelings and then poor subjective and somatic health. Ageing and healthcare policies targeting increased social support and mitigation of loneliness in families and communities can be beneficial to lessen the health problems associated with advancing age.

Keywords: Informal employment; Ageing; Social support; Loneliness; Older adults

Charles Sunday Umeh
ucharles@yahoo.com

Department of Psychiatry,
College of Medicine, University of Lagos, Lagos, Nigeria

Introduction

Older adults in developing economies live below the poverty line, experience health and food insecurities, suffer inadequate social protection from the government, and do not have access to retirement or old age benefits (Adamek et al., 2022). As a result, a significant number of those aged 60 years and over in developing countries are active in the informal labour market compared to their counterparts in the developed world. According to the World Population Ageing Report (United Nations, 2015), labour force participation among older adults is highest in Africa (men, 52.2%; women, 32.6%), followed by Asia (men, 34.8%; women, 15.6%) and in Latin America (men, 38.10%; women, 16.80%). However, the figures appear to be less in Northern America (men, 23.5%; women, 14.5%), in Oceania (men, 21.4 %; women, 11.8%) and in Europe (men, 10.2%; women, 6.2%). As additionally noted by the United Nations Population Fund (2017), these figures are higher for both older men (64%) and women (43%) in Nigeria.

Given the high proportion of older adults involved in informal employment in Nigeria, which primarily involves engagement in petty trading (i.e., buying and selling of goods) and small-scale farming, it is important to examine how engaging in informal employment associates with both subjective and somatic health within this segment of the population. Subjective health, which is synonymous with self-rated health, is defined as self-reported assessments of physical or general health (Monden, 2014), while somatic health is usually a measure of medical diagnoses (Araújo et al., 2018). In the research literature, subjective and somatic health is shown to be related to employment in old age, and the nature of the relationship tends to be either positive, neutral or negative. For example, in a systematic review of 17 empirical works from 2011-2020, Baxter et al. (2021) suggested that the role of employment on health in old age is somewhat inconsistent as it may have either neutral or beneficial effects. The benefits were mainly found only among males, those not working full-time, and those working in high-quality and high-reward jobs. In another review, the authors concluded that globally," work supports healthy ageing and jeopardizes it" (Staudinger et al., 2016, p. S281). In other words, employment contributes to the health of older adults, but excessive work hours may jeopardize it. Among Nigerian older adults, Ogunyemi et al. (2018) showed that engagement in informal employment is associated with good subjective health.

Theoretically, the beneficial effect of being engaged in paid work on subjective and somatic health is supported by the economic deprivation model (Janlert & Hammarström, 2009) and the model of latent functions (Jahoda, 1982). According to the former, involvement in informal employment in old age prevents severe economic loss and enables the individual to meet financial and household needs, which are relevant for the procurement of material resources needed for good health. Complementing the economic deprivation model, the model of latent function maintains that non-financial rewards of employment, such as self-esteem, social interaction with other people, helping to structure time use for the day, and engagement in a collective purpose can benefit health. In essence, informal employment in old age can provide economic, social and psychological benefits.

One important determinant of subjective and somatic health that may covary with engagement in informal employment is age. With advancing chronological age, biological ageing occurs gradually and progressively, followed by a decline in system integrity and disability and morbidity (Belsky et al., 2020). Given an increase in functional limitations as ageing progresses and that ageing is negatively correlated with workability (Converso et al., 2018), there is a higher likelihood that the young-old would engage more in informal employment than the old-old. Thus, while examining the associations of informal employment on subjective and somatic health, it may be important to test the associations of age with subjective and somatic health and exclude it from the role of informal employment. Doing so

will increase our confidence in the role of informal employment on subjective and somatic health. Based on longitudinal data of older adults in Europe, Paleg and Nudelman (2021) demonstrated that increasing age was associated with poorer subjective and somatic health. The associations of increasing age with poor subjective and somatic health have also been reported among West African older adult samples (Fonta et al., 2017; Olawa et al., 2020).

The Present Study

This study assumes that informal employment and age associations with subjective and somatic health among older adults can occur through social support and loneliness. In other words, being employed may foster increased access to social support and lower feelings of loneliness, which, in turn, are associated with positive subjective and somatic health. Also, increasing age may be associated with a low perception of social support, increased loneliness, and adverse subjective and somatic health. These assumptions are based on the available evidence showing that (1) employment and age can influence social support and loneliness, (2) both social support and loneliness can influence subjective and somatic health, and (3) social support can be associated with lower levels of loneliness.

Informal Employment on Social Support and Loneliness

Social support refers to the experience of love, care and feelings of being valued and esteemed, and this arises from the reception of assistance and benefits from others or from the perception that such help is readily available when needed (Litwin & Landau, 2000; Taylor, 2011). Loneliness is ''the cognitive awareness of a deficiency in one's social and personal relationships, and ensuring affective reactions of sadness, emptiness, or longing" (Asher & Paquette, 2003, p. 75). The Rowe and Kahn (1997) model of successful ageing explains how employment is related to social support and loneliness. According to this model, two primary components of successful ageing are engagement in productive activities and sustaining interpersonal relations. Continual engagement in productive activities, such as paid employment, can provide older adults with access to social support and interpersonal relations, which are important in preventing loneliness. Empirical works support these notions by suggesting that being employed in paid work in old age increases access to social support (Brown et al., 2014; Kuhirunyaratn et al., 2007) and lowers feelings of loneliness (Cheng et al., 2021). In addition, social support plays a vital role in reducing loneliness (Freak-Poli et al., 2022).

Age on Social Support and Loneliness

Past works further suggest that age is associated with later-life loneliness and social support. For instance, Luhmann and Hawkey (2016) demonstrated elevated loneliness among the oldest old compared to the young old. The increase in loneliness among the old is expected, given the significant loss of social contacts such as spouses, friends and other significant others essential for social interactions (Berg-Weger & Morley, 2020). On the other hand, social support decreases with ageing. According to the convoy model of social relations (Antonucci et al., 2013), the pool of prospective supporters usually decreases as older adults age increases. Also, from the socioemotional selectivity perspective, the social networks needed for support become narrower because older adults concentrate more emotional resources on limited relationships as they advance more in age (Carstensen, 1995). The negative relationship between age and social support in later life is also empirically supported (Barrenetxea et al., 2021). Notably, the 80+ older cohorts report less social support than the young-old group (Czaja et al., 2021).

Social Support and Loneliness on Subjective and Somatic Health

High social support protects against poor subjective and somatic health among older adults, as various studies have shown. It is known that there is a subsequent improvement in

subjective health among older adults who receive assistance with household chores from children (Mao et al., 2020). In addition, social support, as assessed from the global perspective, is demonstrated to be associated with better self-rated health (Matud, 2019), fewer disease diagnoses (Bøen et al., 2012; Heinze et al., 2015) and low somatic complaints in old age (Melchiorre et al., 2013). On the other hand, loneliness poses a risk to subjective and somatic health. Several studies indicate that loneliness is associated with lower subjective health ratings (e.g., Czaja et al., 2021; Yang et al., 2018) and poor somatic health status (Berg-Weger & Morley, 2020; Hajek, 2020).

Objectives and Hypotheses

Based on the directions of the associations among informal employment, age, social support, loneliness and subjective and somatic health, this study examined the possible roles of social support and loneliness in the relationship of informal employment and age with subjective and somatic health. It proposed that social support and loneliness will significantly function as pathways in informal employment and age associations with subjective and somatic health.

It hypothesized that:

1. Social support and loneliness will be significant pathways from informal employment to subjective and somatic health.
2. Social support and loneliness will be significant pathways from age to subjective and somatic health.
3. Social support and loneliness will be significant pathways from the combined influence of informal employment and age to subjective and somatic health.

This study is important because there is no empirical evidence suggesting the possible roles of social support and loneliness in informal employment and age associations with subjective and somatic health among older adults. In addition, little or no study has been carried out to understand the roles of informal employment on subjective and somatic health independent of age among older adults within the sub-Saharan region.

Method

Sample and Procedure

Using a cross-sectional survey design, 465 community older adults (60 years and older) consisting of 171 males and 294 females ($Mean_{age}$ = 74.18 ± 9.42) were recruited from Ekiti State, Nigeria. The majority of the sample were young-old [60-79 years: n = 301 (65%)], had only primary level education [n = 355 (76%)], and were from polygynous families [n = 259 (56%)]. Only 57% [n = 265] of the total sample were informally employed, and the majority were the young-old [(n = 204 77%)]. There were almost equal numbers of those married [n = 229 (49.2%)] and widowed [n = 236 (50.8%)].

Sampling was done at three levels, which included a random selection of 6 local government areas (LGAs) from the three senatorial districts of Ekiti State. This was followed by a random selection of 3 communities each from the chosen LGAs. Participants were finally recruited through home-to-home contacts in pre-designated streets and houses with odd numbers of addresses. The inclusion criteria are being 60 years and over, not having signs of cognitive disorientation (as determined in an initial conversation before data collection), and having the ability to understand either English or Yoruba language or both. The appropriate Institutional Review Board ethically approved the study. Community kings/heads and

participants provided written or verbal informed consent before the interviews. Each respondent was given airtime for making voice calls for participating in the study.

Instruments

Somatic Health: Somatic health was measured by asking about the occurrence of twelve common diseases (diagnosed during physician visits) and impairments in old age (Bøen et al., 2012; Korten et al., 1999). These include angina, diabetes, musculoskeletal ailments, chronic lung disease, cancer, osteoporosis, cardiac infarction, stroke, visual problems, balance, urinary incontinence and hearing problems. Responses were in the *Yes (1)* and *No (0)* format. The "*yes*" responses are added together to obtain a full score for somatic health. This procedure for calculating somatic health has been utilized in previous studies (Lyness et al., 2006; Atkins et al., 2013). Higher scores indicate worse somatic health.

Subjective Health: This was measured by asking the following: *Please rate the overall condition of your health* (Korten et al., 1999). Responses were rated as either *poor* (1*), fair* (2), *good* (3) *or* excellent *(4)*. A single-item measure of subjective health is considered a good predictor of physical health (Wu et al., 2013), performance (Perez-Zepeda et al., 2016), and mortality (Schnittker & Bacak, 2014). The single-item subjective health measure is further shown to outperform the 12-item Short Form Health Survey (SF-12) in predicting sickness absence (Roelen et al., 2015). High scores represent good subjective health, while low scores denote poor subjective health.

Social Support: The support subscale of the Duke Social Support and Stress Scale (Parkerson et al., 1989) was used to assess social support. It comprises of 9 items measuring perceived support from family and non-family members on a three-point scale (*none* [0], some [1], a *lot* [2]). The scale is statistically correlated with other measures of social support (Parkerson et al., 1991). The current study obtained an internal consistency coefficient of .80 for the social support subscale. Also, by correlating the social support subscale with the social engagement measure (Mendes de Leon et al., 2003), the current study obtained a validity coefficient of .36. Scores on each item are added to obtain a full-scale social support score, with high scores indicating greater levels of perceived social support.

Loneliness: This was assessed using Hughes et al. (2004)'s Three-item Loneliness Scale. The scale was derived from the R-UCLA Loneliness Scale (Russell et al., 1980) and measures loneliness using a 3-point response format [*Often* (3), *some of the time* (2) and *hardly ever* (1)]. The three-item loneliness scale is as valid and reliable as the R-UCLA Loneliness Scale (Hughes et al., 2004). The current study obtained an internal consistency coefficient of .86 for the scale. A previous work that utilized the same sample as the current study reported validity coefficients of .41 and .34 by correlating the three-item loneliness scores with scores on measures of anxiety and depression, respectively (Olawa et al., 2021). High scores indicate high levels of loneliness

Informal Employment and Age: Participants were asked questions on socio-demographics, including sex, age, marital status, family type, employment status, and education. Employment status was dichotomized as "informally employed" and "not informally unemployed." All questionnaires were translated into the Yoruba language using the suggested guidelines by the International Test Commission (2018).

Statistical Analyses

IBM SPSS software (20.0) calculated the socio-demographic data and bivariate associations, while IBM SPSS AMOS 28 estimated the path models using the maximum likelihood (ML) method. Data distribution conforms to moderate univariate and multivariate normality requirements as skewness and kurtosis scores do not exceed the limits of 3 and 5, respectively (Byrne, 2010; Kline, 2011). Three models were tested. The first model examined the indirect associations of informal employment with SOH through social support and

loneliness. In contrast, the second model evaluated the indirect associations of age with SOH through social support and loneliness. In the third model, age was excluded from the association of informal employment with subjective and somatic health. In determining the minimum sample size for path analyses, Kline (1998) recommended that the sample size should be 10 times the number of parameters. The sample size for this study (N = 465) is adequate given that there was a maximum of 29 parameters (18 weights, 4 covariances and 7 variances) in each of the path models estimated.

Results

Bivariate Relationships among Main Study Variables

Table 1: Bivariate associations and descriptive statistics

	1	2	3	4	5	6	7	8	9	10
Sex (1)	1									
Age (2)	.007	1								
Marital status (3)	-.53**	-.26**	1							
Family Type (4)	-.19**	-.14**	.14**	1						
Education (5)	-.22**	-.04	.14**	.05	1					
Employment (6)	.02	-.40**	.13**	.07	-.10*	1				
Social Support (7)	-.13**	-.22**	.18**	.14**	.07	.15**	1			
Loneliness (8)	.15**	.09*	-.28**	-.11*	.09*	-.08	-.35**	1		
Somatic health (9)	.12*	.22**	-.12*	-.06	-.04	-.14**	-.13**	.15**	1	
Subjective health (10)	-.10*	-.16**	.09*	.01	-.13*	.12**	.13**	-.16**	-.45**	1
Mean							9.88	4.56	2.00	2.5
SD							4.94	1.70	1.5	.75
Range							0-18	3-9	0-12	1-4
Skewness							1.00	.88	1.21	-.32
Kurtosis (Multivariate Kurt = 3.32)							-1.13	-.22	4.82	-.32

**p < .01; * P < .05; Sex (Male = 0, Female = 1); Marital status (Widowed = 0, Married = 1); Family type (Polygyny = 0; Monogamy =1); Education (Others = 0, Primary = 1); Employment (Unemployed = 0 ; Employed = 1)

Table 1 presents the descriptive statistics and bivariate relationships among study variables. Increasing age was related with low social support (r = -.22, *p* < .001), poor subjective (r= -.16, *p* = .001) and somatic health (r = .22, *p* < .001) and greater levels of loneliness (r = .09, *p* = .05). Informal employment was associated with lower age (r_{pb} = -.40, *p* < .001), high social support (r_{pb} = .15, *p* = .002) and good subjective health (r_{pb} = .12, p = .006) while being informally unemployed correlated with poor somatic health (r_{pb} = -.13, *p* = .003). There was no significant relationship between employment status and loneliness (r_{pb} = -.08, *p* = .07). Social support was associated with good subjective health (r = .13, *p* = .005) and reduced somatic health problems (r = -.13, *p* = .005). Conversely, loneliness was related with poor subjective (r = -.16, p = .005) and somatic health (r = .15, *p* = .006). The relationship between social support and loneliness was negative (r = -.35, *p* < .005)

Bivariate Relationships between Continuous Variables and Socio-Demographics

Being a male was associated with more social support (r_{pb} = -.13, p = .006) and subjective health (rpb = -.10, p = .04) while being a female was associated with more loneliness (r_{pb} = -.15, p = .002) and poor somatic health (rpb = .12, p = .01). Marriage was related to greater social support (r_{pb} = -.18, p < .001) and good subjective health (r_{pb} = -.09, p = .05) while widowhood was associated with more loneliness (r_{pb} = -.28, p < .001) and poor somatic health (r_{pb} = -.12, p = .01). Monogamy was related to more social support (r_{pb} = .14, p = .004) while polygyny was associated with more loneliness feelings (r_{pb} = -.11, p = .03). Being educated was associated with positive subjective health (r_{pb} = -.13, p = .005). Given these associations, sex, marital status, family type and education were utilized as covariates in the path models.

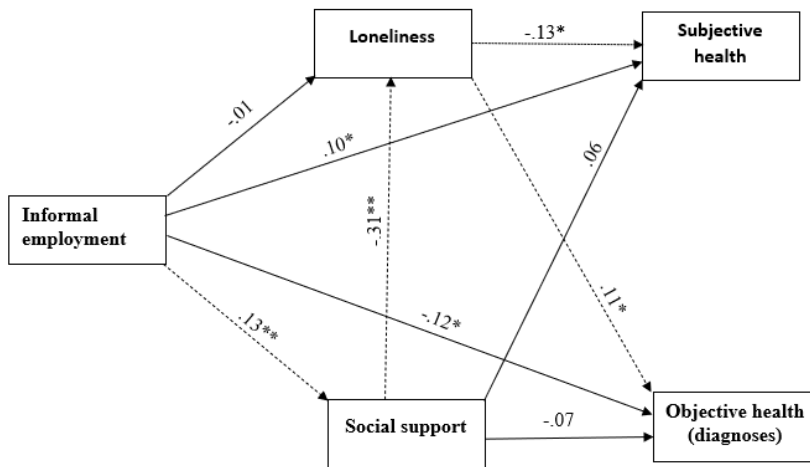### **Direct Associations among Variables**

Figure 1: Model 1 showing direct associations from informal employment to subjective and somatic health
***p < .01*
* *P < .05*
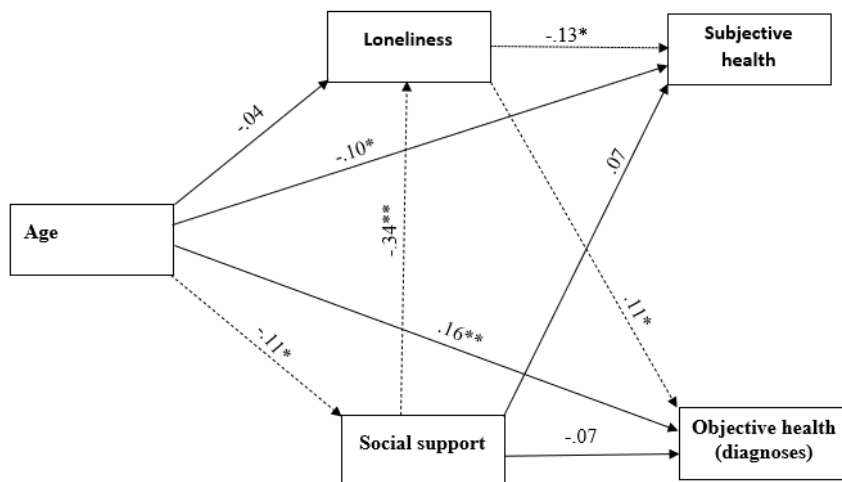Note*: Broken lines indicate the significant indirect effect pathways*

Figure 2: Model 2 showing direct associations from age to subjective and somatic health
***p < .01*
* *P < .05*
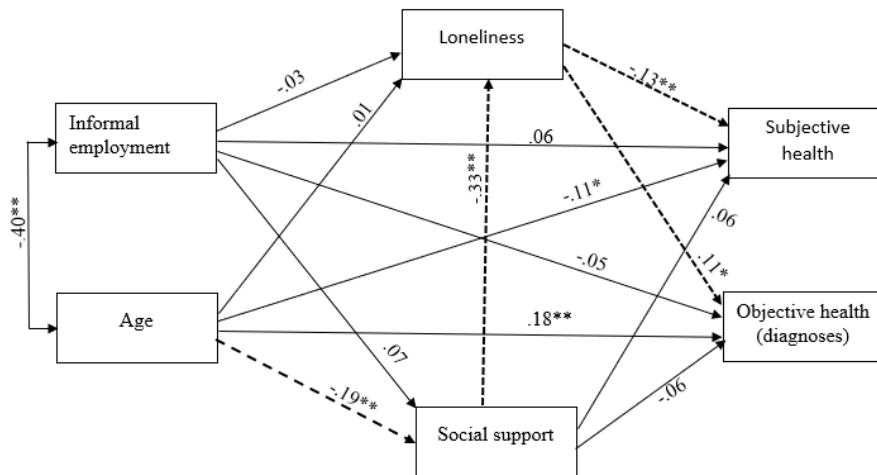Note*: Broken lines indicate the significant indirect effect pathways*

Figure 3: Model 3 showing direct associations from informal employment and age to subjective and somatic health
***p < .01*
** P < .05*
Note: Broken lines indicate the significant indirect effect pathways

Figure 1 displays the first model with the standardized estimates of the direct associations from informal employment to subjective and somatic health. Being informally employed was significantly associated with good subjective health (β = .10 p = .03) and less somatic health problems (β = -.12, p = .01). Informal employment was also related to greater levels of social support (β = .14, p = .002) but not significantly associated with loneliness (β = .01, p = .76). Increase in social support was associated with lower feelings of loneliness (β = -.31, p < .001) but not with subjective (β = .07, p = .14) and somatic health (β = .07, p = .15). As expected, loneliness was related with poor subjective (β = -.13, p = .007) and somatic health (β = .11, p = .02). The path from marital status to loneliness (β = -.23, p < .001), the path from family type to social support (β = .13, p = .006) and the path from education to subjective health (β = -.10, p = .01) were significant in model 1.

Figure 2 presents the second model with standardized estimates of the direct associations from age to subjective and somatic health. Increasing age was related with reduced social support (β = -.11, p = .016), poor subjective (β = -.10, p = .035) and somatic health (β = -.16, p < .001). However, age was not significant on loneliness (β = .02, p = .68). All the other direct associations followed similar patterns as model 1. The covariate of marital status was significant on social support (β = .12, p = .01) and loneliness (β = -.24, p < .001) while family type was significant on social support (β = .11, p = .02).

In model 3 (figure 3) the influence of age on subjective health (β = -.11, p = .02), somatic health (β = -.19, p < .001) and social support (β = -.17, p < .001 were significant. Remarkably, the association of informal employment with subjective health (β = .06, p = .25), somatic health (β = -.05, p = .32) and social support (β = -.07, p = .15) became non-significant. Other associations followed the same patterns as in the previous models. Inform employment was found to covary with age [Cov (x, y) = -.40], showing that being informally employed was related to decreasing age to a moderate extent. The covariate of marital status was significant on loneliness (β = .24, p < .32) while the path from education to subjective health was also significant (β = -.10, p = .02).

Outcomes of Indirect Associations

Table 2: Indirect association of employment and age with subjective and somatic health

	5000-Sample Bootstrapping b (95% BCa CI)	Model fitness				
		χ^2 (df)	p-value	RMSEA (90% CI)	CFI	SRMR
Model 1		11.12 (6)	.09	.04 (.00, .08)	.99	.03
IE → Loneliness → Subjective health	.002 (-.01, .02)					
IE → Loneliness → Somatic health	-.002 (-.04, .02)					
IE → Support → Subjective health	.01 (-.003, .04)					
IE → Support → Somatic health	-.02 (-.09, .01)					
IE → Support → Loneliness → Somatic health	**.008 (.002, .02)**					
IE → Support → Loneliness → Subjective health	**-.01 (-.04, -.002)**					
Model 2		2.43 (5)	.79	.00 (.00, .04)	1	.01
Age → Loneliness → Subjective health	.004 (-.03, .01)					
Age → Loneliness → Somatic health	006 (-.02, .05)					
Age → Support → Subjective health	-.01 (-.04, .001)					
Age → Support → Somatic health	-.02 (-.01, .09)					
Age → Support → Loneliness → Somatic health	**-.008 (-.02, -.002)**					
Age → Support → Loneliness → Subjective health	**.013 (.001, .04)**					
Model 3						
IE → Support → Loneliness → Somatic health	.004 (.00, .014)	5.10 (3)	.17	.04 (.00, .09)	.99	.02
IE → Support → Loneliness → Subjective health	-.01 (-.03, .01)					
Age → Support → Loneliness → Somatic health	**-.001 (-.001, .00)**					
Age → Support → Loneliness → Subjective health	**.001 (.00, .002)**					

Note: Bold denotes significance

Table 2 presents the indirect associations of informal employment and age on subjective and somatic health through social support and loneliness using 95% bias-corrected confidence intervals (BCa CI) with 5,000 bootstrap samples. Social support and loneliness did not individually serve as significant paths from informal employment and age to subjective and somatic health, as shown in Figure 1 and Figure 2. Instead, social support and loneliness sequentially functioned as pathways from informal employment to somatic [B = .008 (.002, .02)] and subjective health [B = -.01 (-.04, -.002)]. Also, the path from age to somatic [B = -.008 (-.02, -.002)] and subjective health [B = .013 (.001, .004)] were sequentially linked by social support and loneliness. In model 3, the serial paths from age through social support and then through loneliness to somatic [B = -.001 (-.001, .00)] and subjective health [B = .001 (.00, .002)] were significant. However, the serial paths from informal employment through social

support and then loneliness to somatic [B = .004 (.00, .01)] and subjective health [B = -.01 (-.03, .01)] were not significant.

Discussion

The present study extends current knowledge by examining the roles of social support and loneliness in informal employment and age associations with subjective and somatic health. In addition, the association of informal employment with subjective and somatic health was examined independently of age. In line with previous studies (e.g., Baxter et al., 2021), the relationship of informal employment with subjective and somatic health was confirmed. Informal employment was found to be associated with an increase in subjective health and reduced somatic health problems. These outcomes provide further credence to the economic deprivation theory and the model of latent functions, which posit that employment can supply both financial and non-financial (e.g., self-esteem and interpersonal relations) resources needed for promoting good health (Jahoda, 1982; Janlert & Hammarström, 2009). Results also agree with past studies showing that advancing chronological age is associated with poorer health conditions among older adults (Olawa et al., 2020; Paleg & Nudelman, 2021). As age advances, biological ageing gradually sets in and increases vulnerability to disability and morbidity (Belsky et al., 2020).

However, the association of informal employment with subjective and somatic health changed when age was controlled in the model. Age was significant on subjective and somatic health while informal employment was not. This implies that the association of informal employment with subjective and somatic health was confounded by age. The covariance of informal employment and age suggested that the lower the age of older adults, the more they engaged in informal employment. Given that the young old are less limited functionally, report better health (Belsky et al., 2020), and engage more in informal employment than the old-old, it is unsurprising that informal employment appears to be associated with good subjective and somatic health.

Moreover, informal employment and age were associated with social support but not loneliness. While employment is associated with high social support, increasing age was related to low social support. These outcomes corroborate the model of successful ageing (Rowe & Kahn, 1997), emphasizing that engagements in productive activities such as informal employment can position older adults to receive more support from others. The finding regarding the association of age with social support agrees with the socioemotional selectivity theory and the convoy model of social relations, which states that advancing age is associated with a decline in social networks which are needed to access social support (Antonucci et al., 2013; Carstensen, 1995). Since decreasing social network is often onset by retirement, loss of spouse, friends and significant others (Berg-Weger & Morley, 2020), the very old would be more at risk of a decline in social supports which are supposed to be available from these sources, (Barrenetxea et al., 2021; Czaja et al., 2021).

Besides, current results did not replicate existing studies (Cheng et al., 2021; Luhmann & Hawkey, 2016) showing that employment and age are directly related to loneliness among older adults. This may be due to the interdependence and the communalism in the living arrangements of many African communities, which are more determinant factors of loneliness (Ikuenobe, 2017; van Staden & Coetzee, 2010) than informal employment or increasing age. Contrariwise, the associations of loneliness with subjective and somatic health were confirmed. Specifically, an increase in feelings of loneliness was found to be associated with poor subjective and somatic health. Loneliness poses a substantial risk to subjective and somatic health among older adults (Hajek, 2020; Yang et al., 2018). It impairs health by causing a "chronic threat of and hypervigilance for negative social evaluation", which can lead to an

increase in cortisol levels and then chronic illnesses (Hawkley & Cacioppo, 2010, p. 6). However, the relationships of social support with subjective and somatic health were not confirmed. This contradicts previous findings (Heinze et al., 2015; Melchiorre et al., 2013), showing a significant association between social support and health.

Regarding the hypotheses on indirect associations, results showed that social support and loneliness did not individually account for the relationships of informal employment and age with subjective and somatic health in all three models. Instead, social support and loneliness sequentially accounted for these relationships. However, only the serial indirect associations from age to subjective and somatic health were significant in the final model, while those from informal employment to subjective and somatic health were not. This implies that social support and loneliness (only) serially accounted for the association of age with subjective and somatic health. There are three major inferences from these results: 1). As noted previously, informal employment is not an important factor in subjective and somatic health but advancing age. Hence, the non-significance of the indirect associations of informal employment with subjective and somatic health is logical. 2) Since social support and loneliness did not individually account for the indirect association of age with subjective and somatic health, it can be assumed that the two variables (i.e., social support and loneliness) are not sufficient on their own to link the relationship of age with subjective and somatic health. 3) Instead, social support and loneliness indirectly and sequentially link the relationships of age with subjective and somatic health. That is, increasing age is associated with low social support, which in turn is associated with high feelings of loneliness and poor subjective and somatic health. These pathways knit the available piecemeal evidence in the literature showing that advancing age predicts low social support (Czaja et al., 2021), low social support influences high feelings of loneliness (Freak-Poli et al., 2022), and high loneliness impairs both subjective (Yang et al., 2018) and somatic health (Hajek, 2020).

It is noteworthy that this study has some limitations. Study participants are predominantly older adults with limited education, residing primarily in rural communities within Ekiti State. Generalizing results to highly educated older adults living in urban areas may be limited. It is also possible that diagnoses may have been underreported, given that most older adults in Nigeria do not undergo regular medical checks. A single item was used to assess subjective health, thus implying a limitation in providing reliability evidence (Spadoni et al., 2004). However, previous work shows that a one-item subjective health measure outperforms multi-item measures of health conditions in predicting sickness absence (Roelen et al., 2015). In addition, the cross-sectional and path-analytic approaches utilized in this study do not permit us to imply a cause-and-effect relationship among the variables. Prospective studies in this area can utilize the longitudinal framework to build more confidence in the associations among the variables over time. In addition, future studies may benefit from using older adult samples with diverse characteristics to enhance the generalizability of findings.

Conclusion

It is established that social support and loneliness can sequentially contribute to the association between advancing age and health among older adults. Advancing age was associated with low social support, which in turn was associated with increased loneliness and then poor subjective and somatic health. Informal employment was related to good subjective and somatic health, but these associations were confounded by age. Clinicians should recognize the place of low social support and increased loneliness in geriatric medical care as age advances. Ageing and healthcare policies aimed at boosting social support and diminishing feelings of loneliness within families and communities can help lessen the health problems associated with old age.

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