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Resilience: Key Factors Associated With Resilience of Older People in Botswana

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Abstract

This study aims to determine key factors that predict resilience in older people. A cross-sectional design and quantitative methods were used for this study. Four districts were selected in Botswana using cluster random sampling. Data on resilience from 378 older adults aged 60 years+ [Mean Age (SD) = 71.1 (9.0)] was collected using snowballing technique. Data on socio-demographics, protective and risk factors were also collected from urban and rural areas. CHAID (Chi-squared Automatic Interaction Detection) analysis was used to predict the strengths of the relationships among resilience and all predictor variables because the data were skewed. Five major predictor variables reached significance to be included in the model: depression, QOL, social impairment, education, and whether participants paid for services or accessed free services, along with high self-esteem ($p < .001$), security, and self-efficacy ($p < .05$). The presence of depression symptoms ($\chi^2 = 23.7$, $p = .001$, $df = 1$) and self-esteem ($\chi^2 = 39.6$, $p < .001$) had the greatest influence on resilience. Older people with no depression symptoms but had low QOL still had social impairment ($\chi^2 = 3.9$, $p < .05$). Older people with no depression symptoms had moderate to high QOL but had low resilience as a result of paying for services ($\chi^2 = 7.4$, $p < .02$). Both protective and risk factors had a significant influence on resilience. Knowledge about the predictors of resilience in older people may assist stakeholders devise effective intervention, especially now with COVID-19 ravaging the country. Additionally, policies and programs inclined to assist older people may be established and implemented.

Keywords

resilience, health, aging, Botswana, older people, wellbeing

Introduction

The older population in Africa will transcend that of any other region in the world and is estimated to grow three times more by the 22nd century, from 74.4 to 235.1 million (U.S. Census Bureau, 2019). Due to this demographic trend, sub-Saharan Africa (SSA), including Botswana, is therefore making efforts to address older people's vulnerabilities by building and fostering the resilience of the aged, promoting healthy aging, and securing their basic rights. Botswana has a population of 2 million, a life expectancy of 70 years, and 5% of the population is aged 60 and above (Botswana Demographics, 2020). Most older people live in the rural areas where 24% of the people live below the poverty datum line. Older people aged 65 and above are eligible for a US\$45 monthly pension, with most older people living in villages as there are no institutions for older people in the country. The aging process is, however, associated with limited resources, and deterioration in personal functioning and participation. Yet, there is evidence to suggest that revitalization or renewed engagement is plausible and a feature of older people aging well in industrialized countries (Aboderin, 2018; Mhaka-Mutepfa et al., 2016).

The Concept of Resilience

Aging research has been slow to embrace the concept of resilience (Pruchno & Carr, 2017). Traditionally, aging was perceived as a negative phenomenon as it was associated with losses on many levels (Angevaere et al., 2020). The concept of resilience was, therefore, associated with adversity and bouncing back from negative events (Pruchno & Carr, 2017), while other authors perceived resilience as "moving on" despite the negative events (Pathike et al., 2019). A systematic review of the conceptual literature on resilience in older people identified it as dynamic and having three attributes: a stressor, leading to a response to the stressor, and a mechanism that reflects the context (Angevaere et al., 2020). Resilience protective factors are "assets and resources within the individual, their life and environment,

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which facilitate the capacity for adaptation and “bouncing back” in the face of adversity” (Windle & Bennett, 2011, p. 163). The World Health Organization (WHO, 2017) also defined resilience as a dynamic process characterized by both internal and external factors like social support which facilitate coping. This paper uses the above definitions of resilience especially those by Pruchno and Carr (2017) and Windle and Bennett (2011).

Literature Review of Previous Studies

Most studies on resilience among older people were conducted in the western world (Pathike et al., 2019). Researchers in a previous study in Italy investigated the role of resilience in rehabilitation among older patients (Rebagliati et al., 2016). The authors postulated that older people with lower incomes were less likely to achieve successful aging because of the higher prevalence of health risk factors. In addition, resilience was said to play a pivotal role in improving the functionality of patients at discharge. A recent study in German (Weitzel et al., 2021) found high resilience to be meaningfully linked with a lower perception of threat from COVID-19 among adults aged 65 years and older, alluding to the positive thought component of resilience. Previous researchers also revealed that older people with low resilience had poor well-being and poor mental health (Abreu & Rodriguez Blanco, 2017; Brouskeli et al., 2018; Harms et al., 2018; Hoare, 2015; Hu et al., 2015; Lee et al., 2013; McClain et al., 2018; The Resilience Institute, 2018), therefore impacting society negatively because the older people fail to adapt to challenges they encounter.

Older people may lack resources or resilience protective factors, and they may be frail as a result of diseases and old age (Hoare, 2015; McClain et al., 2018; Mhaka-Mutepfa et al., 2015). Whether people are healthy or resilient is determined by their circumstances and environment (Gheshlagh et al., 2017; Shaw et al., 2016). People with low resilience will most likely develop poor mental health as they lack coping mechanisms and adaptation, characteristics of people who possess high resilience levels. The foregoing authors also found a high correlation between health, resilience, and wellbeing. This was also echoed by Svence and Majors (2015) when they postulated that the most important category of positive psychology is resilience and well-being. Well-being is part of quality of life (QOL), as well as physical and mental health.

There is a dearth of information on resilience studies on older people in sub-Saharan Africa (SSA). The few studies on resilience in older people in sub-Saharan Africa, for instance, in Namibia and Zimbabwe (Kalomo et al., 2018; Mhaka-Mutepfa et al., 2014), revealed that health, unemployment, and resilience were found to be highly correlated (Mhaka-Mutepfa et al., 2014).

WHO (2019, p. 1) reiterated that “to a large extent, factors such as where we live, the state of our environment, genetics, our income, and education level, and our relationships with

friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact.” The same determinants of health also have a similar influence on resilience as the two variables are highly correlated.

The concept of resilience contributes to why the impact of social determinants of health varies among older people. People, particularly older people, are not able to directly control many of the determinants of health, therefore the need to establish which determinants of health affect them to effect appropriate intervention. In Botswana, older people face several challenges, including a lack of psychosocial care, poverty, and the provision of effective health care services (Onen et al., 2019). Yet, there is a dearth of evidence that shows how older people in Botswana cope with these challenges and if they are resilient. Thus, research to establish how older people are coping with the challenges associated with aging is important. The current study aimed to explore key factors that influence the resilience of older people in Botswana. The following questions of interest were asked: (1) what are the levels of resilience of older people in Botswana? and (2) what key factors are associated with resilience in older people in Botswana?

Methods

Research Design

A cross-sectional research design with cluster sampling stratified by sub-districts was used to collect the quantitative data. In a cross-sectional study, the investigators measure the outcome and the predictors in the study participants at the same time with little or no additional costs. Cross-sectional designs are used for population-based surveys because they contain multiple variables at the time of the data snapshot (Setia, 2016). Stratification was done because it produces a smaller error of estimation than simple random sampling and the cost per observation in the survey may be reduced because of convenient groupings. This was advantageous because the districts comprised different population sizes, with urban districts more densely populated than rural.

Participants and Setting

This study was carried out in four districts of Botswana: urban (high and low socio-economic status (SES)), urban villages (low and high SES), and two rural districts, which were selected purposively to include urban and rural populations in the sample. The four districts were divided into three homogenous groups to increase the feasibility of the sampling. Districts in Botswana are classified as urban, urban villages, and rural. Probability proportionate to size (PPS) was used to select sub-districts from the four districts. PPS increases the probability of sampling more populous units, to make every individual’s chance of being included in the

sample similar, irrespective of the size of the unit in which they live. The three groups selected were urban low density (high SES), urban high density (low SES), and rural areas (both low and high SES).

A snowballing technique was then used to select the households with older participants (over 60 years old) who spoke a local language or English. The snowball technique is a recruitment method whereby participants identify other potential subjects. The referral process enables investigators to access people who are difficult to sample. The field interviewers asked for households with an older person, who then nominated the next household until the number required for the sub-district was reached. In each household, one Motswana elder aged 60 years and older was interviewed. A Kish grid was used when more than one person was eligible. Interviews were done at home. Interviewers knocked from door to door or phoned to get hold of the referred participants. Interviews were conducted in the preferred language of the participant. The older people could be living alone, with their children, grandchildren, or other relatives. They could be receiving social protection grants, instrumental support (e.g., Activities of Daily Living and household chores), or enacted support (support during stressful events) or no support, could be employed or not employed. Thus, all people over 60 years were included in the study except those who were mentally ill or suffering from cognitive impairment.

Rural and urban populations have had different findings. Resilience and risk factors may cluster in disadvantaged neighborhoods. Due to financial constraints, the sampling was not representative of all districts in Botswana. Rural districts near the cities were selected as they were easily accessible. Of the 374 participants (mean age = 71.1, $SD=9$), most of them (82%) were living on less than 250 USD per month and earned social security grants of 45 USD per month. Ninety-four percent of the elderly had one or more chronic conditions (diabetes, hypertension, arthritis, and so on) (see Table 1). Seventy-four percent were on medication for their ailments. Forty-two percent of the participants thought their health was poor, 35% thought it was moderate, and the rest (23%) thought it was good.

Measures

An interviewer-administered a standardized questionnaire to collect data on socio-demographic factors, health-related factors (including personal, social, and environmental assets), QOL, clinical variables, and resilience. The study questionnaire was translated into Setswana and back-translated into English by a native speaker. The items in the questionnaire were validated- a pilot study was run to test the items, particularly the self-made health-related questions to establish the reliability and feasibility of the questionnaire. Cronbach alpha for the questionnaire was .87. The questionnaire comprised the following: socio-demographics,

health-related characteristics (see Table 1), the resilience scale, and the WHOQOL-BREF.

Health-related factors were self-made for this study and comprised the following: the presence of ailments/chronic conditions, types of chronic ailments, health insurance status, self-perceived health, use of healthcare services (past 12 months), health service utilized, whether on medication or not, and satisfaction with the provision of health care services in their communities (see Table 1).

The 14-item Likert-type resilience scale (Wagnild, 2009) was used to measure the resilience of older people. Resilience was grouped into three components: low (7.7%, moderate (31.3%), and high (61%; see Table 1). The interviewer-administered questionnaire also comprised the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF; WHO, 1996) which was used to collect data on the physical and mental health, and wellbeing (social relationships and environment) of older people. The total QOL was calculated. Thus, QOL includes wellbeing (social relationships and environment), and physical and mental health. The Patient Health Questionnaire-9 (PHQ-9) developed by Kroenke and Spitzer (2002) was used to assess depression severity and the General Anxiety Disorder-7 (GAD-7) developed by Spitzer et al. (2006) was used to assess anxiety severity. The last question on the PHQ-9 assesses social impairment.

Ethics

The research study was approved by the University of Botswana Office of Research and Development (ORD), the Research Ethics Committee of the University, and the Human Research Development Committee of the Botswana Ministry of Health and Wellness. Participation in this study was voluntary and written consent was obtained from the research participants. Before data collection, participants were adequately informed of the objectives, duration, and voluntary nature of the study. The respondents were assured of the confidentiality and anonymity of the individual data through the use of subject identification numbers. When signing consent forms, which were also approved by ORD, illiterate participants used an X. The completed questionnaires were stored in a locked filing cabinet in the principal investigator's office, and the data was kept on a password-protected computer only accessible to the investigators.

Data Analysis

Statistical analysis for the quantitative data was performed using the Statistical Package for Social Sciences (SPSS 25). The intended sample size for the study participants was 384, and the actual sample size was 378. The sample thus gave adequate statistical power (95%) to detect statistically significant associations among socio-determinants of health and resilience ($p < .05$) of older people in Botswana. The

Table 1. Predictor Variables Involved in the Study to Create the CHAID Model (N=378).

	N=378		Means (SD)		correlations
	Freq	%	Unweighted	Weighted	Resilience
Resilience					
Low resilience	29	7.7	81.3 (13.1)	83.5 (10.9)	
Moderate resilience	117	31.3			
High resilience	228	61			
Socio-demographics					
Place of residence					
Rural	95	25.1			
Urban villages	118	31.2			
Urban	159	42.1			
Age: 60–70 (young-old)					
60–65	121	32	71.1 (9.0)	71.4 (8.9)	
66–70	70	18.5			
71+(old-old)					
71–75	72	19			
76+	113	29.9			
Gender					
Female	272	72			
Male	105	27.8			
Highest qualification					
None	124	32.8			
Primary	184	48.7			
Secondary	24	6.3			
College	14	3.4			
University	29	7.7			
Marital status					
Married	115	30.4			
Single	259	68.5			
Religiosity					
Non-Christian	67	17.8			
Christian	311	82.3			
Caregivers/non caregivers					
Non-caregivers	93	24.6			
Caregivers	285	75.4			
Income					
None/low (<2,500 pula)	309	81.7			
Middle/high (250+ usd)	63	16.7			
Livelihood/profession					
Farming	83	21.9			
Vending	39	10.3			
Employed	10.3	11.9			
Other: domestic worker	95	25.1			
Health-related factors					
Self-perceived health					
Bad	160	42.3			
Moderate	131	34.7			
Good	87	23			
Chronic diseases					
None	20	5.3			
Present	357	94.4			
Health insurance status					
No insurance	341	90.2			

(continued)

Table 1. (continued)

	N = 378		Means (SD)		correlations
	Freq	%	Unweighted	Weighted	Resilience
Insurance	29	7.7			
Access to healthcare (past 12 months)					
No	12	3.2			
Yes	364	96.3			
Type of services					
Free services	319	84.4			
Paid services	12	3.2			
Taking any medication					
No	98	25.9			
Yes	280	74.1			
Social impairment					
None	298	79.3			
Present	78	20.7			
Depression					
None	348	92.6			
Present	28	7.4			

Source. Adapted from Mhaka-Mutepfa et al. (2020).

response rate was 92%, suggesting a lower risk of non-response bias.

Summary statistics were used to describe the sample. To identify differences in resilience levels, the sample was stratified based on their resilience score level in three classes (low, moderate, and high). Due to violations in the normality and homogeneity of the distributions of the data, chi-square automatic interaction detection (CHAID) analysis was performed to determine which combinations of the study variables were most associated with resilience or predict membership in the different categories of resilience (Díaz-Pérez & Bethcourt-Cejas, 2016; Kass, 1980). The weighting of data was done to re-balance the data to more accurately reflect the population and/or to improve the accuracy of the survey estimates. Thus, weighted data were used to find associations.

CHAID analysis shows the most significant predictor variables and their interactions with the dependent variable via a tree diagram using the chi-square statistics, Bonferroni method, and category fusion procedure (Kass, 1980). The CHAID analysis was run in duplicate with parent nodes defined at 50 subjects, child nodes defined at 25 subjects, and significance set at $p < .05$. To build the CHAID model, all relevant factors; socio-demographics, health-related, personal, social, and environmental assets, and clinical variables were included. Therefore, key predictors that were associated with levels of resilience in older people were found (see Figure 1). Resilience was categorized as low and high in the analysis. Weighted data will be presented although SPSS complex analysis may not have been the best software to use weighted data. Nonetheless, weighted data helps compute unbiased estimates from sample surveys because the whole population did not have identical probabilities of selection

and the key groups were unbalanced. The findings are presented below.

Results

Levels of Resilience

Most of the participants had high resilience (61%), followed by moderate resilience (31%), and low resilience (7.7%). The levels of the outcome variable (resilience), unweighted, weighted means, and *SDs* are shown in Table 1 above.

Factors Associated With Resilience (Weighted Predictors)

The rest of the predictor variables used to create the CHAID model are also presented in table 1. Twenty-seven predictor variables were entered into the model, and most of them showed no associations, so some were therefore left out of the tables. The predictors that were associated with resilience are shown in Figure 1 (weighted data). The tree analysis in Figure 1 shows a 3-level CHAID tree with a total of 11 nodes, of which six are terminal nodes. Five major predictor variables reached significance to be included in this model: depression, QOL, social impairment, education, and whether participants paid for services or accessed free services. The presence of depression symptoms had the greatest influence on resilience ($\chi^2 = 23.7, p = .001, df = 1$). This variable generated two nodes (node 1 and node 2): “no symptoms” and “yes symptoms.” The number of older people with low resilience among those without depression symptoms (3.3%) was lower than that of those with depression symptoms (19%).

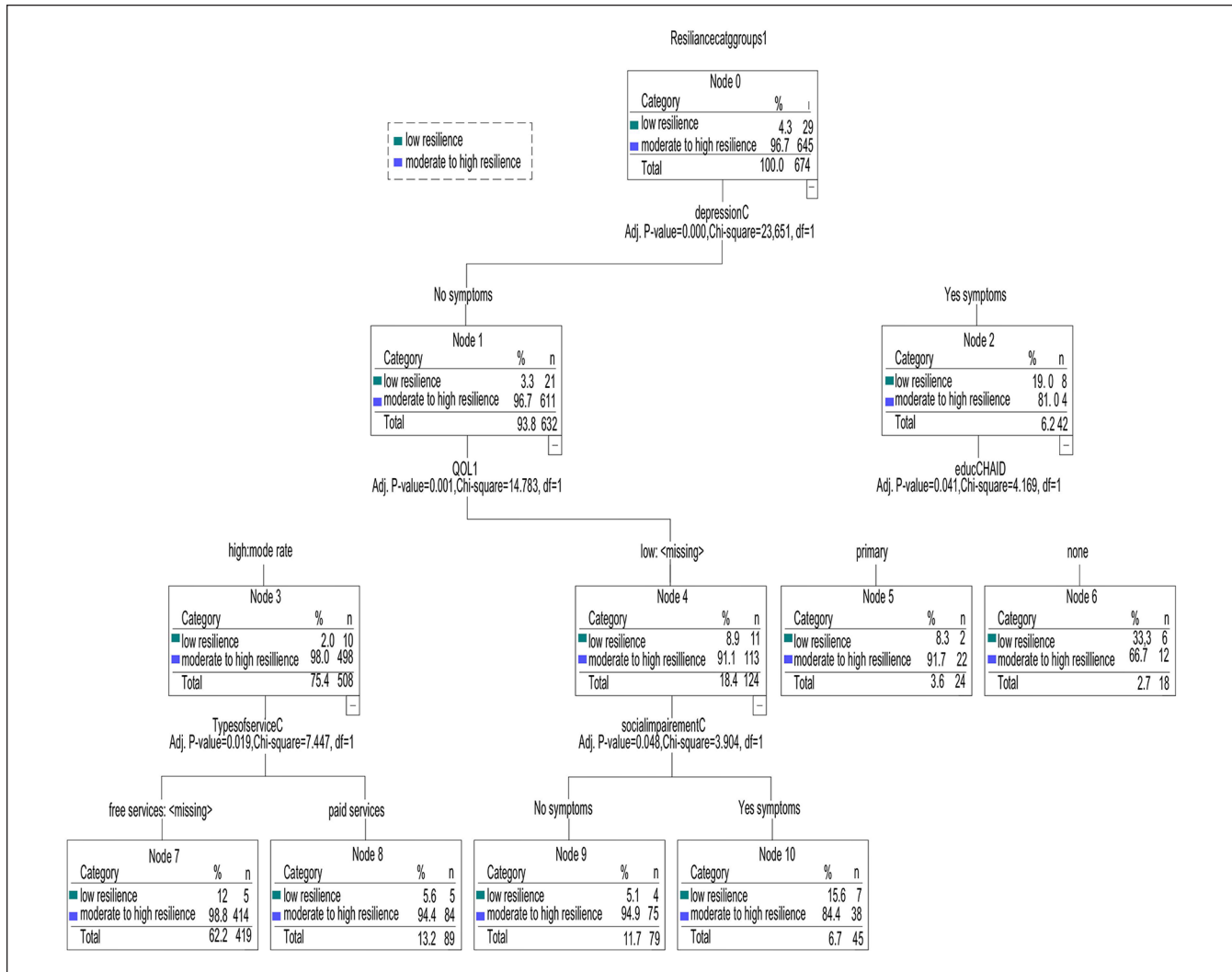


Figure 1. Weighted key predictors associated with resilience of older people.

Of those without depression symptoms, 97% had high resilience. Thus, older people with depression symptoms have lower levels of resilience than their counterparts. However, the level of resilience varied depending on the older person’s education level [a proxy for socioeconomic status (SES)]. Thirty-three percent (33%) of those with low resilience had no education and 8.3% had primary education, illustrating the effect of education on resilience.

Figure 1 also indicates that the CHAID analysis continued for older people who had no depression symptoms. Without depressive symptoms, 8.9% of those with low QOL had low resilience, compared to 2% of those with moderate to high QOL ($\chi^2=14.8, p=.001$). Ninety-one percent of those with low QOL had low resilience, and the percentage increased to 98 for those with moderate to high QOL. The CHAID analysis continued to show social impairment for older people who had low QOL. Five percent (5%) of those with no social impairment had low resilience, and the percentage increased to 15.6 for those with social impairment. This means that

even if an older person did not have depression symptoms but had a low QOL, they could still have a social impairment ($\chi^2=3.9, p<.05$). The CHAID analysis also continued for those who had moderate-to-high QOL. About 1% of older people who had free access to health services had low resilience. The percentage of low resilience increased to 5.6 for those who had to pay for the services. This implies that older people who did not have depression symptoms had moderate to high QOL but low resilience as a result of having to pay for services ($\chi^2=7.4, p=.02$). There were no child nodes below free and paid for health services, so it was considered a terminal node.

The decision tree had an estimated risk of 0.043, with a standard error of 0.008, so the overall percentage of correct classification was 95.7%, suggesting that it is a very good model. Based on a series of interacting factors, the proportion of older people with low resilience ranged from a low of 2% to a high of 36%, with a base rate of 4.3%. The model allowed us to use three pieces of readily available information to

predict variation in the likelihood of low resilience in older people.

Supplementary findings (Supplemental Figure 1): Unweighted predictors associated with the resilience of older people

Supplemental Figure 1 shows that having high self-esteem is associated with having high resilience ($p = .001$). The CHAID analysis continued for older people who had low self-esteem. Approximately 85% of those with low self-esteem had high self-efficacy ($p < .05$), which was related to high resilience.

Discussion

Levels of Resilience and Correlation

Most of the participants in the current study had high resilience (60%), followed by moderate resilience (31%), and low resilience (7.7%). In a previous study in Zimbabwe, 40% of older participants had high resilience, 47% moderate, and 12.8% low resilience. Botswana had more older people with high resilience (60% vs. 42%) and fewer old people with low resilience (7.7% vs. 12.8%) than their Zimbabwean counterparts (Mhaka-Mutepfa et al., 2014). One would expect older people in Zimbabwe to have higher resilience as they have been going through economic hardships for a while, which would therefore lead to the expectation that they have adapted more, which was not the case. The differences might have arisen because the current study did not control the effects of confounding as non-parametric tests were used. Additionally, the mean resilience score (81.3) for the current study was found to be higher than the ones for Zimbabwe (71.8) (Mhaka-Mutepfa et al., 2014), Iran (74.6) (Gheshlagh et al., 2017), and the global meta-analysis mean (75) (Fontes & Neri, 2015), suggesting Botswana had better coping mechanisms. However, it should be noted that the mean score for Iran was for older people with chronic conditions, although this study did not focus only on older people with chronic conditions.

However, the meta-analysis sample was selected from outpatient clinics, and the older people already had health issues (Morete et al., 2018), which could have lowered the mean resilience score. Zimbabwe had the lowest mean resilience score. Nonetheless, the lower, moderately mean score would not be considered catastrophic considering the country's economic woes. Additionally, the sample in Zimbabwe was composed of caregivers (100%), some of whom were experiencing burnout, hence the lower resilience. More than half of the sample in Botswana had high resilience (60%). This could be because the sample was not representative of the Botswana populace. Individuals who never encounter challenges may also experience high well-being regularly but may also be more likely to tumble when they finally do face misfortune (Davydov et al., 2010). According to Davydov et al. (2010), those with good QOL may collapse

when confronted by adversities, hence they have to be prepared beforehand. A study on coping with COVID-19 that has recently been done in Botswana attests to the foregoing (Mhaka-Mutepfa et al., 2022). People's resilience seemed to have been lowered by the anxiety and uncertainties surrounding COVID-19.

Findings from the current study showed a significant negative correlation between depression and resilience just like in previous studies (Hardy et al., 2004; Hwang & Yu, 2019; Lima et al., 2019), although the correlation coefficients among the three studies differed significantly. The difference in correlation coefficients maybe because the samples in the previous studies comprised patients with poor health (e.g., ulcerative colitis and Crohn's disease). Resilience is associated with but not the linear opposite of concepts such as depression, anxiety, or PTSD (Graber et al., 2015; Lee et al., 2013). On the contrary, a study on resilience among older people during the COVID-19 pandemic illustrated that there was no correlation between self-reported health and positive outcomes (Igarashi et al., 2022).

Key Factors Associated With Resilience

The current study established that the key protective and risk factors (QOL, types of services (free), education, depression, and social impairment) were associated with resilience in older people in Botswana. The current findings seem consistent with those of Lima et al.'s (2019) results for the older Brazilian sample ($N = 148$), although selected from an outpatient clinic. The foregoing authors also found positive associations between education, QOL, and resilience and a negative association with symptoms of depression. In the current study, the most significant factor was depression. Higher levels of depression indicated lower levels of resilience. The current findings are also consistent with previous studies (Fontes & Neri, 2015; Gao et al., 2019; Graber et al., 2015; Lee et al., 2013; Hardy et al., 2004; Lima et al., 2019). Lee et al. (2013) and Hardy et al. (2004) found a moderate effect size on resilience to have been derived from the risk factors of depression and social impairment, which is similar to the current study findings, although the effect size for depression was higher in the current study.

Consistent with previous studies in Korea, Zimbabwe, Brazil, and Namibia (Hwang & Yu, 2019; Kalomo et al., 2018; Lima et al., 2019; Mhaka-Mutepfa et al., 2014), the current researchers found that resilience was associated with education, a proxy for SES. Education and income earned, another proxy for SES, are highly correlated (Kalomo et al., 2018; Lima et al., 2019). In a previous Chinese study (Hwang & Yu, 2019) and a Zimbabwean study (Mhaka-Mutepfa et al., 2014), education was not associated with resilience levels, which was not the case in Brouskeli et al.'s (2018) and Gao et al.'s (2019) study, and the current study, in which low education was significantly associated with more depression symptoms. The other previous studies that showed no

relationship did not have links to depression, so maybe that is why they had no impact. Most older people without depression symptoms in the current study also did not have low resilience, suggesting depression was the influencing factor.

Additionally, the educated in Botswana earn better pensions, so they can self-manage themselves, although those with better pensions are a minority compared to the rest of the older population. However, education levels, which are highly correlated with income, can be regarded as one of the long-term determinants of high resilience.

QOL was also significantly associated with resilience in the CHAID model. Some previous researchers claimed that higher levels of QOL serve as a precursor to resilience (e.g., Abreu et al., 2017; Lima et al., 2019), which is similar to current findings. However, the study in Zimbabwe, unlike the previous studies and the current study, did not show any relationship between QOL and resilience, despite adjusting. Nonetheless, most previous researchers reiterate that QOL (inclusive of positive emotions and wellbeing) and mental health facilitate resilience because positive emotions promote analytic thinking and adaptive coping, in addition to maintaining social relationships (Farber & Rosendahl, 2018; Lima et al., 2019). Moreover, a high correlation was found between QOL and resilience in previous studies (Abreu & Rodriguez Blanco, 2017; Färber & Rosendahl, 2018; Rebagliati et al., 2016; Sagone & Caroli, 2014) and the current study.

Further, consistent with previous studies (Rebagliati et al., 2016), very few older people without depression symptoms, with moderate to high QOL, had low resilience, suggesting the significant effects. Thus, positive individuals (with high wellbeing) may, in the long run, be more resilient because they approach situations anticipating better outcomes and tend to evoke more positive responses (Harms et al., 2018; Harms & Wood, 2016). Nonetheless, Harms et al. (2018) argued that researchers should be careful not to conflate resilience and well-being because the abilities experienced by resilient individuals may be self-efficacious, which may impede well-being.

The foregoing authors posit that an individual's resilience may lead to high self-efficacy, but that self-efficacy may emasculate well-being. Hence, such an individual may fail to source the requisite support. Future researchers should investigate Harm et al.'s (2018) findings further. Given that mental health and wellbeing are components of QOL, it is possible that certain precursors of QOL and resilience may undermine the accomplishment of one another. Some items included in well-being outcomes may also be in resilience measures, therefore generating a spurious association between the two concepts (Harms & Wood, 2016). In addition, resilience and related concepts can serve as mediators between stressors and well-being outcomes (Min et al., 2015). All the foregoing disputed similarities and associations may also have impacted the current findings.

Further, consistent with previous research (Mhaka-Mutepfa et al., 2014), both physical and mental health,

although embedded in QOL, were significantly associated with resilience in the current study. Possessing good physical and mental health poised older people for higher resilience scores, suggesting stakeholders should ensure provisions for good health for older people are available. Furthermore, resilience determinants will inform efforts to foster resilience, with the recognition that resilience can be improved on multiple levels (e.g., individual, family, community, and culture) (Lima et al., 2019; Southwick et al., 2014). Older people with high resilience scores will thus be satisfied with most things because they can easily adapt, suggesting building resilience prevents susceptibilities and diminishes risks. Thus, health and wellbeing, including other communal schemes (e.g., social relationships and environment), can be the settings that nurture and reinforce resilience in older people.

Older people without depression symptoms and low QOL were also associated with social impairment (see Figure 1). The focus on physical symptoms (which are embedded in QOL) may lead to major distress and/or problems in functioning (social impairment) as well as anxiety, thereby impacting resilience. The finding is similar to that of Hardy et al. (2004), who also found that social functioning and depression impacted resilience in older people who lived in certain communities in the USA. Social impairments include both physical and social aspects (embedded in wellbeing) and result from shortcomings in several behavioral and relationship domains, for instance, an inability to develop friendships leading to poor social networks and physical dysfunction. Thus, people with low QOL need assistance to mitigate social impairment. People need good social relationships, networks, and accessible environments, especially when older, to improve their social functioning, thereby increasing resilience scores.

Like in a previous study by Rebagliati et al. (2016), social impairment was associated with low resilience in older people in the current study. These findings should be reflected in the design of local health programs for the older population to enhance their abilities to cope with hardships.

Implications for Research, Practice, and Policy

Intuitions amassed from the current study have relevance that goes beyond older people in Botswana. Stakeholders should aim to develop resilience by promoting health and good quality of life in old age. Psychologists make use of cognitive-behavioral therapy (CBT) to change people's perceptions, particularly in instances of mental health (e.g., depression and social impairment) and self-rated QOL. Thus, cognitive reappraisal and CBT enable the person to avoid overreacting to undesirable occasions like paying for services. Additionally, training that incorporates "mindfulness meditation" could increase self-esteem and resilience (Hoare, 2015), which could guarantee improved attainments in coping and health programs. Resilience in older adults should be an opportunity for successful and honorable aging. Joyce et al. (2018) attested to the foregoing by positing that a

combination of CBT and mindfulness techniques appears to have a positive impact on individual resilience.

For instance, stakeholders could also copy best practices through the introduction of resilience-training programs that apply numerous diverse tactics to raise individual levels of resilience (Harms et al., 2018; Southwick et al., 2014), particularly for those with low resilience scores. These programs may include encouraging an enlightened mindset, cognitive reframing, mastery development (Hoare, 2015), planned rehearsal, introspection, and coping strategies (high self-efficacy) (Southwick et al., 2014), which also enhance QOL (wellbeing and social relations). It is noteworthy that determinants of resilience in one community may differ from those in another community (e.g., rural Botswana vs. urban Botswana). For example, inculcating a sense of hope, self-worth, and unity, which leads to good QOL and wellbeing, may be vitally important for instilling and nurturing resilience in an underprivileged community, not one with plenty of resources—especially now that there is supporting evidence on the influence of QOL.

The introduction of programs that aim at helping participants to acquire high wellbeing that they can use when they encounter adversity or problems is a prerequisite. For example, participants may engage in social relations, which is the most effective form of emotion regulation (Hoare, 2015; Southwick et al., 2014). Through social relationships, cognitive reappraisal may take place, and people can change their evaluation of an incident and perceive it differently, thereby changing their initial feelings (Fisher et al., 2013; Hoare, 2015), which increases confidence and wellbeing, and therefore resilience. This could be accomplished by creating day-care centers where older people could socialize with others.

The World Health Organization (2019) recently launched a digital application known as the WHO ICOPE Handbook App which aids health and social workers to deliver improved care for older people within a primary health care setting. The app offers useful guidelines for addressing significant circumstances, illnesses, and disorders (e.g., depression and social impairment), for instance, mobility limitations (physical impairment) and intellectual degeneration. This may be a result of vision and hearing losses (Bainame et al., 2014), as well as other psychological and social impairments. This app should be adopted by all stakeholders as it will fast-track the training of health and social workers to address the diverse needs of older people efficaciously, which may lead to high resilience.

Policies that affect the health and resilience of older people should also be developed to increase success for everyone in the long term, which is one of the most important foci of the current government and sustainable development goals (SDG) that are in line with the WHO (2020) Decade for Healthy Ageing aspirations. Additionally, levels of resilience in older people were established. The findings may help stakeholders, particularly government and civil society, work on addressing the determinants of resilience, facilitating good

health, lowering health costs, and promoting successful aging. The stakeholders may also enforce the implementation of the policies to build resilience in older adults. Furthermore, specific programs that enhance determinants of health may be introduced to build and mend resilience. Interventions to augment resilience can be administered before, during, or after stressful or traumatic situations (Southwick et al., 2014), especially now because of the pandemic and civil unrest.

Limitations and Suggestions for Future Research

The cross-sectional nature of the study instituted a limitation. Ideally, a more comprehensive and elucidatory depiction of the relationships among the variables in this study could be revealed by a large-scale longitudinal study follow-up of older people through various stages of their lives. In addition, the findings in the current study may not apply to other districts in Botswana, particularly the west, where the San (Bushmen) reside. This group of people has not been acculturated and are still skilled hunter-gatherers, making their culture very different from others. A similar sample from the north would have allowed greater generalizability of results. Other limitations are the use of nonparametric tests and the use of CHAID analysis using SPSS, which are ordinarily less powerful than corresponding parametric tests when the normality assumption holds. However, despite the limitations, the study established the most appropriate key protective and risk factors associated with the resilience of older people in Botswana.

While the use of the snowballing technique has its disadvantages; the representativeness of the sample is not assured. Additionally, sampling bias may be a problem. For instance, the sampling may gravitate towards those with more factors associated with resilience, such as larger social networks, better social engagement, and support networks.

Future research with longitudinal designs will go a long way toward elucidating whether the reported associations fluctuate across time. Furthermore, future research could focus on the role of respondents' resilience in the past background as well as the role of their past overall well-being. The role of clinical disorders on resilience should be further examined in other SSA countries as the prevalence of morbidities was found to be high in Botswana, despite the limitations that come with calculating prevalence on a limited convenience sample. Epidemiological information is also necessary as it will help stakeholders plan and evaluate strategies to prevent low wellbeing, QOL, and/or low resilience.

Conclusion

The current study adds findings to the few studies that have investigated the resilience of older people in SSA. Thus, just like WHO (2019) claims, factors such as where we live, the state of our environment, education level, and our relations

with others, all have substantial influences on resilience and well-being, whereas access to and use of health care services often have less of an impact. Older people with no depression symptoms, higher education, no social impairments, and good quality of life, including wellbeing and receiving free services, were found to have high resilience. Health and wellbeing (QOL) were also found to be significantly associated with resilience; therefore, they should be nurtured. Thus, fostering resilience promotes healthy family and community environments. Stakeholders should take cognizance that longevity brings its prospects, not only for older people and their families but also for societies. Additional years afford older people an opportunity to pursue new activities (e.g., education, a new career, or an ignored passion). The opportunities are thus contingent on one's health, wellbeing, and resilience.

Resilience can be learned and should be embedded in the sociocultural context in which older people in Botswana live. Older people should be involved in civil society activities to shift their focus from their adverse circumstances. The collective nature of Botswana life should encourage older people's participation in community activities that foster purpose and personal meaning and a sense of belonging and acceptance.

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Supplemental Material

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