Profiling ageing in South Africa in the era of the coronavirus pandemic

Maharaj, P and Dunn, S*

Pranitha Maharaj is a Professor and DSI/NRF South African Chair in Economic Development at the School of Built Environment and Development Studies, University of KwaZulu-Natal, Durban, South Africa.

Shanaaz Dunn is a researcher at the School of Built Environment and Development Studies, University of KwaZulu-Natal, Durban, South Africa

School of Built Environment and Development Studies
University of KwaZulu-Natal
Durban
4041

*Corresponding author: RademeyerS@ukzn.ac.za

Abstract

As South Africa has one of the largest portions of older people in the continent there has been growing interest in population ageing; especially during the global COVID-19 pandemic which has had a tremendous impact on older people. Older people are generally an at-risk population however, the pandemic has elevated their vulnerability. The aim of this study is to shed insights into the situation of older people in the era of COVID-19 in South Africa. This study uses secondary data from the 2020/2021 South African National Income Dynamics Study – Coronavirus Rapid Mobile Survey. The study sample consists of people aged 60 years and older. The results suggest that there was an increase in awareness on COVID-19 among older people and most decided to adopt risk-reducing behaviour, specifically the use of face masks. At the beginning of the national lockdown most older people believed that they could contract the virus however, this changed as the year progressed where minor fluctuations were observed. Further analysis revealed those with higher levels of education have increased odds of adopting risk reducing strategies. The majority of older people indicated that they would be vaccinated once the vaccine was available however, a few indicated that they would not. The reasons for those who did not want to be vaccinated varied; however, most were uncertain and/or fearful of the side effects. The results of the study highlight important conclusions that can be useful for policymakers who intend to strengthen vaccination campaigns and promote resilience and solidarity during the pandemic. The findings highlight that it is imperative to continually develop and improve policy responses to enhance the well-being of older people at present and in the future.

Keywords: *COVID-19, South Africa, older people.*

Introduction

In Africa, there has been an increasing focus on population ageing because in the decades to come the continent will have one of the largest number of older people across the world. In sub-Saharan Africa, life expectancy increased steadily from 1990 to 2019 where it was estimated at 61.1 years (United Nations, 2019). Most regions in Africa are witnessing a sharp increase in the older population as the continent will constitute approximately 11% of the world's older people (United Nations, 2017). Estimates project a threefold increase from 2017 to 2050, from 69 million to 226 million older people (United Nations, 2017). While these projections are remarkable indicators of progression and development, the sub-Saharan African region is unfavourable for elderly people due to the lack of assistance, care and policy initiatives which aid in supporting them (da Silva Francisco, 2017). In addition to this, the African continent has a myriad of urgent needs and issues affecting older people which are often overlooked and given minimal attention and priority because emphasis is on the demographic dividend and the youthful population (Aboderin, 2017). As a result, many people are growing older amidst uncertainty for their future.

While it is remarkable to have the population living to older ages it does come with its own unique challenges (Maharaj, 2020). Due to physiological change, many people experience a deterioration in physical and mental health and their quality of life is affected (Amarya et al., 2018). This results in the inability to perform certain functions such as walking, hearing, seeing, remembering and concentrating as well as self-care. Older people also become more vulnerable because of their loss of independence which is an outcome of their diminished physical ability (Giannouli et al., 2016). This is a concern because many older people from low-income countries are vulnerable to poverty and adversely suffer from hunger especially in poorer contexts where there is minimal or no social assistance and support and under conditions of limited access to healthcare (McKay and Lawson, 2003; OECD, 2003; Maharaj, 2020).

Apart from the health and morbidity outcomes which many older people are subject to, many nations are struggling with social and economic shocks due to the COVID-19 pandemic. This pandemic has brought about widespread suffering and economic harm especially among the lesser developed countries of the world (Mehtar et al., 2020). Older people are especially vulnerable because of their elevated risk of developing severe illness if they contract the disease due to existing co-morbidities and other underlying health conditions (Shahid et al., 2020). Over the course of the pandemic, evidence has emerged globally which suggests that the risk of severe illness and death for those with underlying health conditions, especially among older people, is particularly high (HelpAge International, 2020b). The conditions under which older people are exposed to during the pandemic have worsened in the absence of family and social support. The pandemic has exposed widespread inequalities still existent across society where there are distinct racial and regional discrepancies. However, it is apparent that no other population group has been more vulnerable than the older community. Although the immediate concern for this group is mortality, the COVID-19 crisis is likely to have a profound effect on other factors such as mental health, social disruption, contact and support as well as poverty and hunger (HelpAge International, 2020a).

Findings from HelpAge International (2020b) indicates that older people's health and wellbeing are disproportionately at risk. In many regions in Africa the highest death rates are observed in the oldest age groups. In addition to this, restrictive measures introduced by many countries in the African region in response to the COVID-19 pandemic created conditions which are likely to increase the risk of violence, abuse, and neglect of older people, particularly those who have previously experienced this prior to the pandemic. Many older people suffered food and income security and their situations worsened due to inadequacy of support provided by humanitarian agencies and governments. Many older people have had their dignity and rights violated because they had been exposed to existing challenges which were heightened during this period (HelpAge International, 2020b).

Suffering was widespread however, there were many efforts initiated at the local and government level to assist older people. Many African countries relied on humanitarian relief as they have minimal or no social support available. During this time, social support and financial support were of paramount importance. South Africa is one of the few countries in the continent which has a unique old age grant or pension system which is not available in most other African countries. This social support system, is available to people aged 60 years and older and is instrumental in ensuring improved health and wellbeing of older people and it serves as a means to offset the consequences which lower-income individuals encounter (Etinzock and Kollamparambil, 2019). During the nation-wide lockdown, the South African government scaled up their social support systems by initiating a significant package of social and economic measures to address the devastating economic consequences which many were suffering from due to the country's lockdown. This support included a significant increase in the value of existing social grants, a new grant and delivery of food parcels to poor households. However, many continue to suffer the ongoing, devastating consequences which is likely to have long-term implications.

Understanding perceived risk and behaviour among people aged 60 years and older is a step towards reducing mortality especially among the most vulnerable. The overall aim of this study is shed insights into older people's risk reducing strategies employed to protect against COVID-19. This will provide key insights into the current context in which people are ageing amidst the ongoing pandemic as well provide evidence which can be useful to promote vaccine uptake and address vaccine hesitancy; both are key towards combatting the virus. The objective of the study is achieved through analysing data from the period 2020-2021 from the South African National Income Dynamics Study – Coronavirus Rapid Mobile Survey (NIDS-CRAM).

Methodology

This study is situated in the context of South Africa which has one of the most rapidly ageing populations in Africa (United Nations, 2019). Estimates from Statistics South Africa (2014) reveals that the number and proportion of people aged 60 years and older relative to those aged 59 and younger has increased over the period 1996 to 2011. The number has risen from 2.8 million in 1996 to 4.1 million in 2011. Further projections indicate that the older population will continue to increase (Statistics South Africa, 2014). As of 2021, findings from Statistics South Africa (2021) reveals that approximately 9.2% (5.51million) of the population are 60 years or older. These estimates are a result of the growth rate of the population aged 60 and older which is accelerating at double the rate in comparison to those under age 60 (Statistics South Africa, 2018). Key demographic characteristics of South Africa's ageing population indicate that the composition and distribution of older people are significantly diverse in terms of gender, population group, education, socio-economic status and geographical region (Statistics South Africa, 2014).

This study specifically analyses data from the NIDS-CRAM which is a broad nationally-representative panel survey of approximately 7000 South African individuals, aged 18 years and older from a sub-sample of the National Income Dynamics Survey (NIDS), wave 5 which was conducted in 2017. The same people are contacted every few months and asked a range of questions about their employment, household welfare, receipt of grants, as well as their knowledge and behaviour related to COVID-19. There are five waves of the study planned during 2020/2021. The aim of the survey is to provide periodic, nationally-representative data on key outcomes (Ingle, Brophy & Daniels, 2020) and to investigate the social and economic impact of the national lockdown which was implemented in March 2020 due to the on-going global pandemic (Ingle, Brophy & Daniels, 2021). The same people are contacted every few months and asked a range of questions.

There are five waves of the survey which has been executed and released for the period 2020/2021, which was conducted during different lockdown levels across the country (Ingle, Brophy & Daniels, 2021). The rationale for using the five cross-sectional waves is to highlight key changes in circumstances given the different levels of lockdown across the country. Wave 1 focused on measuring outcomes in April 2020, when South Africa first initiated a nation-wide lockdown on alert level 5 where almost all activity was suspended except for those categorised as essential services. Wave 2 focused on measuring outcomes in June 2020, when South Africa was in a less restrictive lockdown phase – alert level 3. During this level more economic activity was allowed to resume. Wave 3 measured outcomes in October 2020 when South Africa was experiencing alert level 1. During this stage almost all economic activity resumed with certain restrictions, guidelines and protocols that needed to be adhered to. Waves 4 and 5 provides a more recent snapshot of measures. These two waves of the survey focused on measures in 2021.

In this study, an older person is defined as one who is 60 years and older. There is no universal definition of an elderly person and most vary in terms of age range, quality of life, and varying levels of function or capability (Sabharwal et al., 2015). Generally, old age is said to begin between 60 – 65 years (Gorman, 2000). The age range for this study was selected because in the South African context any person that is 60 years and older is eligible for an old age grant and it is generally the age at which people are defined as elderly (Gorman, 2000). The measures and variables which this study is interested in are demographics, socio-economic and health. The covariates include sex, population group, level of education and access to social grants. Other behavioural variables such as the use of face masks in public and health-related outcomes such as vaccine uptake were also included in the analysis. Measures used in the analysis were coded into nominal and ordinal level variables. For the logistic regression, the measures were coded into binary variables. To correct for non-response the design weights of each cross-sectional survey were applied to derive at representative, unbiased estimates of the population. This study presents descriptive statistics in the forms of frequencies and cross-tabulations to explore and examine the variables of interest among older people. Inferential statistics were also produced to examine the relationship between change of behaviour and specific individual-level determinants. The analysis is conducted on STATA version 15. The data for NIDS-CRAM is freely available for download and use on the DataFirst Open Data Portal to registered users. The data is anonymized and all responses are coded and matched to the respondent.

Results

Profiling older people

The study population includes all males and females aged 60 years and older. There were over 800 people aged 60 years and older in the different waves (wave 1 N=978, wave 2 N= 805, wave 3 N= 915, wave 4 N=845, wave 5 N=880). The study sample across all the waves of the survey had distinct demographic characteristics which remained largely unchanged except for a few. In wave 1, there are more older women (59.72%) in comparison to men (40.28%). Racial differentials show that the majority of older people in the sample are Black African (61.31%). In wave 2 and 3 many of the demographic characteristics remained the same with slight variations. In wave 4, there was almost an even number of men (48.02%) and women (51.98%) in comparison to that which was observed in the previous waves. Racial differentials remained similar with Black African constituting the majority of older people. The latest survey estimates, wave 5, have similar characteristics as the previous ones. Interestingly, there were more women (59.60%) in comparison to men (40.40%). These results are presented in Table 1 below.

Table 1: Demographic profile of older people

Demographic Characteristic	**Wave 1 N (%)**	**Wave 2 N (%)**	**Wave 3 N (%)**	**Wave 4 N (%)**	**Wave 5 N (%)**
	N = 978	**N = 805**	**N = 915**	**N = 845**	**N = 880**
Age Category					
60-69	536 (61.50)	446 (62.31)	528 (61.68)	493 (64.42)	510 (63.06)
70-79	321 (29.64)	266 (28.92)	286 (29.45)	264 (27.38)	273 (27.83)
80+	121 (8.86)	93 (8.77)	101 (8.87)	88 (8.20)	97 (9.11)
Total	**978 (100.00)**	**805 (100.00)**	**915 (100.00)**	**845 (100.00)**	**880 (100.00)**
Gender					
Male	331 (40.28)	273 (40.22)	310 (41.12)	292 (42.11)	298 (40.40)
Female	645 (59.72)	532 (59.78)	605 (58.88)	553 (57.89)	582 (59.60)
Total	**976 (100.00)**	**805 (100.00)**	**915 (100.00)**	**845 (100.00)**	**880 (100.00)**
Population group					
Black African	746 (61.31)	599 (57.81)	709 (64.33)	636 (59.44)	666 (60.65)
Coloured	94 (10.42)	81 (11.37)	76 (10.15)	78 (10.06)	85 (9.07)
Indian/Asian	17 (4.06)	13 (3.61)	11 (2.52)	10 (4.09)	10 (2.58)
White	121 (24.20)	112 (27.22)	119 (23.00)	121 (26.41)	119 (27.71)
Total	**978 (100.00)**	**805 (100.00)**	**915 (100.00)**	**845 (100.00)**	**880 (100)**
Marital status					
Married	-	522 (64.51)	618 (66.45)	-	560 (61.58)
Unmarried	-	281 (35.49)	297 (33.55)	-	320 (38.42)
Total	**-**	**803 (100.00)**	**915 (100.00)**	**-**	**880 (100.00)**

Source: own calculations from NIDS-CRAM waves 1-5, weighted percentages

Details pertaining to the socio-economic profile of older people are presented in Table 2 below. As with the demographic characteristics, most of the socio-economic factors remained similar with slight variations. Examination of education differentials in the first wave suggest that most older people have at least a secondary level education (53.31%) in comparison to only a few who have no education (9.65%). The findings also indicate that the majority of older people are unemployed (82.26%) in comparison to those that are currently employed (17.74%). The majority of older people were accessing the old age grant however, not all older people access the old age pension. In wave 2 much of the characteristics remained the same. The most significant changes were observed in employment status and type of grant received. A smaller percentage of older people were employed in wave 2 (15.02%), which is a decline from the estimates observed in wave 1 (17.74%). Additionally, more older people accessed the old age grant in wave 2 (91.60%) than in wave 1 (87.04%). Educational differentials remained similar where the majority of older people have a secondary level education, more than 50% across all waves. More older people were unemployed (86.90%) in comparison to the estimates observed in the previous waves. Additionally, in wave 4 more older people were now accessing the old age grant (94.22%). More than 85% of all older people lived in a house or flat in 2020 and 2021. The majority had access to running or tap water inside their yard or dwelling. However between 14-17% of older people did not access running water in their dwelling or yards. This is a major concern as water is a basic, essential need and it was recommended that washing of hands with soap and water was a prominent risk-reducing strategy. Most older people had access to electricity in their dwelling with less than 2% in each wave suggesting that they did not.

Table 2: Socio-economic profile of older people

Socio-economic Characteristic	Wave 1 N (%)	Wave 2 N (%)	Wave 3 N (%)	Wave 4 N (%)	Wave 5 N (%)
	N = 978	**N = 805**	**N = 915**	**N = 845**	**N = 880**
Old age grant recipient					
Yes	530 (87.04)	566 (91.60)	540 (85.60)	529 (94.22)	570 (91.61)
No	85 (12.60)	53 (8.40)	85 (14.40)	33 (5.78)	51 (8.39)
Total	**615 (100.00)**	**619 (100.00)**	**625 (100.00)**	**562 (100.00)**	**621 (100.00)**
Education					
None	140 (9.65)	114 (8.89)	138 (10.91)	115 (8.26)	123 (9.58)
Primary	453 (37.22)	364 (34.84)	395 (33.80)	370 (32.37)	387 (32.70)
Secondary	361 (53.13)	321 (56.26)	362 (55.29)	347 (59.37)	358 (57.72)
Total	**954 (100.00)**	**799 (100.00)**	**895 (100.00)**	**832 (100.00)**	**868 (100.00)**
Employment status					
Unemployed	819 (82.26)	720 (84.98)	783 (83.53)	758 (86.90)	770 (84.38)
Employed	134 (17.74)	80 (15.02)	127 (16.47)	87 (13.10)	99 (15.62)
Total	**953 (100.00)**	**800 (100.00)**	**910 (100.00)**	**845 (100.00)**	**869 (100.00)**
Dwelling type					
House/flat	790 (86.12)	640 (86.28)	750 (87.70)	701 (88.56)	708 (87.03)
Traditional house/mud hut	143 (9.26)	125 (9.79)	116 (7.90)	91 (6.05)	114 (7.82)
Informal house/shack	33 (3.22)	22 (2.76)	24 (2.25)	19 (2.89)	21 (2.83)
Other	9 (1.39)	16 (1.17)	24 (2.14)	28 (2.50)	27 (2.33)
Total	**975 (100.00)**	**803 (100.00)**	**914 (100.00)**	**839 (100.00)**	**870 (100.00)**
Piped/tap water inside house/dwelling or yard?					
Yes	748 (84.96)	602 (84.19)	667 (82.76)	626 (85.45)	638 (84.60)
No	229 (15.04)	203 (15.81)	240 (17.24)	208 (14.55)	225 (15.40)
Total	**977 (100.00)**	**805 (100.00)**	**907 (100.00)**	**834 (100.00)**	**863 (100.00)**
Access to electricity					
Yes	949 (98.50)	789 (98.60)	897 (98.59)	820 (98.69)	852 (98.83)
No	29 (1.50)	16 (1.40)	17 (1.41)	18 (1.31)	17 (1.17)
Total	**978 (100.00)**	**805 (100.00)**	**914 (100.00)**	**838 (100.00)**	**869 (100.00)**

Source: own calculations from NIDS-CRAM waves 1-5, weighted percentages

Apart from the health implications which the virus has inflicted on older people, they may have suffered loss of income, some from informal generating activities whereas others suffered this loss at the household level. As a result, many individuals and families were subject to hunger and this negatively affected their health and well-being. While there was some support from non-government organisations (NGOs) and the state, many continued to suffer daily. More than half (56%) of the study sample in wave 1 suggested that their household income did not decrease. However, those who did suffer from income loss at the household level experienced this because income from employment and businesses as well as from government grants and family and friends decreased. These results are displayed in Table 3 below.

Table 3: Source of household income that decreased, wave 1

Source	Wave 1 N (%)
Income from employment	66 (8.65)
Income from business	30 (5.06)
Government grants	146 (13.59)
Money from friends or family	26 (2.86)
Other	21 (3.86)
Household had no income prior to lockdown	78 (9.90)
Income did not decrease	566 (56.90)
Total	**933 (100.00)**

Source: own calculations from NIDS-CRAM wave 1, weighted percentages

From wave 2 onwards respondents were asked if their main source of income had changed in the past four weeks. The results varied; overall, the majority of older people indicated that the income in their household remained the same. Interestingly, in wave 2 more older people indicated that their household income increased in the last 4 weeks (40.52%). This could have been attributed to a number of reasons such as the provision of more funds for social support and grants across the country or donations from NGOs, family members and friends. During waves 3 and 4 there was minimal increase in household income (7.78% and 3.37%, respectively); however this increased to 29.68% in wave 5. These results are displayed in Table 4 below.

Table 4: Change in household main source of income, waves 2-5

In the past 4 weeks, has this households main income source changed?	Wave 2 N (%)	Wave 3 N (%)	Wave 4 N (%)	Wave 5 N (%)
Increased	384 (40.52)	76 (7.78)	21 (3.37)	291 (29.68)
Decreased	56 (10.40)	459 (36.27)	197 (18.97)	92 (9.35)
Stayed the same	323 (49.08)	310 (56.15)	589 (77.66)	460 (60.97)
Total	**763 (100.00)**	**845 (100.00)**	**807 (100.00)**	**843 (100.00)**

Source: own calculations from NIDS-CRAM waves 2-5, weighted percentages

Hunger and food insecurity

From the onset of the global pandemic, hunger and food insecurity have become major concerns. The pandemic continues to have devastating effects on global hunger and poverty; especially among the poorest and most vulnerable. The majority of older people; which was above 60% in all 5 waves, suggested that they did run out of money to buy food in the specified months. However, of those who did, the highest observed estimates were in April (39.93%) and October 2020 (39.35%). From wave 2 onwards older people lived in a household where at least one family member experienced hunger. Most family members who reside with older people in a household experienced hunger between 1-2 days in the past week and less than 15% in each wave experienced hunger everyday. These results are displayed in Table 5 below.

Table 5: Access to food and hunger

	Wave 1 N (%)	**Wave 2 N (%)**	**Wave 3 N (%)**	**Wave 4 N (%)**	**Wave 5 N (%)**
Ran out of money to buy food	**In April 2020**	**In June 2020**	**In October 2020**	**In January 2021**	**In March 2021**
Yes	444 (39.93)	297 (31.92)	429 (39.35)	373 (37.06)	384 (36.99)
No	524 (60.07)	504 (68.08)	482 (60.65)	469 (62.94)	489 (63.01)
Total	**968 (100.00)**	**801 (100.00)**	**911 (100.00)**	**842 (100.00)**	**873 (100.00)**
In last 7 days, how often did your family go hungry					
Never	12 (3.70)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
1-2 days	88 (31.14)	48 (38.20)	57 (24.60)	52 (49.41)	59 (42.32)
3-4 days	54 (24.64)	49 (28.44)	68 (43.42)	42 (22.38)	52 (39.89)
Almost everyday	54 (28.81)	26 (21.26)	34 (21.19)	26 (13.56)	16 (7.75)
Everyday	22 (8.71)	19 (12.10)	32 (10.78)	23 (14.65)	19 (10.05)
Total	**230 (100.00)**	**142 (100.00)**	**191 (100.00)**	**143 (100.00)**	**146 (100.00)**

Source: own calculations from NIDS-CRAM waves 1-5, weighted percentages

Change of behaviour

Table 6 below presents statistics on the behaviour of older people. Results were analyzed from each separate wave as a cross-section to document and highlight any notable and significant change. Many older people suggested that they did change their behaviour (over 90% across all waves). When asked how they changed their behaviour the majority of older people across the different waves suggested that they wash their hands, sanitize and disinfect their homes (63.57%, 52.21%, and 57.38% from waves 1, 2 and 3, respectively). More older people started to use face masks as the year progressed. This increased from 8.42% in wave 1 to 24.55% in wave 3. This then declined slightly in wave 4 (20.69%) and thereafter increased by almost 10% in wave 5 (29.28%). The category "other" included responses for those who took the flu vaccine, stopped drinking and smoking, coughed into their elbow, ate garlic and adopted more healthy diets. Less than 1% of older people in each of the waves reported not adopting any of these strategies. In waves 4 and 5 the percentage of older people who washed and/or sanitized their hands declined to 55.71% and 46.19% respectively. The reason for the decline is uncertain however, many may have become complacent and are experiencing fatigue in adhering to protocols; thus, contributing to this observed trend.

Table 6: Risk reducing behaviour among people aged 60 years and older

Have you changed your behaviour since learning of the virus	**Wave 1 N (%)**	**Wave 2 N (%)**	**Wave 3 N (%)**	**Wave 4 N (%)**	**Wave 5 N (%)**
Yes	797 (91.41)	789 (99.96)	911 (99.75)	842 (100.00)	874 (99.66)
No	165 (8.59)	1 (0.41)	3 (0.25)	0	3 (0.34)
Total	**962 (100.00)**	**790 (100.00)**	**914 (100.00)**	**842 (100.00)**	**877 (100.00)**
How have you changed your behaviour					
Wash hands/sanitize/disinfect	546 (63.57)	462 (52.21)	541 (57.38)	445 (55.71)	436 (46.19)
Avoid contact/social distance	173 (26.72)	147 (25.96)	127 (13.43)	145 (18.52)	149 (18.87)
Wear facemasks	65 (8.42)	146 (16.34)	208 (24.55)	191 (20.69)	247 (29.28)
Other	10 (1.29)	25 (4.54)	35 (4.39)	61 (5.09)	42 (4.67)
Not doing anything	0	10 (0.95)	3 (0.25)	0	3 (0.99)
Total	**794 (100.00)**	**790 (100.00)**	**914 (100.00)**	**842 (100.00)**	**877 (100)**

Source: own calculations from NIDS-CRAM waves 1-5, weighted percentages

Risk perception

Risk reducing strategies is an important means of combatting the virus and ensuring the health and safety of the population. One of the main objectives of this study was to explore the risk reducing strategies among older people. Respondents were asked if they could avoid getting the virus. The results indicate that the majority of older people in wave 1 suggested that they were at risk (77.43%) whereas a smaller percentage suggested that they were not (8.91%) and approximately 13.67% were not sure. This increased immensely in waves 2 and 3 where more than 86% of older people suggested that they could avoid getting the virus whereas the minority, which was less than 14%, suggested that they could not. These estimates declined in wave 4 where less older people (79.8%) believed that they could avoid getting the virus in comparison to those that did not (11.1%). There were also a few older people who did not know if they could avoid contracting the virus (9.1%). In wave 5 this increased slightly from the previous wave to 82.5% of older people who suggested that they could avoid getting the virus. These results are displayed in Table 7 below. The fluctuations in these perceptions may have been attributed to a number of factors such as the current level of infections, access to vaccines and the state of the social and economic position of their families and the country.

Table 7: Belief that you can avoid contracting the virus among people aged 60 years and older

	Wave 1 N (%)	Wave 2 N (%)	Wave 3 N (%)	Wave 4 N (%)	Wave 5 N (%)
Yes	737 (77.43)	598 (86.07)	727 (86.05)	663 (79.84)	712 (82.46)
No	132 (13.77)	95 (13.93)	103(13.59)	96 (11.05)	89 (11.19)
Do not know	109 (8.91)	0	0	85 (9.11)	79 (6.35)
Total	**978 (100.00)**	**693 (100.00)**	**830 (100.00)**	**844 (100.00)**	**880 (100.00)**

Source: own calculations from NIDS-CRAM waves 1-5, weighted percentages

Risk-reducing strategies

From waves 2 to 5 respondents were asked about their use of face masks. Face masks are recommended as an effective means of preventing the spread of the virus in public spaces (CDC 2021). Overall, the majority of people aged 60 years and older indicated that they used a face mask when they went out in public in the past 7 days however, the estimates were slightly higher for wave 2 in comparison to wave 3 (91.95% and 95% respectively). Those that did not go out into public did not use a face mask. Others did not use a face mask because they indicated that they did not have one (3.31% for wave 2) and another suggested that they did not need one (5.71% for wave 3). In wave 4 less older people wore a face mask in public in the past seven days however, this could be closely related to those who indicated that they did not go out in public. In wave 5 the results were similar to those observed in wave 2. A sizeable number of older people also indicated that they did not go out in public over the last seven days. Mental health and well-being has been raised as a serious concern over the past two years. Many were forced to stay indoors due to the national lockdown and many felt lonely, isolated and depressed. These results are displayed in Table 8 below.

Table 8: Use of face masks among people aged 60 years and older

In the last 7 days have you worn a face mask or covering when going out in public?	Wave 2 N (%)	Wave 3 N (%)	Wave 4 N (%)	Wave 5 N (%)
Yes	729 (91.95)	860 (95.00)	761 (89.61)	805 (92.06)
No	18 (1.05)	6 (0.64)	5 (0.20)	2 (0.43)
I have not been out in public	54 (7.00)	48 (4.36)	78 (10.19)	73 (7.51)
Total	**801 (100.00)**	**914 (100.00)**	**844 (100.00)**	**880 (100.00)**
Why have you not been wearing a face mask?				
I do not have one	1 (3.31)	-	-	-
I do not need it	-	1 (5.71)	-	-
I did not go out	12 (57.26)	4 (94.29)	4	1 (50.00)
Other	5(39.43)	-	-	1 (50.00)
Total	**18 (100.00)**	**5 (100.00)**	**4 (100.00)**	**2 (100.00)**

Source: own calculations from NIDS-CRAM waves 2-5, weighted percentages

COVID-19 Vaccine: Hesitancy and uptake

Adhering to COVID-related protocols, rules and regulations is vital for combatting the disease and minimizing the social, health and economic consequences. The vaccine which has become freely and publicly available has offered many a chance at reducing their risk of hospitalization and suffering severe complications if the virus is contracted. Understanding older people's perception and behaviour during the pandemic is an important way to explore their health-seeking behaviour as well as assess issues of vaccine hesitancy and uptake. In waves 4 and 5 respondents were asked about their decisions to take the vaccine if it became available as well as the reasons for their choice. The majority of older people strongly agreed that they would take the vaccine if it was available (63%). Less than 11% strongly disagreed that they would take the vaccine and 10.7% did not know if they would get the vaccine if it became available. These estimates are displayed in Table 9 below.

Table 9: Vaccine uptake, wave 4

If vaccine is available, would I get it?	N (%)
Do not know	101 (10.70)
Strongly agree	504 (63.00)
Somewhat agree	81 (9.70)
Somewhat disagree	34 (5.70)
Strongly disagree	120 (10.90)
Total	**840 (100.00)**

Source: own calculations from NIDS-CRAM wave 4, weighted percentages

In wave 4, older people were also asked about the main reasons that they would not take the vaccine and their responses varied. The majority of older people were concerned about the side effects (39.40%). Among the other most prominent reasons were concerns about how safe the vaccine would be (13.60%), and because many did believe that it would be effective (11%). A few of the respondents suggested that they did not trust the government (4.60%) and others were against the vaccine in general (5.70%). These responses are displayed in Table 10 below.

Table 10: Reasons for vaccine uptake, wave 4

Main reason I would not get the vaccine	**N (%)**
Do not know	3 (1.30)
Worried about side effects	48 (39.40)
Do not think it will be effective	17 (11.00)
Not enough at risk from COVID-19	8 (2.30)
Against vaccines in general	12 (5.70)
Do not have time	1 (0.30)
Other	33 (21.00)
Not sure how safe it is / am afraid	20 (13.60)
Do not trust the government	2 (4.60)
Do not trust vaccine/s	5 (0.90)
Total	**149 (100.00)**

Source: own calculations from NIDS-CRAM wave 4, weighted percentages

During the first half of 2021 vaccine rollouts had begun and were available for healthcare workers and older people. Interestingly, the majority of older people were not vaccinated (97.52%). A large percentage of older people (41.60%) suggested that they would get vaccinated if a trusted community leader had been vaccinated and remained healthy. Many did not believe that the vaccine is safe (48.41%) and others did not know (35.50%). When asked for the reasons that the respondents believed that the vaccine was unsafe, many indicated that the vaccine testing was rushed so they were uncertain (21.20%). These estimates are displayed in Table 11 below.

Table 11: Vaccine hesitancy

Vaccine: uptake, perceptions and hesitancy	N (%)
Received COVID-19 vaccine	
Yes	17 (2.48)
No	861 (97.52)
Total	**878 (100.00)**
Willing to be vaccinated if trusted community leader was and kept healthy?	
Yes	115 (41.60)
No	89 (40.35)
Do not know	33 (18.05)
Total	**237 (100.00)**
Do you believe that the vaccine is safe	
Yes	98 (48.40)
No	50 (16.10)
Do not know	87 (35.50)
Total	**235 (100.00)**
Why believe vaccine unsafe/harmful?	
The vaccine is part of a government plot to harm/control me	8 (11.70)
The vaccine is part of a global plot to harm/control me	6 (2.70)
Vaccines are fake and are just being sold for profit	2 (3.50)
The vaccine contents will change my DNA	4 (2.60)
Vaccines go against my religious beliefs	3 (2.30)
Vaccine testing was rushed so we cannot be sure that they are safe	16 (21.20)
Other	53 (55.90)
Total	**92 (100.00)**

Source: own calculations from NIDS-CRAM wave 5, weighted percentages

Determinants of behaviour change

An adjusted logistic regression was employed to investigate the determinants of behaviour change among the sample of people aged 60 years and older. The constant was highly significant for all models. The dependent variable was coded as a binary outcome: 0 – no change of behaviour and 1 – change of behaviour; which was based on adopting specific risk-reducing strategies during the pandemic. Independent variables of interest were also coded into binary outcomes. The results are displayed in the table below. In waves 1 and 3 the oldest segment of the study sample (80 years and older) have reduced odds of changing their behaviour in comparison to the reference category (60-79 years). There was no effect observed in wave 2. Population group was a significant determinant in waves 1 and 2 where Non-Black Africans (inclusive of Indians, Coloureds and Whites) had reduced odds of changing their behaviour in comparison to Black Africans. In waves 1 and 2 the estimates suggest that men were more likely to change their behaviour however, in wave 3 women had two times the odds of changing their behaviour. The results indicate that those with some form of education (primary or higher) have increased odds of changing their behaviour in comparison to those that had no education. These results are displayed in Table 12 below.

Table 12: Logistic regression of the determinants of behaviour change among people aged 60 years and older

		Wave 1	Wave 2	Wave 3
Characteristic	**Sub-category**	**OR [95%CI]**	**OR [95% CI]**	**OR [95% CI]**
Age category	60-79 years	**1.00**	**1.00**	**1.00**
	80 and above	0.75 [0.45-1.25]	1.00	0.10 [0.01-1.77]
Population group	Black African	**1.00**	**1.00**	**1.00**
	Non- Black African	0.58** [0.40-0.85]	0.14* [0.03-0.56]	0.25 [0.01-9.81]
Gender	Male	**1.00**	**1.00**	**1.00**
	Female	0.93 [0.65-1.34]	0.72 [0.18-2.86]	2.04 [0.12-35.37]
Education	None	**1.00**	**1.00**	**1.00**
	Primary or higher	1.33 [0.82-2.16]	1.42 [0.16-12.32]	1.25 [0.03-48.76]
N		**936**	**695**	**895**
Log likelihood		**-423.43**	**-47.91**	**-12.72**
Constant		4.78***	159.52***	801.64***

Significant at p<0.001***, p<0.01**, p<0.05*
Source: own calculations from NIDS-CRAM waves 1-3, weighted estimates

Discussion

Across the world, discussions and debates on the economic and social implications of population ageing is intensifying among policymakers and public and private sectors because the novel COVID-19 pandemic has presented unique challenges that require immediate attention. Efforts to understand and respond to key challenges and opportunities of combatting the novel coronavirus pandemic, especially among older people is key for overcoming the existing challenges of the pandemic (HelpAge International, 2020a). The overall aim of this study is to shed insights into the situation of older people during the COVID-19 pandemic in South Africa through analysing data from the period 2020-2021 from the NIDS-CRAM.

The COVID-19 pandemic has significantly altered older people's lives, daily routines, as well as the care and support they receive. For many, the pandemic has exacerbated feelings of hopelessness, loneliness and isolation because their ability to stay socially connected to family, friends, religious and community affiliations were disrupted. Many were encouraged to stay indoors, limit physical contact with non-household family members, friends and colleagues, thus, affecting their overall mental well-being (Posel, Oyenubi & Kollamparambil, 2021). In many regions in the world, including South Africa, economic consequences soon outweighed the health implications experienced by many poorer and lower-income households. As a result of the restrictions implemented during the lockdown, many suffered both social and economic consequences. In 2020 during the first wave of the NIDS-CRAM, some older people reported loss of household income; however, only after the onset of the national lockdown did the state intend to make provision for additional financial resources. As the year progressed, findings from this study indicated older people reported an increase in household income in wave 2. One of the measures implemented for older people during the lockdown was the increase in the old age grant to offset the precarious circumstances encountered in many homes and families headed by older people (Moore, 2020). Many older people, especially grant recipients are particularly vulnerable to the economic impact of COVID-19 for several reasons. Firstly, the grant is a means tested social support initiative intended for poorer individuals. Generally, it is these individuals who experience a number of social and economic challenges; which expectedly were heightened during the pandemic (Moore, 2020).

HelpAge International (2020c) suggests that pensions and social protection for older people should be more universally adopted, especially in the integrated response to COVID-19 because millions of older people will be driven deeper into poverty and destitution and more lives will be lost. According to HelpAge International (2020b), older people will face heightened challenges in recovering from the pandemic because of their likelihood of experiencing poverty. The World Bank (2020) estimates that COVID-19 will mean that approximately 40 million more people in sub-Saharan Africa will be driven into extreme poverty. While there are positive examples of African countries responding to the crisis, such as the situation in South Africa where social protection interventions have been targeted specifically for older people, the responses will need to adequately meet the needs of poor and vulnerable populations post-pandemic (HelpAge International, 2020b).

The increased financial provision is important for old age grant recipients because as more adults suffer job loss there will be an increasing reliance on the old age grant (Moore, 2020). While the old age grant may prove helpful in many situations it may not be sufficient to offset the consequences of job loss of adult household members. As a result, many will suffer economically and be subject to hunger. Findings from this study indicate a decline in household income, in which an older person resides, by more than 30 percentage points in waves 3 and 4. Household income has a significant impact on the family's ability to survive and combat poverty and hunger. Most older people reported running out of money to buy food in wave 1, and the estimates remained constant throughout the period. As the year progressed, more older people reported family members in the household experiencing hunger in the last 7 days. Older people reported that at least once a week family members were hungry due to the lack of food and between 8-12% of older people reported that their family went hungry every day in the last 7 days. Hunger is a persistent problem in the African region. Oxfam (2014) indicates that one in four people in South Africa suffers hunger on a regular basis and more than half of the population risk experiencing hunger due to their uncertain circumstances.

At the onset of the national lockdown there was much uncertainty about adopting risk-reducing measures. Findings from this study indicate that during the first wave of the survey, most older people believed that they could avoid contracting the virus and as the year progressed these observations remained consistent. At the onset of the national lockdown there was uncertainty regarding contracting the virus and protective measures and many older people may have not have access to valuable information. These observable fluctuations may have been due to misinformation and/or lack of communication and information provided to older people. According to Orr (2020) many older people are fearful of COVID-19 and attempt to adhere to the suggested measures. However, Orr (2020) also suggests that COVID-19 management in older adults should be individualized to ensure that no one is left behind. This would prove particularly useful in the diverse South African context as findings from this study indicate that during 2020 almost 14% of older people believed that they could not avoid getting the virus and this decreased by almost 3 percentage points in 2021. Findings from the logistic regression indicated that in 2020, older people with some level of education had higher odds of adopting risk-reducing strategies. Education serves as an important indicator of behavioural change (Arlinghaus & Johnston, 2018). However, in South Africa many older people have poorer educational outcomes which is a consequence of the historical experiences encountered which marginalised certain population groups and limited their access to educational opportunities (Statistics South Africa, 2014). The findings of this study are complemented by that of Kollamparambil and Oyenubi (2021) who suggests that preventive behaviour is evolving over time as there is an increased risk perception among educated and older respondents in South Africa.

While most older people in wave 1 reported a change in behaviour, 8.59% indicated that they did not change their behaviour since learning of the virus. Findings from Barber and Kim (2021) indicate that during the early phase of the outbreak of the virus many older adults perceived the risks of COVID-19 to be higher in comparison to younger adults. As observed in this study, as the year progressed almost all older people reported changing their behaviour, which may have been an outcome of fear of contracting the virus. The most common behaviourial change was washing of hands as well as sanitizing and disinfecting the home. These mechanisms are easily adopted in the home however, may prove challenging for those who do not have access for basic amenities such as water, soap and sanitizer. One of the concerns of improving the situation of older people is to ensure that they have timely and accurate access to information and guidance on how to adopt COVID-19 response measures. In addition to this, older people should be aware of their basic rights and entitlements in the context of the pandemic. HelpAge International (2020b) suggests that stringent restrictions on movement have impacted older people's access and ability to engage in community forums and meetings where they are able to communicate about their immediate concerns and challenges. In South Africa, older people were required to stay at home while the rest of the adult population could continue with their employment activities (HelpAge International, 2020b). In light of this, vaccinations were encouraged however, they were not welcomed enthusiastically

In order to safeguard the most vulnerable the government initiated a vaccine roll-out programme which specifically prioritise healthcare workers and those aged 60 years and older. At the beginning of 2021, findings from this study indicate that most older people strongly agreed that they would receive the vaccine once available. However, when vaccines did become available for older people, estimates from the latest wave of the survey, wave 5 which was conducted in 2021, indicated that less than 5% of older people reported receiving the vaccine. The majority reported that they believed that the vaccine is unsafe and they would only receive it if a trusted community leader had done so and remained healthy. Others believed that it was unsafe because the vaccine was developed in a short period. A further examination of the reasons associated with uptake of the vaccine was central to concerns relative to overall health and safety as well as the side effects. According to Cooper, Rooyen and Wiysonge (2021), the social nature of vaccine hesitancy in South Africa may be attributed to socio-demographics such as age, race, education, geographical location, and employment. In order to promote vaccinations among the most vulnerable, the provision of information should include timely communication strategies that focus on trust-building between the state and the population in order to provide transparency and participation of vaccinations in a fair and just manner (Cooper, Rooyen & Wiysonge, 2021). Based on the findings of the study, vaccine hesitancy is widespread among older people thus, this provides a unique opportunity to address health-related hesitancy trends in the country and across regions of similar contexts. Thus, the pandemic has also highlighted the importance of health system strengthening to achieve age-inclusive care and support which provides an opportunity for many nations to strive towards (HelpAge International, 2020b). On the contrary, great strides have been made in encouraging vaccine uptake since the fifth wave of the study to date. According to the South African National Department of Health, 62.69% of women and 65.02% of men aged 60 years and older have been partly or fully vaccinated (DoH, 2021).

The primary limitation of this study is that the different waves of the survey are analysed as separate cross-sectional surveys. Although this study does provide insights about ageing during the COVID-19 pandemic it does not consider the factors which cause an individual's behaviour or perceptions to change during the 2020-2021 period. This can only be gathered from a panel study where the analysis of the factors that affect behaviour among older people can be further examined.

Conclusion

Older people are significant role-players in society and make substantial economic and social contribution in their families and communities; therefore, the government should increase support for grant-headed households in which an older person resides. This study uses data from the South African NIDS-CRAM 2020/2021 to shed insights into the situation of older people during the COVID-19 pandemic. Population ageing in sub-Saharan Africa is going to be a major challenge if there is inadequate provision for the elderly. Based on the findings of the study it is recommended that governments across the continent need to begin to develop policy responses to enhance the well-being and capacity of older people at present and in the future. There needs to be a holistic and all-inclusive approach towards incorporating older people into broader public initiatives. This is a step towards attaining set goals and milestones. However, in order to do so, it is imperative that timely information, on a large-scale are disseminated to older people in an attempt to ensure good health and well-being of everyone, including the ageing population. Additionally, the burden imposed by the on-going pandemic needs to be strategically addressed to alleviate the adverse health, economic and social consequences which the older population is experiencing. Based on the findings of this study, it is recommended that existing social initiatives and health campaigns are strengthened to reduce hunger and poverty among older people and to encourage vaccine uptake and better health outcomes. The government can also incorporate long-term, sustainable provisions through the continued financial assistance and public health care which prioritises older people to ensure better health outcomes and an improved quality of life. It is important to create opportunities to foster healthy ageing during the pandemic as this has been an extremely challenging situation for many. In doing so, this will contribute towards sustainable development and align to a number of national and global development goals.

Declaration of conflicts of interest

The authors had no conflicts of interest with respect to the authorship or the publication of this article.

Data availability statement

The data that supports the findings of this study are available from the NIDS, DataFirst, website [http://www.nids.uct.ac.za/nids-data/data-access].

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