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Pensions and the health of older people in South Africa: is there an effect?

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INTRODUCTION

As part of a general focus on cash transfers and social protection, social policy for older people in low and middle income countries (LMICs) is primarily framed in terms of providing pension benefits. There is considerable evidence that targeted social pensions are effective in reducing poverty among older people and their households (Barrientos et al, 2003; Long and Pfau, 2008). As with other cash transfers, it is sometimes claimed that pensions can generate other positive wellbeing outcomes, including improved health status (Case, 2001; HelpAge International, 2006, Schatz et al, 2012). The evidence to support these claims is quite limited, partly reflecting the challenges of establishing such an effect. Implicitly, these claims could encourage policy-makers to neglect specific health interventions for older people, influenced by the notion that "pensions can deal with anything". This paper seeks to develop the current evidence base, assessing the impact of South Africa's old age grant on a range of health outcomes for older people. Two strengths of the paper are that it draws on nationally-representative data and it embraces a wide range of health outcomes, not just self-reported health status. It begins with a general review of current knowledge on pensions and health, drawing attention to key limitations in the available evidence. This is followed by an elaboration of the survey design and analytical methods, a presentation of the findings and a discussion of their wider implications.

PENSIONS AND HEALTH, THEORY AND EVIDENCE

Judging by the outputs of academics, policy-makers and NGOs, pensions are the most important issue affecting the lives of older people in LMICs. For example, between 1984 and 2004 the World Bank issued over 200 loans and published 350 papers on pension policy, but provided no loans or papers for other projects explicitly concerned with older people (Bretton Woods Project, 2006).[i] This focus on pensions has dwarfed the amount of attention paid to issues such as health policy for older people or the care economy. It is premised on an implicit view that cash income delivered through an old-age pension

[i]Arguably, much of pension policy over the past 20 years was not primarily concerned with older people, but was driven by a wider agenda of state reform and the promotion of financial markets. An exception to this is the more recent emphasis on social pensions.

programme is the be-all and end-all of meeting the needs of older people. No comparable focus on older people has emerged as part of established global health policy agendas, which remain focused on reproductive health and infectious disease. Even within the growing global focus on non-communicable diseases (many of which are strongly associated with old age), there is a tendency to highlight the impact of these conditions on younger age groups (Yach et al., 2004; HelpAge International, 2011).

This focus on pension provision might be justifiable if it could be demonstrated that, by meeting older people's economic needs, pensions are an effective means also to enhance other aspects of their well-being, including their health status. This claim is sometimes made in the general literature (Case, 2001; HelpAge International, 2006; Jamison, 2009). These arguments follow a relatively simple logic: increased personal income boosts consumption (of the “right” things) and helps older people afford the direct and indirect costs of treatment and medication. This argument has particular saliency in low-income countries where older people without pensions are less likely to have satisfactory levels of personal income and where health services are less likely to be free at the point of use. In high income countries, even where health services are free at the point of use, personal wealth is consistently associated with improved health outcomes for all age groups, older people included (Huisman, Kunst and Mackenbach, 2003).

There is considerable evidence that groups such as older people can face major financial barriers to accessing suitable health services, particularly in LMICs. Survey data for the United Republic of Tanzania and Côte d'Ivoire (where population coverage under old-age pension schemes tends to be limited to public servants and the formal economy) found that significantly higher proportions of those aged 50 or older did not seek treatment when ill than was the case for younger age groups (McIntyre, 2004). Despite this, for both countries per capita spending on health services by people aged 50 or older was significantly higher than for other age groups. With the introduction of user fees in many developing countries from the early 1980s, the link between access to cash and access to health services became more direct (Russell, 1996). Relatively few countries have included older people in those groups exempt from paying user fees (McIntyre, 2004).

Although there is a strong intuitive logic that old-age pensions should enhance older people's health status, this effect is contingent on a number of other considerations. These include the extent to which the pension income is retained by the older person or is pooled/appropriated by other household members. There is considerable evidence that pension pooling is a widespread practice across developing countries (Barrientos et al, 2003; Lloyd-Sherlock, 2006). In many cases, older people appear to pool their pensions voluntarily and this can enhance their household status. There are also, however, indications that pensioner abuse and the forced appropriation of benefits is common (Burman, 1996). The capacity to convert pension income into better health also depends on the availability of suitable health services — this is often very limited, particularly in rural districts (WHO, 2008).

Despite these considerations, a number of studies do appear to show that pensions enhance older people's access to health services and health status. Research on pensions in Brazil has indicated that receipt of a benefit is associated with improved access to health services and

medication for older people (Schwarzer and Querino, 2002). A separate comparison of pensioner and non-pensioner households in Brazil found that poor self-reported health was more prevalent among older people in non-pensioner households, even though they had a lower average age than older people in pensioner households (Lloyd-Sherlock, 2006). A study from India found 91 per cent of pensioners reported they spent at least part of their benefits on health services and that this had led to improved health outcomes (Government of India, 2009).

Specifically for South Africa, there are a number of studies that indicate pensions can have a significant effect on older people's health status. A study of 300 households in the Langeberg Health District of the Western Cape in 1999 found that older people in receipt of non-contributory state pensions reported a significantly better health status than other household members, controlling for age, sex and other factors, when the pensioner did not pool their resources with the rest of the household (Case, 2001). The same study also found that the health status of South African women improved significantly on reaching the age of pension eligibility (Case and Wilson, 2000). The findings of the Langeberg study have been partially corroborated by separate survey of 4,085 older people in the Agincourt Health District in north east South Africa, conducted in 2006 (Schatz et al, 2012). The Agincourt data suggest that older women enjoy a “honeymoon” period in the initial years after reaching the age of pension eligibility (60 to 64), reporting higher levels of happiness and quality of life compared to those aged 55 to 59. This effect is not sustained beyond the age of 65 and does not occur at all for older men.

At first sight, this evidence is persuasive and supports the argument that, by meeting older people's income needs, pensions do, to some extent at least, take care of their health needs. However, all of these studies are based on self-reported health — older people's own assessments of their personal health status and their health needs. Self-reported health data should not be read off as a direct indication of clinical health status, particularly for older people (Cockerham, Sharp and Wilcox, 1983). In some cases, self-report data can provide a highly misleading view of clinical health status. For example, research consistently shows that older women are more likely to self-report poorer health status than men of the same age, but experience lower rates of age-specific chronic illness (Case and Paxson, 2005).

The limitations of using self-report can be seen in comparative research from 2,000 households containing older people in Brazil and South Africa that asked informants about their access to the medication they felt they needed. Table 1 suggests that the South African health system had performed markedly better than Brazil's in meeting this aspect of older people's health needs. At first sight, this is surprising, since pension coverage in Brazil was on a par with South Africa's and the real value of benefits was substantially higher (US$ 220 a month in Brazil, compared to US$ 100 in South Africa). Moreover, Brazil had seen a substantial upgrading of the national health care system, which has been credited with improving provision for older people (Cohn, 2009). These developments were accompanied by policy-specific innovations, including a programme to promote access to cheap generic drugs and a national scheme of subsidized credit for pensioners (Lloyd-Sherlock et al, 2012). In comparison, there were fewer new developments in South Africa, where health policy remained, understandably, dominated by the challenges of HIV/AIDS and related

conditions such as tuberculosis (Kahn et al, 2006; Coovadia et al, 2009; Mayosi et al, 2012). In fact, WHO diagnostic data reveal that South Africa's older population has a considerably higher rate of untreated hypertension than is the case in Brazil (WHO, 2012). As such, the main conclusion that can be taken from Table 1 is that older people in South Africa had low levels of clinical health awareness and, perhaps, limited expectations of provision. For example, the WHO survey reports that only 38 per cent of older South Africans with hypertension were aware of their status. By contrast, Brazil has invested heavily in a national screening programme, which has enhanced awareness and increased demand for treatment and is seen as a model of best-practice for other middle-income countries (Farias et al., 2009).

Two points can be taken from this analysis. First, that any claims about potential pension effects on older people's health which are based on self-report should be interpreted with caution, if not scepticism. Second, levels of health awareness among older people in LMICs are very variable. Where awareness is missing, the likelihood that demand-side interventions such as pensions will lead to better utilization and improved outcomes is remote. The annual cost per person of generic drugs for hypertension has been estimated to be less than US$10 (Lim et al, 2007). Most older people in countries such as South Africa have the disposable income to afford such treatment, but their use of these services depends on their health awareness, as well as the geographical availability of screening, advice and medication.

The most reliable method to establish a link between pension status and health outcomes is through robust epidemiological analysis of clinically-verified health conditions across large data sets. A major challenge for such analysis is to separate out an independently-attributable pension effect from wider socioeconomic variables which may also affect health outcomes. For example, in many developing countries pensioners are more likely to have higher education levels than non-pensioners and education is itself a major determinant of health outcomes. Also, in almost all developing countries membership of contributory pension funds, particularly those for civil servants, is combined with inclusion in occupation-specific health insurance schemes, which are usually much better resourced than health services available to the population in general. To date, the only epidemiological studies that have attempted to identify a specific pension effect on health outcomes have focused on high-income countries and these have struggled to separate this effect from wider socioeconomic determinants of health outcomes (Fors et al., 2012).[ii]

STUDY DESIGN AND COUNTRY SELECTION

The design of this study has numerous advantages over previous studies of pensions and health outcomes. First, it is derived from a large, nationally representative sample of older people. Second, it includes a wide range of outcomes, including diagnosed health conditions, patterns of health service utilisation, self-reported health status and other quality of life measures.

[ii]Similarly, research across European Union countries found that health status in old age was better in countries with more generous pension provision, but it does not separate out an independent pension effect from a number of potential confounders, such as national variations in the education status of older people (Esser and Palme, 2010).

This study uses newly-available data from the World Health Organization (WHO) survey of Global Ageing and Adult Health (SAGE), which includes detailed information on health behaviours, use of health services and health outcomes, as well as a varied set of socioeconomic items. SAGE comprises nationally representative household surveys for people aged 50 or older in six countries: the People's Republic of China, Ghana, India, Mexico, the Russian Federation and South Africa, conducted between 2008 and 2010. Across these six countries, the total SAGE study population comprises 35,125 people aged 50 or older. SAGE sampling methods are based on the design developed for the 2003 World Health Survey where a probability sampling design was employed using multi-stage, stratified, random cluster samples.[iii] The primary sampling units were stratified by region and location (urban/rural) and, within each stratum, enumeration areas were selected.[iv] Importantly, the SAGE health outcome data do not just rely on self-report, but include the clinical screening and diagnosis of common conditions, such as hypertension. SAGE collects data on sources of household income, including a specific item on pension income. However, it does not provide information on the type of pension programme (such as contributory or non-contributory) or on which household member receives the pension. This creates some complexity for the analysis of pension effects, which is reflected in the study design.

Although SAGE provides data for six low and middle income countries, there are several reasons for limiting the analysis to a single country and for selecting South Africa. The first of these relates to pension coverage. Table 2 shows the proportion of households with a member aged 65 or over who reported that they received one or more pensions. This shows that pension coverage varied markedly across the SAGE countries, from less than 10 per cent of households in Ghana to 98 per cent in the Russian Federation. In countries with low pension coverage, such as Ghana, India and Mexico, pension receipt was usually strongly associated with other aspects of socio-economic status, so it is hard to separate these two effects. In China, pension coverage is strongly focussed on the urban population. In the Russian Federation virtually none of the SAGE population lacked a pension, reducing the scope to compare pension and non-pension households. In South Africa pension coverage for people aged 65 and over was 79 per cent, falling to 51 per cent for the population aged 50 and over. This means that the pensioner and non-pensioner household categories are both sufficiently large to facilitate statistical comparison.

A second reason for selecting South Africa is the relative simplicity of its pension programmes. All the SAGE countries had a number of schemes including contributory and social assistance pensions. The value of benefits varied sharply between these schemes. For example, at the time of the SAGE survey, the minimum monthly value of the main social assistance pension in South Africa was equivalent to US$95, compared to around US$2 in India. Similarly, there were many variations in terms of age of entitlement and other requirements, such as labour history. Although South Africa does contain a number of contributory schemes, the social assistance old age grant accounts for a large majority of

[iii] See <http://www.who.int/healthinfo/survey/en/>.

[iv] Details are available on the SAGE website (http://www.who.int/healthinfo/systems/sage) and in Kowal et al (2012).

pension benefits being paid out. At the time of the survey, this pension was paid at a flat rate (870 rand) to women aged 60 and over and men aged 63 and over.[v]

In most SAGE countries pension coverage is strongly associated with entitlements to different forms of health insurance, which are not extended to the non-pensioner population. In these cases, it is difficult to separate out the effects of pension and health insurance. Unlike other SAGE countries, entitlement to the old age grant is not bundled in with entitlements to health insurance, and overall health insurance coverage was quite limited (18% for the total population aged 50 and over).

The South African setting is relatively appropriate for studying the potential effects of pensions on health outcomes because basic health care services are generally speaking available, even in relatively poor rural locations (Coovadia et al, 2009). Despite this, there is evidence of that a significant proportion of older South Africans make little or no use of health services. For example, a survey of older black South Africans in a rural district in northern South Africa conducted in 2006 found only 45 per cent had used a health service in the previous year (Gómez-Olivé et al, 2013). This indicates that there are substantial barriers to accessing services, raising the question whether these barriers are modified by receipt of a pension.

The study exclusively focusses on black South Africans, rather than the full set of racial groups.[vi] There are two reasons for this. First, the deep and enduring socio-economic divisions between racial groups reduce the validity of analysis that is not race-specific.[vii] Second, older black South Africans were more likely to receive the old age grant and less likely to receive a contributory pension or be entitled to health insurance than was the case with other racial groups.[viii] Consequently, the vast majority of pensions included in the study were old age grants worth 870 rand.

Pensioner households are defined as households whose oldest member was black African and above the age of entitlement for the old age grant (60 for women, 63 for men) and where at least one pension was reported. Non-pensioner households are defined as households whose oldest member was black African and above the age of entitlement for the old age grant (60 for women, 63 for men) and where no pension was reported. Non-pensioner households also include those whose oldest member was black African and below the age of

[v]All South African citizens resident in South Africa other than those in state residential care are entitled to the old age grant. This entitlement is independent of any contributions they make during their working lives and independent of the pension status of their spouse/ partner. In theory, a means test is applied to the income of the older person and their spouse/partner to determine pension eligibility. In 2008 the income threshold for the means test was 1000 rand per month. In practice, the means test is applied quite loosely, ensuring that the social pension is a close to a de facto universal scheme for all but the richest households. Recognising this, the means test is now being phased out. For further information on the South African pension system in 2008, see P.Lloyd-Sherlock el al, (2012b).

[vi]Black South Africans account for 63% of the total sample.

[vii]For detailed analysis of racial variations in the socio-economic status of older South Africans, see Lloyd-Sherlock et al, 2012b.

[viii]A separate survey (ESRC) of South African households containing older people found that, among African blacks, less than 2 per cent received a contributory pension, whereas over 90% received the old age grant (Lloyd-Sherlock, 2013). Since older black South African tend to live in three generation households, it is likely that a number of the study households received a child support grant or foster care grant and that, in some cases, the grant-holder may have been a grandparent. The SAGE questionnaire item refers to pension receipt, rather than other kinds of state grants, so it is unlikely that these child grants would have been recorded as pensions. There is a strong ethos of spending this money on children rather than older household members and so it is unlikely that this grant would have been used directly to support older people (see Seyisi and Proudlock, 2009). Also, the value of these grants in 2008 was 200 rand, less than a quarter the value of the old age grant, further reducing its potential impact on older people.

entitlement for an old age grant (50-59 for women, 50-62 for men). Some households with oldest members in this younger age range did receive a pension, but they are excluded from the analysis. This is because they were primarily households receiving social assistance disability pensions. These disability pensions are excluded from the analysis, since the main criterion for entitlement was itself a poor health or functional status.[ix]

The selected covariates for the multivariate analysis are: rural/urban status, level of education, household wealth quintile, sex and five year age groups (for oldest household member). The inclusion of sex and rural/urban location reflects the widespread evidence that these factors significantly affect health outcomes for older people in South Africa (van der Hoeven, et al, 2012). Level of education is selected as general marker of lifetime socioeconomic status, which can also affect health outcomes. The inclusion of age is particularly important, since this tends to be higher for the oldest members of pensioner households. Wealth quintiles are derived from an index of household ownership of durable goods, dwelling characteristics (type of floors, walls and cooking stove), and access to services (improved water, sanitation and cooking fuel) for a total of 21 assets.[x] Household income is an endogenous variable and so is not included as a covariate.

The outcome indicators refer to the oldest member of the pension household. In most cases, it is likely that this will be the individual within the household who is in receipt of the old age pension. It is not possible to verify this with the SAGE survey data. There is considerable evidence from other studies of black South Africans that old age grants are usually shared across entire households (Lloyd-Sherlock et al, 2012b; Sagner and Mtati, 1999). This means that even if the oldest household member does not receive a pension in their own name, they are likely to receive a share of the benefit. The SAGE survey includes several hundred items on older people's health outcomes, functional status and quality of life. This study selected the following:

i. Number of outpatient visits in past year is selected to indicate older people's general level of engagement with health care providers. It is hypothesised that older people with pensions make greater use of health care providers, since the pension income enables them to overcome associated direct and indirect costs.

ii. Awareness, treatment and control of hypertension status are selected to indicate older people's general health awareness, their engagement with providers and the quality of the service they receive. Hypertension is the leading cause of mortality among older people (Ferri et al, 2011) and therefore measuring blood pressure is considered a standard form of health screening for people aged 50 and over. It is particularly significant in South Africa, given the country's exceptionally high rates of hypertension, the ease with which it is tested and the availability of low cost treatment (WHO, 2012; Lim et al, 2007). Other studies report that hypertension is becoming increasingly prevalent among poorer South Africans (Pisa et al,

[ix]The SAGE questionnaire does not distinguish between disability and old age grants. Disability grants are quite widespread in South Africa. A separate survey of older people's households in 2008 reported that 14 per cent received at least one disability pension (Lloyd-Sherlock, 2013).

[x]Household wealth quintiles were determined using a dichotomous hierarchical ordered probit model (Ferguson et al, 2003; Gakidou et al, 2007; Hosseinpoor et al, 2005).

2013).Older people defined as unaware of hypertension status were those tested positively for hypertension, who were not controlling the condition with medication and who self-reported that they were not aware of their hypertension status. It is hypothesised that older people with pensions can afford higher quality health provision and are therefore more likely to be aware of their hypertensive status, and are consequently more likely to seek treatment and achieve control.

iii. The study includes a number of self-reported health outcomes, to enhance comparability with previous studies. Their inclusion also reflects the fact that self-reported health, though potentially misleading when used in isolation, may to some extent influence and reflect older people's wider sense of personal wellbeing (Thomas, 2012). This can be instructive, when set alongside more objective, diagnostic outcomes. We use the same indicators as Schatz et al (2012), whose study is based on a more limited version of the SAGE questionnaire. Table 3 summarises the variables and coding that are applied to generate a number of composite self-reported health and wellbeing measurements.

The study does not look at the potential effects of pension receipt on the nutritional status of older people. Previous studies have posited that pensions increase consumption, which may enhance nutrition and hence health. However, SAGE data for South Africa found that 72 per cent of people aged 50 and over were either overweight or obese, with only 3 per cent underweight. In this context, increased food consumption is more likely to harm than enhance health outcomes.

FINDINGS

Table 4 presents descriptive data for the two comparison groups: black African households with and without an old age pension. The oldest member of pension households were more likely to be female than was the case in non-pension households, reflecting the higher average age for older women. There are no apparent differences between the two groups in terms of wealth quintile or rural/urban location. The oldest members of pension households were somewhat less likely to have completed primary education than in non-pension households. This is because formal education for blacks was less well developed when these older pensioner cohorts were of school age. Less than half of the pension and non-pension households had access to piped water or flush toilets, with little variation between the two groups. Overall health insurance coverage is low and similar for both groups. Table 4 also includes descriptive data for hypertension, prevalence, awareness, treatment and control. This shows similar rates of prevalence for the pension and non-pension households, but higher rates of awareness, treatment and control. Despite this, 87 per cent of hypertensive older people in pension households did not have their condition under control.

Table 5 presents the findings of the multivariate logistic regression analysis for outpatient visits, as well as for awareness, treatment and control of hypertension. The regression coefficient is the estimated increase in the log odds of the outcome per unit increase in the value of the exposure. The odds ratio measures associations between exposures and outcomes, compared to a reference category with a fixed value of one, with a 95 per cent confidence interval.[xi] The findings show that pension status was significantly associated

with more frequent outpatient visits (OR 1.77; 95% CI1.00-3.15). Pension status was also significantly associated with awareness of hypertensive status (OR:2.80; 95%CI:1.68-4.67) and with treatment (OR 3.26; 95%CI 1.89-5.61), but not control. Rural location was not significantly associated with outpatient visits, but was significantly associated with lower awareness (OR:0.61; 95% CI:0.45-0.82) and treatment (OR:0.68; 95%CI 0.49-0.94) of hypertension. Female sex is associated with utilisation (OR:1.56; 95% CI:1.15-2.12), awareness (OR:1.95; 95% CI:1.44-2.64) and treatment (OR: 1.86; 95% CI: 1.35-2.57). There were no significant associations with education or five-year age group, with the exception of the 55-59 age group, which was positively associated with all outcomes other than control.

Table 6 presents findings for a number of self-report health items. It shows that pension status was not significantly associated with self-reported general health, depression or anxiety. There were no significant associations with any of the other covariates, other than wealth quintiles 3 to 5 and completed secondary education or more (both associated with higher self-rated health scores). Table 7 presents the findings of the multivariate logistic regression analysis for the same set of composite self-reported health and wellbeing outcomes as used by Schatz et al (2012) (Table 3). Again, there are no significant associations between household pension status and any of these outcomes. There are no significant associations for sex or rural/urban location, except for sadness (OR:1.41; 95% CI:1.04-1.96). There are few significant associations with level of education, but wealth quintiles 3 to 5 were negatively associated with unhappiness (OR:0.45; 95% CI:0.34-0.59), dissatisfaction (OR:0.54; 95% CI:0.40-0.72) and poor quality of life (OR:0.41; 95% CI: 0.31-0.54). There are negative older age associations for unhappiness and dissatisfaction, and positive ones for poor function, but these effects are not consistent.

The Schatz et al (2012) study does not distinguish between pension and non-pension households. Instead, it makes assumptions about the likelihood of receiving a pension based on the age of their older members. They assume that women begin to receive a pension at age 60 and men at aged 65. Their identification of a “pension honeymoon” effect for women is derived from comparing outcomes between 5 year age groups before and after the age of assumed pension debut. Table 8 replicates their analysis and finds some evidence of a short honeymoon effect for self-reported quality of life. Women aged 60-64 were less likely (OR 0.34; CI 0.18-0.64) to report poor quality of life than women aged 55-59. By contrast women aged 65-69 were more likely (OR3.15; CI 1.69-5.87) to report poor quality of life than those aged 60-64. No significant associations are found for men.

DISCUSSION

Taken together, the findings indicate a complex picture of relationships between household pension status and the health of their oldest members. Household pension status was associated with higher rates of health service utilisation, hypertension awareness and treatment, but not with control. It is likely that the significant association with hypertension awareness is related to the association with utilisation, as more frequent visits to a health

[xi]For a more detailed account of th e statistical analysis see Appendix 1.

care provider increase the probability that blood pressure will be tested and the result communicated. Similarly, it is likely that the increased association with treatment is related to both utilisation and awareness.

Service utilisation, awareness and treatment are only important as a means to an end – improved diagnosed health status. Here the multivariate findings were negative for hypertension: overall rates of control were very low and there was no significant association with household pension status.[xii] The lack of an association with control reflects low overall rates of hypertension control among the study population (9.6%) and calls into question the efficacy of treatment. Since the end of apartheid, considerable progress has been made in extending a network of clinics and health posts, with a dedicated provider in most urban neighbourhoods and rural settlements, but there are concerns about the quality of provision (Coovadia et al, 2009). A 2003 survey of hypertensive patients at public and private sector providers found only 30 per cent were taking medication and only 18 per cent had the condition controlled (Republic of South Africa, Department of Health, 2007). For the population in this study, rates of control for older people on treatment were 22 per cent for non-pensioner households and 26 per cent for pensioner ones.

Tables 6 and 7 found no associations between household pension status and a wide range of self-reported health and quality of life items, and consequently no evidence of a pension honeymoon effect. By contrast, replicating Schatz et al's (2012) methodology indicated that for women being aged 60-64 was associated with a lower likelihood of poor quality of life compared to women aged 55-59 and 65-69. However, this second methodology does not include household pension status as an explicit variable and therefore this finding can be considered less robust. One reason for the lack of an association between pension status and positive self-reported health outcomes may be that pension status is associated with higher levels of awareness of conditions such as hypertension.

The wider implications of these findings require careful interpretation. First, the study identifies patterns of associations, but this does not itself demonstrate causality. It is conceivable that these associations were significantly affected by unobserved factors, such as higher rates of susceptibility to hypertension among pensioners due to more stressful working lives. In the case of South Africa, the lack of relationship between lifetime activity and pension entitlement makes these unobserved effects less likely. That said, further research is needed to verify and establish pathways of causality.

Second, the case of South Africa has unique features, both in terms of its pension and health provision, that are not found in other countries. From a policy point of view, rather than the potential health effects of pensions, the more compelling issue is the neglect of health services relevant to people in older age groups, such as the screening and treatment of hypertension. Table 4 shows that for pensioner and non-pensioner households, rates of hypertension are high, while rates of awareness, treatment and control are low: in other words providing older people with generous pensions does not compensate for the shortcomings of health policy. SAGE data show that the rate of uncontrolled hypertension in South Africa is the highest recorded for any country in human history (Lloyd-Sherlock et al, 2014). Put bluntly, the South African government is good at giving older people money, but

is not good at keeping them alive or in good health. This unbalanced approach to social protection undermines the potential benefits of a generous pension scheme for older people's wellbeing. It is also important to consider the wider economic and social consequences for older people's households of acute healthcare needs, the opportunity costs of caring for older people disabled by stroke or dementia and, not least, the loss of pension income when older people die of easily-preventable health conditions (Prince et al, 2012).

Given the relative ease and cheapness of screening and treating conditions such as hypertension, high cholesterol and diabetes, particularly when compared to the cost of social pensions (Lim et al, 2007), it might be concluded that governments should divert resources from pensions to targeted health interventions. In fact, rather than a trade-off between pensions and health care, there may be opportunities to creatively combine these interventions. Pensions are usually distributed through schools and post offices. Were they to be distributed through local health centres, this would increase older people's contact and engagement with service providers which would enhance their health awareness (as well as providers' awareness of older peoples' needs). Monthly visits would enable screening for conditions such as hypertension, the provision of advice and medication and the evaluation of impact on older people's health status. The authors are not aware of any such combined approach to pension delivery and health promotion. Alternatively, health services might be provided at pension pay points. This has been implemented in South Africa, on a short-term, limited pilot basis, with the provision of rapid cataract assessments (Cook et al, 2007; Rotchford and Johnson, 2000). The pilots proved to be effective in increasing awareness and demand for treatment, but were discontinued. There would be scope for developing similar interventions in countries with reasonably broad pension coverage.

The findings of this paper have wider relevance to debates about the effects of cash transfers and social protection. Much has been made of the scope for conditional cash transfer schemes to enhance health outcomes (Forde et al, 2012). In fact, the evidence that these effects occur is largely limited to countries such as Mexico where good health infrastructure is already in place and where cash is combined with nutritional supplements (DFID, 2011). The effects of other demand-side interventions such as social health insurance also vary considerably across countries and between rural and urban settings, reflecting differences in health awareness and service provision (Witter and Garshong, 2009; Frenk et al, 2009). As with pensions, this calls for a more balanced and integrated approach to social protection which recognises that the potential benefits of giving poor people cash are potentially undermined unless this is part of a wider set of interventions.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Older people's reported access to essential medication, Brazil and South Africa, 2008/2009.

	Brazil	South Africa
Always	78%	42%
Sometimes	19%	34%
Never	3%	24%

Source: Lloyd-Sherlock, et al (2012).

Table 2

Pension coverage of households containing at least one person aged 65 or over.

Country	Pension coverage	Country	Pension coverage
China	54.3%	Mexico	35.1%
Ghana	9.6%	Russian Federation	98.4%
India	19.3%	South Africa	79.0%

Source: WHO SAGE database.

Table 3

Construction of health and wellbeing outcome measures.

Variable	Original coding or components	Dichotomous recoding or recoding of quintiles
Sad [q2018]	None, mild, moderate, severe, extreme	0=none or mild 1=at least some sad
Worry[q2019]	None, mild, moderate, severe, extreme	0=none or mild 1=at least some worry
Unhappy[q7010]	Very happy, happy, neither, unhappy, very unhappy	0=happy 1=at least some unhappy
Dissatisfied [q7008]	Very satisfied, satisfied, neither, dissatisfied, very dissatisfied	0=satisfied 1=at least dissatisfied
Health status [q2002-2024]	Mobility, self care, pain and discomfort, cognition, interpersonal activities, sleep, energy, affect, vision; scale 0 (poor health) to 100 (good health)	0=60% best health 1=40% poorest health
Function [q2025-2046]	interpersonal activities, difficulties in daily living such as standing, walking, household duties, learning, concentrating, self care; scale 0 (low ability) to 100 (high ability)	0=60% best 1=40% poorest
Quality of life [q7001-7002]	Enough energy for daily life, enough money to meet needs, satisfaction with-own's health, with oneself, ability to perform daily activities, personal relationships, condition of your living space, rate your overall quality of life; scale 0 low quality of high to 100 high quality of life	0=60% best 1=40% worst

Table 4

Sample distribution of Black African households receiving no pension and receiving at least one pension, South Africa.

Characteristics	Black African Households			
	Receive no pension[1] N[%]	Chisq p value	Receive at least one pension[2] N[%]	Chisq p value
Total Number	1203[56.4]		791[40.8]	
Gender of oldest member		<0.0001		0.007
Male	753 [62.6]		279[35.3]	
Female	450 [37.4]		512[64.7]	
Place of residence		0.020		0.005
Urban	667[55.4]		406[51.4]	
Rural	536 [44.6]		384[48.6]	
Age groups of oldest member		<0.0001		<0.0001
50-54	408[33.9]		-	
55-59	310[25.8]		-	
60-62	133 [11.1]		80[10.1]	
63-66	60 [5.0]		122[15.4]	
67-70	110 [9.1]		191[24.2]	
71+	182 [15.1]		398[50.3]	
Household wealth quintile		0.452		0.059
Quintile 1 (poorest)	233[28.7]		204[26.0]	
Q2	205[25.2]		185[23.6]	
Q3	165[20.3]		152[19.4]	
Q4	126[15.5]		158[20.1]	
Q5 (richest)	84[10.3]		86[11.0]	
Education of oldest member		0.001		<0.0001
No formal education	403 [33.5]		337[42.6]	
Incomplete primary	552[45.9]		357[45.1]	
Complete primary	202[16.8]		77[9.7]	
Complete secondary and above	46[3.8]		20[2.5]	
Households with piped water	366[44.9]	0.107	329[41.7]	0.167
Households with piped sewerage	363[44.5]	<0.0001	300[38.0]	<0.0001
Health insurance status of oldest member		<0.0001		0.062
Covered by mandatory insurance	78[6.5]		31[3.9]	
Covered by voluntary insurance	73[6.1]		56[7.1]	
Covered by both mandatory and voluntary insurance	37[3.1]		24[3.0]	
None	662[83.7]		676[85.5]	
Hypertensive	418[63.1]		419[62.0]	

Characteristics	Black African Households			
	Receive no pension[1] N[%]	Chisq p value	Receive at least one pension[2] N[%]	Chisq p value
Hypertensive and aware of status	123[29.4]	0.262	226[53.9]	0.785
Hypertensive and taking treatment	108[25.8]	<0.0001	213[50.8]	<0.0001
Hypertensive and condition controlled	24[5.7]	0.262	56[13.4]	0.785

[1] contain at least one women age 50-59 and one men age 50-62

[2] contain at least one women age 60+ or one man age 63+

Table 5

Association between Old age household pension status (Households reporting pension income, and containing a man aged 63+ or a woman aged 60+) and outpatient visits and hypertension awareness, treatment and control

Predictors and confounders	Outpatient visit		Hypertension awareness		Hypertension treated		Hypertension controlled	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
	OR[95%CI]	OR[95%CI]	OR[95%CI]	OR[95%CI]	OR[95%CI]	OR[95%CI]	OR[95%CI]	OR[95%CI]
Old age household pension status								
No pension(ref)	1.00(ref)	1.00(ref)	1.00(ref)	1.00(ref)	1.00 (ref)	1.00 (ref)	1.00(ref)	1.00(ref)
Receive pension	1.65[1.22-2.23]	1.77[1.00-3.15]	2.38[1.79-3.17]	2.80[1.68-4.67]	2.85[2.12-3.84]	3.26[1.89-5.61]	0.76[0.55-1.03]	0.80[0.47-1.40]
Gender								
Male(ref)		1.00(ref)		1.00(ref)		1.00 (ref)		1.00(ref)
Female		1.56[1.15-2.12]		1.95[1.44-2.64]		1.86[1.35-2.57]		0.83[0.62-1.12]
Place of residence								
Urban(ref)		1.00(ref)		1.00(ref)		1.00 (ref)		1.00(ref)
Rural		0.96[0.69-1.32]		0.61[0.45-0.82]		0.68[0.49-0.94]		0.98[0.72-1.33]
Age								
50-54(ref)		1.00(ref)		1.00(ref)		1.00 (ref)		1.00(ref)
55-59		1.72[1.13-2.62]		1.75[1.14-2.68]		2.10[1.35-3.29]		0.77[0.52-1.15]
60-64		0.76[0.43-1.32]		0.76[0.43-1.34]		0.78[0.42-1.44]		0.71[0.39-1.22]
65-69		1.29[0.63-2.62]		1.32[0.70-2.48]		1.38[0.69-2.71]		1.12[0.56-2.18]
70+		1.04[0.53-2.06]		0.99[0.53-1.87]		1.13[0.59-2.18]		0.69[0.37-1.28]
Education								
No formal education(ref)		1.00(ref)		1.00(ref)		1.00 (ref)		1.00(ref)
Incomplete primary		1.27[0.89-1.80]		1.00[0.71-1.41]		1.00[0.69-1.44]		1.03[0.70-1.40]
Complete primary		1.15[0.72-1.84]		1.11[0.68-1.83]		0.99[0.58-1.71]		1.29[0.79-1.88]
Complete secondary and above		1.00[0.45-2.26]		0.55[0.24-1.26]		0.64[0.26-1.55]		1.32[0.63-2.52]
Household wealth								
Poorest (Q1,2)		1.00[ref]		1.00[ref]		1.00[ref]		1.00[ref]
Middle and Richest (Q3,4,5)		1.53[1.11-2.10]		1.48[1.09-2.00]		1.30[0.95-1.79]		0.87[0.64-1.18]

Note: Dependent variables: outpatient visit-1(yes), 0(no); awareness of hypertension-1(aware), 0(not aware); Hypertension treatment- 1(on treatment since last 12 months), 0(not on treatment); hypertension controlled- 1(yes), 0(No)

Table 6

Association between Old age household pension status (Households reporting pension income, and containing a man age 63+ or a woman age 60+) and selected self-reported heath outcomes.

Predictors and confounders	**Self rated health**		**Depression**		**Anxiety**	
	Unadjusted	**Adjusted**	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
	OR[95%CI]	**OR[95%CI]**	**OR[95%CI]**	**OR[95%CI]**	**OR[95%CI]**	**OR[95%CI]**
Old age Household pension status						
No pension(ref)	1.00(ref)	1.00(ref)	1.00(ref)	1.00(ref)	1.00(ref)	1.00(ref)
Receive pension	0.73[0.51-1.04]	0.68[0.40-1.14]	0.75[0.58-0.97]	1.04[0.65-1.65]	0.74[0.57-0.96]	1.12[0.70-1.79]
Gender						
Male(ref)		1.00(ref)		1.00(ref)		1.00(ref)
Female		0.83[0.58-1.19]		1.19[0.93-1.57]		1.22[0.96-1.61]
Place of residence						
Urban(ref)		1.00(ref)		1.00(ref)		1.00(ref)
Rural		0.85[0.56-1.16]		0.82[0.62-1.05]		0.79[0.60-1.02]
Age						
50-54(ref)		1.00(ref)		1.00(ref)		1.00(ref)
55-59		0.61[0.38-1.04]		1.09[0.78-1.57]		1.08[0.77-1.55]
60-64		1.29[0.64-2.63]		0.69[0.45-1.14]		0.69[0.45-1.13]
65-69		1.11[0.54-2.19]		0.78[0.45-1.41]		0.67[0.39-1.22]
70+		0.74[0.41-1.50]		0.61[0.36-1.12]		0.56[0.33-1.02]
Education						
No formal education(ref)		1.00(ref)		1.00(ref)		1.00(ref)
Incomplete primary		0.73[0.54-1.18]		1.30[0.98-1.72]		1.18[0.88-1.54]
Complete primary		1.45[0.86-2.84]		0.84[0.55-1.29]		0.87[0.56-1.29]
Complete secondary and above		5.31[1.60-17.65]		1.09[0.57-2.17]		0.89[0.46-1.69]
Household wealth						
Poorest (Q1,2)		1.00(ref)		1.00(ref)		1.00(ref)
Middle and Richest (Q3,4,5)		1.68[1.17-2.43]		1.04[0.80-1.35]		0.96[0.74-1.25]

Note: Dependent variables: outpatient visit-1(yes), 0(no); awareness of hypertension-1(aware), 0(not aware); self rated health-1(good), 0(not good).

Table 7

Association between Old age household pension status (Households reporting pension income, and containing a man age 63+ or a woman age 60+) and composite health and wellbeing outcomes.

Predictors and confounders	**Sad**	**Worry**	**Unhappy**	**Dissatisfied**	**Poor health status**	**Worst function**	**Worst quality of life**
	Adjusted OR [95%CI]	**Adjusted OR [95%CI]**	**Adjusted OR [95%CI]**	**Adjusted OR [95%CI]**	**Adjusted OR [95%CI]**	**Adjusted OR [95%CI]**	**Adjusted OR [95%CI]**
Old age Household pension status							
No pension(ref)	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]
Receive pension	0.97[0.57-1.58]	1.11[0.65-1.86]	1.40[0.87-2.25]	1.00[0.61-1.66]	0.98[0.53-1.76]	1.15[0.68-1.91]	0.85[0.50-1.39]
Gender							
Male(ref)	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]
Female	1.15[0.85-1.58]	1.08[0.81-1.49]	0.90[0.68-1.18]	0.99[0.75-1.32]	1.34[0.94-1.92]	1.31[0.98-1.75]	1.16[0.86-1.49]
Place of residence							
Urban(ref)	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]
Rural	1.41[1.04-1.96]	1.17[0.85-1.59]	1.12[0.92-1.59]	0.94[0.70-1.26]	1.36[0.96-1.96]	0.92[0.69-1.24]	1.18[0.98-1.68]
Age							
50-54(ref)	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]
55-59	1.14[0.75-1.76]	0.89[0.58-1.35]	0.97[0.66-1.38]	0.69[0.47-0.99]	1.00[0.60-1.65]	1.39[0.95-2.11]	1.52[1.02-2.14]
60-64	0.97[0.56-1.71]	0.87[0.51-1.48]	0.69[0.39-1.06]	0.56[0.3 -0.85]	1.26[0.66-2.46]	1.23[0.75-2.24]	0.99[0.58-1.68]
65-69	1.20[0.65-2.34]	0.89[0.46-1.71]	0.78[0.45-1.42]	0.72[0.38-1.30]	1.13[0.54-2.35]	1.91[1.04-3.63]	1.66[0.89-3.11]
70+	1.27[0.68-2.37]	0.96[0.52-1.86]	0.50[0.26-0.81]	0.59[0.33-0.95]	2.00[0.97-4.10]	2.54[1.45-4.88]	1.55[0.86-2.86]
Education							
No formal education(ref)	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]
Incomplete primary	1.47[1.04-2.06]	1.37[0.98-1.92]	0.93[0.70-1.25]	0.99[0.68-1.35]	1.25[0.82-1.81]	1.37[1.00-1.87]	1.07[0.80-1.44]
Complete primary	0.98[0.57-1.69]	0.92[0.54-1.54]	0.65[0.42-1.02]	0.71[0.45-1.11]	0.82[0.44-1.39]	0.64[0.41-1.02]	0.66[0.43-1.01]
Complete secondary and above	0.77[0.33-1.78]	0.69[0.31-1.50]	0.42[0.13-0.93]	0.11[0.04-0.27]	0.92[0.31-2.43]	0.69[0.34-1.53]	0.40[0.18-0.87]
Household wealth							
Poorest (Q1,2)	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]	1.00[ref]
Middle and Richest (Q3,4,5)	0.85[0.62-1.17]	0.98[0.72-1.34]	0.45[0.34-0.59]	0.54[0.40-0.72]	0.92[0.65-1.29]	1.09[0.81-1.45]	0.41[0.31-0.54]

Table 8

Relationship (adjusted odds ratios with 95%CI) of gender, 5-year age group, residence and other socioeconomic characteristics and the recent pension-eligible age group to health and well being among Black/ Africans in South Africa.

Characteristics	Sad	Worry	Unhappy	Dissatisfied	Poor health status	Worst function	Worst quality of life	Hypertension awareness	Hypertension treatment	Hypertension controlled
Gender										
Male	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.19[0.87-1.62]	1.13[0.83-1.52]	0.86[0.65-1.14]	0.95[0.71-1.27]	1.32[0.92-1.88]	1.35[1.01-1.81]	1.08[0.82-1.44]	1.97[1.45-2.68]	1.90[1.38-2.62]	0.82[0.61-1.11]
Age groups										
50-54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
55-59	1.14[0.74-1.75]	0.88[0.58-1.33]	0.98[0.67-1.42]	0.70[0.47-1.04]	1.00[0.60-1.66]	1.40[0.94-2.10]	1.54[1.05-2.24]	1.75[1.14-2.69]	2.12[1.36-3.30]	0.77[0.52-1.15]
60-64	0.94[0.57-1.54]	0.86[0.53-1.39]	0.80[0.50-1.29]	0.57[0.35-0.91]	1.25[0.70-2.25]	1.32[0.81-2.14]	0.95[0.59-1.54]	1.27[0.79-2.05]	1.46[0.88-2.42]	0.65[0.39-1.08]
65-69	1.11[0.69-1.80]	0.91[0.56-1.47]	1.15[0.75-1.77]	0.76[0.49-1.20]	1.12[0.67-1.90]	2.15[1.39-3.32]	1.57[1.03-2.41]	3.30[2.09-5.20]	4.09[2.53-6.62]	0.91[0.56-1.49]
70+	1.18[0.75-1.87]	1.02[0.66-1.60]	0.70[0.46-1.05]	0.60[0.35-0.91]	1.98[1.23-3.19]	2.84[1.90-4.24]	1.41[0.95-2.10]	2.46[1.59-3.80]	3.23[2.06-5.09]	0.57[039-0.85]
Place of residence										
Urban	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Rural	1.48[1.07-2.03]	1.23[0.90-1.69]	1.04[0.78-1.40]	0.86[0.64-1.15]	0.32[0.91-1.89]	0.94[0.70-1.26]	1.09[0.81-1.46]	0.63[0.47-0.85]	0.70[0.50-0.97]	0.98[0.71-1.33]
Education										
No formal education	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incomplete primary	1.50[1.06-2.13]	1.36[0.96-1.91]	1.08[0.80-1.46]	1.10[0.74-1.39]	1.26[0.85-1.88]	1.37[0.99-1.89]	1.10[0.81-1.48]	097[0.69-1.37]	0.97[0.67-1.39]	1.04[0.73-1.46]
Complete primary	1.00[0.58-1.73]	0.88[0.51-1.52]	0.92[0.58-1.45]	0.75[0.48-1.18]	0.85[0.47-1.53]	0.62[0.39-0.98]	0.71[0.46-1.10]	1.11[0.67-1.84]	0.99[0.57-1.72]	1.30[0.83-2.02]
Complete secondary and above	0.73[0.31-1.74]	0.60[0.26-1.36]	0.53[0.23-1.21]	0.14[0.05-0.35]	1.02[0.35-2.94]	0.62[0.29-1.33]	0.50[0.23-1.11]	0.54[0.23-1.25]	0.62[0.25-1.53]	1.35[0.64-2.86]
Household wealth										
Q1(Lowest)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2	1.05[0.68-1.63]	1.18[0.76-1.83]	0.57[0.38-0.84]	0.48[0.32-0.74]	0.84[0.51-1.38]	0.98[0.65-1.48]	0.60[0.40-0.90]	1.21[0.77-1.88]	0.93[0.57-1.50]	1.10[0.70-1.73]
Q3	0.71[0.45-1.11]	0.86[0.55-1.35]	0.46[0.31-0.69]	0.53[0.35-0.82]	0.89[0.54-1.47]	1.13[0.75-1.71]	0.41[0.27-0.62]	1.65[1.06-2.56]	1.38[0.87-2.18]	0.85[0.54-1.31]
Q4	0.97[0.61-1.54]	1.21[0.76-1.92]	0.26[0.17-0.40]	0.27[0.17-0.43]	0.85[0.51-1.43]	0.82[0.53-1.29]	0.28[0.18-0.43]	1.48[0.92-2.38]	0.95[0.59-1.52]	1.09[0.69-1.72]
Q5(highest)	1.17[0.64-2.13]	1.41[0.79-2.54]	0.23[0.13-0.42]	0.26[0.14-0.47]	0.70[0.36-1.34]	1.57[0.91-2.69]	0.20[0.11-0.35]	1.87[1.09-3.20]	1.61[0.92-2.84]	0.79[0.45-1.41]
Improvement at pension-eligibility										
Women 60-64 vs 55-59	0.70[0.37-1.34]	1.04[0.55-2.06]	0.67[0.36-1.26]	0.78[0.42-1.47]	1.20[0.58-2.47]	0.81[0.44-1.48]	0.34[0.18-0.64]	0.80[0.43-1.47]	0.81[0.44-1.50]	0.83[0.42-1.65]

Characteristics	Sad	Worry	Unhappy	Dissatisfied	Poor health status	Worst function	Worst quality of life	Hypertension awareness	Hypertension treatment	Hypertension controlled
Men 65-69 vs 60-64	0.84[0.36-1.95]	0.89[0.39-2.05]	1.19[0.51-2.77]	1.44[0.61-3.38]	0.66[0.21-2.07]	1.36[0.60-3.12]	0.91[0.38-2.17]	4.85[1.77-13.29]	5.45[1.79-16.59]	0.84[0.34-2.08]
Decline in next age group										
Women 65-69 vs 60-64	1.62[0.83-3.16]	1.10[0.57-2.13]	2.15[1.15-4.02]	1.63[0.84-3.16]	1.08[0.53-2.20]	2.10[1.16-3.82]	3.15[1.69-5.87]	2.09[1.12-3.89]	2.28[1.22-4.24]	1.87[0.94-3.73]
Men 70-74 vs 65-69	0.89[0.29-2.68]	0.91[0.32-2.61]	0.65[0.27-1.60]	0.71[0.28-1.82]	1.50[0.48-4.71]	1.62[0.67-3.90]	1.06[0.41-2.73]	0.75[0.29-1.93]	1.01[0.39-2.64]	1.30[0.43-3.94]
Number	1912	1910	1844	1746	1155	1748	1797	1925	1808	1808