Pensions, Gender, and Health:
An analysis of pension effects over time in rural South Africa

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Abstract: A state-funded non-contributory pension plays an important role in poor and AIDS-affected rural South African households. Earlier cross-sectional analyses of 2006 and 2010 WHO-INDEPTH Study of Global Aging and Adult Health (WHO-SAGE) survey from the MRC/University of the Witwatersrand Rural Public Health and Health Transitions Unit (Agincourt) show strong sex differences in reports of health and wellbeing in persons over the age of 50, as well as gendered but temporary positive impact of pension eligibility on older persons' health and wellbeing. Data on actual pension receipt are now available for 2010. New analyses show no effect of pension receipt for men; for women, however, pension receipt is associated with 16-31% decrease in poor wellbeing, with the magnitude depending on the measure used. There were no significant age interactions - the previous finding of effect diminishing with age was due to a constant pension effect combined with a rise in poor wellbeing with age. We also find important effects of additional individual characteristics on wellbeing. Women who are unmarried uniformly report poorer wellbeing. For both women and men, self-reported bad health is a strong significant predictor of poor wellbeing. Thus our story differs from previously: yes, women receiving a pension are less likely to report poor wellbeing, but there is no detectable "honeymoon" effect when information on actual pension receipt rather than its imperfect proxy, pension-eligible age, is used. For men, pension receipt is unrelated to measures of wellbeing – the recent policy shift did not measurably affect men's wellbeing.

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Introduction

Through unique longitudinal data, this study provides an important evaluation of social policy effects, namely a change in pension age-eligibility, on older persons' self-reported health and subjective wellbeing (Rakodi 2002; Scoones 1998). A considerable number of studies have shown that state-funded non-contributory pensions are an important household resource in rural South Africa, equal to nearly 50% of mean household income and benefitting not just the recipient but entire households and networks (Ardington et al. 2010; Barrientos 2003; Booysen and van der Berg 2005; Case and Deaton 1998; Case and Menendez 2007; Duflo 2003; Kakwani and Subbarao 2005; Lombard and Kruger 2009; May 2003; Schatz and Ogunmefun 2007). Fewer studies have had adequate data to link pensions to older persons' health and wellbeing, and only a handful are able to track older persons over time. Households and families in South Africa contend with a double burden of disease—an emerging epidemic of non-communicable disease affecting older adults (Anderson and Phillips 2006; K Kahn et al. 2006; Kowal et al. 2010; Mayosi et al. 2009; Margaret Thorogood et al. 2007) coupled with HIV antenatal prevalence of almost 30% (South Africa Department of Health 2011). This paper uses World Health Organization-INDEPTH Study of Global Aging and Adult Health (WHO-SAGE) survey data collected in 2006 and again in 2010 in the MRC/Wits Rural Public Health and Health Transitions (Agincourt) Unit's study site in rural South Africa. It builds on earlier work to assess whether individuals report improvement in health and wellbeing in the years following eligibility for pension receipt, if this "pension bump" is more prominent for women than for men, and whether results change when information on pension receipt rather than a proxy, pension-eligible age, is available.

Earlier cross-sectional analyses of 2006 and 2010 WHO-INDEPTH Study of Global Aging and Adult Health (WHO-SAGE) survey in Agincourt show strong sex differences in reports of health and wellbeing in persons over the age of 50 (Gomez-Olive et al. 2010; Schatz, X. Gómez-Olivé, et al. 2012). In 2006, pension age-eligibility, especially for women, is related to a remarkable improvement in reported indicators of health status and wellbeing, but there are diminishing returns with age (Schatz, X. Gómez-Olivé, et al. 2012). Between the 2006 and 2010 surveys pension age-eligibility, previously age 60 for women and age 65 for men, was incrementally equalized at age 60 by April 2010 (High Court of South Africa, Case No: 32838/05). Much of the work to date has focused on the benefits related to women's pension receipt; this policy change allows us to bring contributions to men into starker focus.

Agincourt Health and Demographic Surveillance System census data (collected annually 1992-present) linked to the WHO-SAGE data provide a rare opportunity to assess how pensions affect the health and wellbeing of individuals. A 2006 cross-sectional analysis showed a striking "pension bump," particularly for women, with better health and wellbeing in the years directly following pension eligibility, but with diminishing returns with age (Schatz, X. Gómez-Olivé, et al. 2012). In this paper we find that in 2010, in models that included no additional controls, both men and women generally reported being better off at age 60-64 on most measures of wellbeing. However, when the newly available data on actual pension receipt were included, we find strong sex differences in the effect of the pension on reported wellbeing. Despite high proportions of age-eligible receiving the

pension, age turned out to be a misleading proxy for pension receipt.

Background

South Africans in rural areas are aging in a complex context of increasing burden of disease that includes endemic levels of HIV, as well as a growing epidemic of non-communicable disease, particularly among those over age 50 (Anderson & Phillips 2006; Kahn et al. 2006). In this context men and women reports of wellbeing are seemingly different (Westaway et al. 1999; Gómez-Olivé et al. 2010; Nyirenda et al. 2012; Schatz et al 2012). There is evidence from rural South Africa that self-rated health and composite measures of reported functional ability (WHODASi) and quality of life (WHOQoL) are worse among older women than men (Gómez-Olivé et al. 2010; Nyirenda et al. 2012; Schatz et al. 2012). Schatz et al. (2012) found that women report poorer wellbeing overall compared to men. Nyirenda et al. (2012) found sex to be strongly associated to measures of functionality, even when controlling for HIV-infection and HIV-affected status. In addition Nyirenda and colleagues found that when controlling for age, marital status, and place of residency, women were 70-80% less likely to report being in good functional ability and overall health status than men. In addition, research from rural South Africa has established income, self-rated health, marital status, race, education, employment status, and age as important determinants of wellbeing in older adults (Westaway et al. 2007; Gómez-Olivé et al. 2010; Schatz et al. 2012).

Previous research with rural samples provides evidence that differing gender expectations may be influencing wellbeing (Schatz et al. 2012; Nyirenda et al. 2012). Whereas older women are likely to be widowed and to live alone or with extended family, the majority of older men are married or in a relationship (UN 2010). Women's longer life expectancy, age differences between spouses with women usually marrying men who are older than they are, and men's greater likelihood to remarry after being widowed or divorced, all lead to older South African men being more likely than older women to live with a spouse (Cohen & Menken 2006; UN 2010). Thus, older men often have more resources and assistance on which they can draw than have older women (Ezeh, Chepngeno, Kasiira, & Woubalem 2006; UN 2010).

The social roles of older South African men, and men in rural South Africa more generally, continue to be shaped by apartheid era migration policies which created circular migration flows, particularly of men, from rural to urban areas (Susser 2011). This may mean that older men are more likely than older women to be accustomed to having income and controlling that income. In addition, older men are likely to have spent more of their lives prior to pension-eligibility age outside the rural area.

South African old-age pension

While the pension is available to all South Africans, it is especially important to the majority of black South African households as a stable economic source (May 2003; Sanger & Mtati 1999). More than 90% of black older South Africans access the pension (Ferreira 2006; Burns, Keswell, & Leibbrandt 2005), and the cash transfer is as much as twice the median per capita income of the black population (Case & Deaton 1998). Thus, pension receipt may significantly increase the income in black South African households

(Barrientos et al. 2003; May 2003; Møller & Devey 2003). In 2005, the monthly pension was SAR780 (approximately USD130) (Samson, MacQuene, & van Niekerk 2006); it increased incrementally annually in relation to inflation and cost of living; in 2010 the amount was SAR1080 (approximately USD180)(SASSA 2012).

Many rural households depend on a variety of social grants to sustain them; income pooling of pensions and other social grants provides a reliable and regular safety net for the needs of older persons and their households (May 2003; Sanger & Mtati 1999). Because of older persons' income–pooling, the pension has also been shown to improve overall food security and wellbeing in older people's households (Barrientos et al. 2003; Møller & Devey 2003). In many cases pensions are viewed as a household resource, covering family members' health and everyday needs (Case & Deaton 1998; May 2003). The presence of a pensioner, particularly of a woman, is associated with enhanced wellbeing of other household members (Ardington et al. 2010; Burns et al. 2005; Duflo 2003). Although there has been a relatively little research conducted on male pensioners' roles, limited research does show that men also worry about meeting household needs (Sherr 2009).

Although research on spending habits of pensioners in South Africa is limited, there is evidence of gendered spending habits more generally. Gender of the household head in South Africa significantly influences spending on certain budget items (Maitra & Ray 2003). Namely, women household heads are more likely than their male counterparts to spend on clothing and child-care. Posel, Fariburn, and Lund (2006) found that pension income, specifically received by women, was used to support grandchildren. Case and Deaton (1998) find that despite having less income overall, when women control income, they often favor spending money on food over other expenditures. The largest differences, however, were that female household heads spent considerably less than male household heads on alcohol, tobacco and transportation. This is consistent with the finding that female pensioners share more of their income with household members than male pensioners (Posel et al. 2006). This literature suggests that men and women, including pensioners, value household expenses and spend household income in different ways.

While income pooling may decrease the direct benefits of the pension to pensioners, recent research suggests that pension receipt improves health and wellbeing of pensioners, as well. Ardington and colleagues (2010) find that pensions buffer financial and emotional impacts of an adult child's death and the resulting carework for grandchildren left behind (Ardington et al. 2010). A study from the Eastern Cape shows older South Africans' (aged 60-plus) perceptions of their ability to provide care for children are primarily dependent on their knowledge about accessing pensions (Boon et al. 2010). Gómez-Olivé et al. (2010), using WHO-SAGE 2006 data from Agincourt, found that despite having aged, 60-69 year olds did not report significantly worse health status or function compared to 50-59 year olds. They suggest that the plateau in reported health and wellbeing may be related to receipt of pensions "which allow [pensioners] to have a better life with higher food security and, importantly, with higher capacity to help the children in their households who have also higher food security and higher schooling" (p.32). Schatz et al. (2012) extended the Gómez-Olivé et al. (2010) analysis by examining the same outcomes, but in 5-year rather than 10-year age groups. Across age and sex groups, the findings point to a greater impact

of pension eligibility on wellbeing for women than men, but with a transitory observed effect for both (Schatz et al. 2012).

This paper further extends work on the role of pensions in older persons lives to examine how policy changes and longitudinal data can provide additional insight into the relationship between pensions and wellbeing.

Data & Methods

We use data from the Agincourt Health and Demographic Surveillance System (Agincourt) census. The census, run by the MRC/University of the Witwatersrand Rural Public Health and Health Transitions Unit (Tollman, Director), has collected data annually from all households in the Agincourt sub-district since 1992. As of 2010, the site covered 27 villages—approximately 15,600 households and 89,000 individuals. Of these households, nearly one-third included at least one person aged 60-plus, and 6% had two or more pension-eligible persons.

WHO-SAGE survey sample size: In 2006, 8,429 people aged 50-plus were recorded in the Agincourt census (Gómez-Olivé et al., 2010; Kowal et al., 2010). Those who had been randomly selected to participate in a previous study (n=575) and those who were temporary migrants (n= 2,223), living for less than 6 months of each year in the study area, were excluded. The remaining 5,631 individuals were invited to participate in the WHO-SAGE study. A maximum of three visits were made; 4,085 individuals (response rate = 72.5%) participated in the study. Of those who did not complete a questionnaire, 458 had died or were too sick to respond, and only 47 (0.8%) declined to participate. The others could not be located. In 2010, 60% of the target population of approximately 10,000 completed the questionnaire with only 0.4% refusing. The rest either were not found at the time of the census (35%), ineligible (4%) or dead (1.6%). The resulting sample is approximately 5,980 individuals age 50 and above, about one-quarter of whom were male and three-quarters female.

The longitudinal sample consists of individuals 50-plus in 2006, with a total sample size of 3,284. In each of the three datasets, approximately three-fourths of the respondents are female—this is due to high male labor migration, even at older ages, and greater life expectancy for women in the site (Kathleen Kahn et al. 2007). In terms of age distribution, in the longitudinal dataset, 19.4% are aged 50-59, 30.8% are 60-69, 17.1% are aged 70-74, 32.7% are 75 or older.

Measures of pension-receipt: The 2006 survey did not gather information on pension receipt; in Schatz et al. (2012) we used pension-eligible age as a proxy (60-plus for women, 65-plus for men). While nearly all age-eligible Agincourt residents meet the means-test for pension receipt, not all have sufficient documentation to receive the pension. In 2010, a direct measure of pension receipt was included in the census. Under 12% report pension receipt at ages 55-59; the percentage of the population covered by the grant increases at the age of eligibility. Over 80% of people over 60 reports receiving the grant (Table 1).

Measures of health and wellbeing: We examine a number of indicators (Table 2) of

individual self-reported health and subjective wellbeing, as well as composite measures constructed by the WHO (Cieza, Bickenbach, and S Chatterji 2008; Reeve et al. 2007; WHOQoL Group 1993). Theses analyses hone in on important constructs of wellbeing that earlier qualitative data from the same research site indicate may be particularly affected by pension-receipt (Ogunmefun and Schatz 2009; Schatz 2007; Schatz and Ogunmefun 2007; Schatz, Madhavan, and Williams 2011).

WHO constructed two composite measures, each based on multiple questions in the WHO-SAGE survey and on a 0-100 scale, and returned the measures to the Agincourt team. (1) WHO defines quality of life as "the individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"(WHOQoL Group 1993). The *WHOQoL* (World Health Organization Quality of Life measure) is based on questions on self-rated general health and questions on satisfaction. (2) The *WHODAS* II (World Health Organization Disability Assessment Schedule II) scale assesses day-to-day functioning in six activity domains. Ten questions assess individuals' difficulty performing certain activities during the past 30 days.

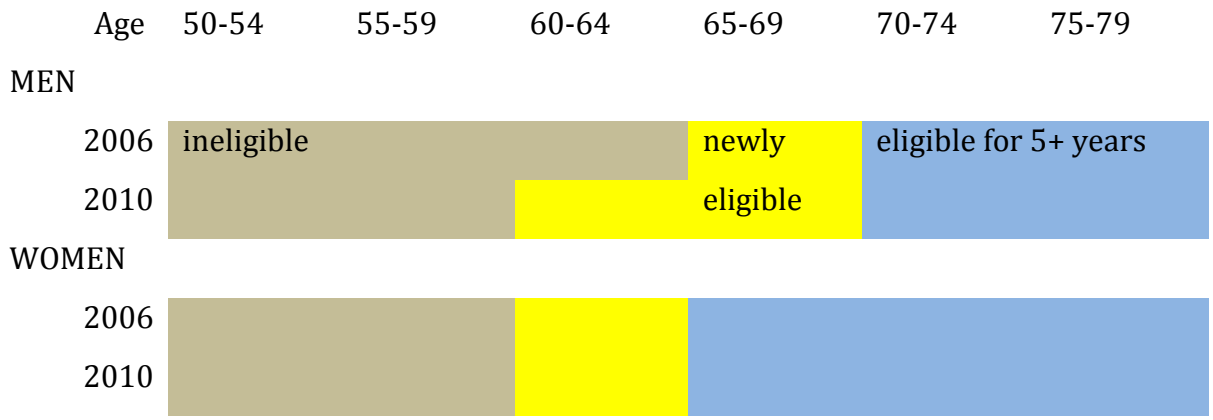
In earlier qualitative research in Agincourt, older women described several emotional states as being related to the burdens they faced (Schatz and Ogunmefun 2007; Schatz 2009; Schatz and Gilbert 2012; Thorogood et al. 2007). For this reason, we consider four additional measures based on single questions: (1) Overall in the last 30 days, how much of a problem did you have with feeling *sad*, low or depressed? (2) With *worry* or anxiety? (3) Taking all things together, how *satisfied* are you with your life as a whole these days? (4) How would you say you are these days in terms of *happiness*? The response scales have five categories.

We control for demographic and other individual characteristics of the population. They include household size, socio-economic status (SES), marital status, education, employment status, nationality of origin, and self-reported health. SES is determined from a household asset score derived from 34 variables collected in 2005 for the 2006 models and collected in 2009 for the 2010 models (including information about the type and size of dwelling, access to water and electricity appliances and livestock owned and transport available). The score was derived through principal component factor analysis and then divided into quintiles (Gómez-Olivé et al. 2010). Marriage unions in this area may be traditional, civic, or polygamous (a small minority). We dichotomize marital status—currently married or unmarried (those never married, separated, divorced, or widowed). Education is categorized as no formal education or some education. Employment status, collected for 2004 in the 2005 Agincourt census, and again for 2008 in the 2009 census, is coded as currently working or not. The majority of those not working were not looking for work but had retired, having concluded their working career. Employment status focused on those with permanent formal work, so may not capture those doing informal income-generating activities. "South African" captures self-identification as South African or Mozambican. Self-rated health is categorized as "bad" or not. These variables are included in regression models that add covariates to the more basic models focused on age, sex and pension receipt.

Analysis

We first describe characteristics of men and women by age groups in 2006 and 2010 (Tables 3A & 3B). We then present, separately for men and women, logistic regression models assessing relationships of wellbeing to age and time for respondents in 2006 and/or 2010. As there was no direct measure of pension receipt in 2006, we estimate models for 2010 only adding pension receipt and controls for individual and household characteristics.

Figure 1. Pension age-eligibility for men and women in 2006 and 2010



We estimate models of the form

(1) logit HW_{iy}

$= age\ effects + time*age\ interaction\ effects + time\ effect + covariate\ effects$

$= \beta_1 AG50\text{-}54_{iy} + \beta_3 AG60\text{-}64_{iy} + \beta_4 AG65\text{-}69_{iy} + \beta_5 AG70\text{-}74_{iy} + \beta_6 AG75+_{iy} +$
$\delta_1(T_y * AG50\text{-}54_{iy}) + \delta_2(T_y * AG55\text{-}59_{iy}) + \delta_3(T_y * AG60\text{-}64_{iy}) + \delta_4(T_y * AG65\text{-}69_{iy}) +$
$\delta_5(T_y * AG70\text{-}74_{iy}) + \delta_6(T_y * AG75+_{iy}) + \gamma T_y + XZ_{iy} + e_{iv}$

where *HW* is a measure of health or wellbeing of person *i* at time *y*. *AG*x is a binary variable used to indicate if person *i* is or is not in age group X at time *y*. *AG55-59*, prior to pension eligibility, is the reference category. *T* is a binary variable that takes on the value 1 if the observation is in 2010 and 0 if it is in 2006. *T*AGx* is the interaction between time and age group. Thus, the β_a represent age effects in the base year. The coefficient δ_1 is the difference in wellbeing in 2010 compared to 2006 for the 50-54-year old age group, δ_2 is the difference for the 55-59-year old age group, etc. The coefficient γ of *T* is the constant difference between 2006 and 2010. *X* is a vector of covariates (e.g. pension receipt, marital status, SES, etc.) and *Z* the vector of their coefficients. Finally, *e* is the error term. We treat individuals responding in both 2006 and 2010 as a cluster. When only one year is under consideration, time and time-age interactions are omitted. All outcome measures are calibrated so that, for dichotomous outcomes, 1 indicates that the respondent was worse off - referred to as "poor".

Results

Tables 3A for 2006 and 3B for 2010 (taken from Schatz et al. 2012) show characteristics of

men and women. In each table the age categories that corresponds with pension-eligibility are highlighted. The most notable change between tables 3A and 3B is that for men the shift in reported wellbeing at pension-eligibility (a smaller percentage report "poor" wellbeing than in the pre-pension-eligibility age category) mirrors the downward shift in age-eligibility. In other words, in 2006, a smaller percentage of men reported "poor" wellbeing in the 65-69 age category than in the 60-64 age group; where as in 2010, a smaller percentage of men in the 60-64 age category reported "poor" wellbeing than in the 55-59 age category. Thus, the pattern of changes over age-categories in reported wellbeing is more similar among men and women in 2010 than it was in 2006. These differences will be explored further through regression analysis controlling for time.

Table 4A for women and 4B for men show logistic regression models assessing relationships of wellbeing to age and time for respondents in 2006 and 2010. The models include five-year age groups, and interactions between time and age groups as predictors. The original models (not shown) contained all time/age-groups interactions; however, Tables 4A and 4B show reestimated models that retain only the significant interactions. For women, the odds of reporting poor wellbeing are lower in 2010 compared to 2006 (significant for all six measures). The decreased likelihood of reporting poor wellbeing at pension-eligible age is preserved – women aged 60-64 report significantly lower poor wellbeing for four of the six measures. For worry, unhappy, dissatisfied, and Poor WHOQOl, the odds at age 60-64 are significantly lower than at ages 55-59 (before pension-eligibility). The odds at older ages are higher – due either to a "honeymoon" effect (a diminution of the impact of pensions) or changes with age overwhelming a pension effect.

Table 4B shows that the odds of men reporting poor wellbeing are significantly lower in 2010 compared to 2006 for three of the six measures (worry, unhappy, and dissatisfied). There is a significant time* age60-64 interaction for four of the 6 outcome variables. In 2010, for the first time, men in this age group were pension-eligible – and they have a lower likelihood of reporting poor wellbeing compared to men in 2006. This finding, while supporting the hypothesis of a pension effect, is somewhat suspicious because the models also yield estimates of a very high, although nonsignificant, increase in odds of poor wellbeing at ages 60-64 in 2006 relative to those aged 55-59.

To understand further the effects of the pension on wellbeing, we requested that a direct question on pension receipt (and all grants) be included in the 2010 census. We therefore had additional leverage—a direct measure of pension receipt, rather than having to rely on age as a proxy. As described earlier (Table 1), over 80% of people over 60 report receiving the grant.

We consider pension receipt directly in Tables 5A (women) and 5B (men) for SAGE 2010 respondents by adding it to the regression models and controlling for individual and household characteristics. Table 5A shows for all measures (4 out of 6 significant) that women who were receiving the pension were less likely to be in the poor wellbeing category. This finding holds when self-reported bad health is omitted from the models (not shown). In strong contrast, pension receipt does not seem to affect wellbeing of men (Table 5B) significantly. While the odds associated with pension receipt are all greater than one

and those associated with the early ages of pension eligibility (60-64 and 65-69) are all less than one, they are not significant, alone or jointly. For men, self-reported bad health is uniformly a highly significant predictor of poor wellbeing. It is possible that the smaller sample size for men compared to women prevents detection of pension effects, but consistently the odds are close to one for those receiving the pension compared to those who are not.

We note that unmarried women uniformly have higher odds of poor wellbeing, as do South African native women for four of the six measures. Non-marriage is quite prevalent – in both 2006 and 2010, over 40% of women aged 50-54 were unmarried and the percent rose substantially with age.

Finally, we note that our analysis demonstrates that age does not serve as a good proxy for pension receipt. Our original intention was to examine change in status for those who responded to both the 2006 and the 2010 SAGE questionnaires; we do not do so because we have shown that it is incorrect to infer pension status from age.

Discussion

The analysis above provides new insights into the relationships between gender, pensions and wellbeing. First, the effect of pension receipt appears to be strongly gendered, affecting only women's wellbeing. Second, both men and women were less likely to report poor wellbeing in 2010 compared to 2006. Third, consistent with the findings of Schatz et al. (2012) and Gómez-Olivé et al. (2010), we note important effects of additional individual characteristics on wellbeing, mainly marital status and self-reported bad health. When covariates are included in the models, few important age differences remain. Finally, the "honeymoon" effect that was so prominent in 2006 with "improved" wellbeing at pension-eligibility and then a significant decline post-eligibility is not evident. There were no significant age interactions - the previous finding of effect diminishing with age is due to a constant pension effect combined with a rise in poor wellbeing with age.

Pension receipt influences men's and women's report of wellbeing differently. Importantly, men seem to have no pension effect, whereas for women, pension receipt is associated with 16-31% fewer reporting low levels of wellbeing depending on the measure used. This research serves as evidence that pensions may matter more for women's perceived wellbeing than for men's because of differences in gender roles and gendered stresses. Women are often more directly tied to household responsibilities and daily tasks. Munthree and Maharaj (2010) found that women reported much more time and energy spent on caregiving than men due to a clear gendered division of labor within families. Evidence from qualitative work focusing on women's experiences in the study site suggests that those without access to the pension worry more about making ends meet for their household (Ogunmefun and Schatz 2009). Furthermore, previous research finds that the presence of a pensioner, particularly of a woman, enhances the wellbeing of other household members (Ardington et al. 2010; Burns et al. 2005; Duflo 2003). Women are less likely to have been working prior to pension receipt, and thus may be in more need of the income. In addition, pensions may allow women to fulfill caregiving and social

reproduction roles, and thus reduce worry and sadness while improving their perceptions of their overall happiness and satisfaction with their lives.

Furthermore, the lack of a pension effect on men's wellbeing may be due to gendered differences in spending habits. Previous research shows that despite having less income overall, when women control income, they often favor spending money on food, clothing, and support of grandchildren over other expenditures (Case and Deaton 1998; Posel et al. 2006). The largest differences, however, were that female household heads spent considerably less than male household heads on alcohol, tobacco and transportation. This is consistent with the finding that female pensioners share more of their income with household members than male pensioners (Posel et al. 2006). This literature suggests that men and women, including pensioners, value household expenses and spend household income in different ways. Therefore, men receiving pensions may not reduce reported poor wellbeing due how the income is used, and in fact may be contributing further to their poor health by using their pension for alcohol and tobacco.

We also note important effects of additional individual characteristics on wellbeing, mainly marital status and self-reported bad health. Women who are unmarried uniformly report poorer wellbeing, which is cause for concern as over 40% of women aged 50-54 were unmarried and the percent rises substantially with age. Therefore, married older men, may have more resources and assistance on which they can draw than have older women (Ezeh, Chepngeno, Kasiira, & Woubalem 2006; UN 2010), which may be why pension receipt does not have a significant effect on men's wellbeing. For both men and women and each measure, self‐reported "bad health" had a strong and highly significant association. This is to be expected given the connections between social and physical wellbeing (Kendell 2009; Patel et al. 2004; Gilbert and Soskolne 2003). The strength of this relationship can be considered a validity measure of the other relationships that we show.

Thus our story differs from previously: yes, women receiving a pension are less likely to report poor wellbeing, but there is no detectable "honeymoon" effect when information on actual pension receipt rather than its imperfect proxy, pension-eligible age, is used. Instead, the pension seems to have a uniform effect at all ages; the observed muting of the effect of pension *eligibility* is due to poor wellbeing increasing with age. For men, pension receipt is unrelated to measures of wellbeing – the policy shift did not measurably affect men's wellbeing. The consistency of this finding argues against the failure being due to small sample size. It may, however, relate to the short time period between SAGE rounds.

Future research utilizing the currently available data will investigate how pension receipt influences household wellbeing controlling for sex of the pensioner and household characteristics. Because of the short time period between SAGE rounds and the lack of direct pension data in 2006, we do not believe that these data provide definitive results for the question of pension effects on the wellbeing of men. The next round of SAGE data collection will again gather information on pension receipt and provide a better basis for addressing this issue.

Works cited

Anderson, B.A., and H.E. Phillips. 2006. *Adult mortality (age 15-64) based on death notification data in South Africa: 1997-2004*. Pretoria: Statistics South Africa Retrieved (internal-pdf://Report-03-09-052004-2315590144/Report-03-09-052004.pdf).

Ardington, Cally et al. 2010. "The impact of AIDS on intergenerational support in South Africa: Evidence from the Cape Area Panel Study." *Research on Aging* 32(1):97 –121. Retrieved July 28, 2010.

Barrientos, Amando. 2003. *Non-contributory pensions and poverty prevention: A comparative study of Brazil and South Africa*.

Booysen, Frederik, and Servaas van der Berg. 2005. "The role of social grants in mitigating socio-economic impact of HIV/AIDS in two Free State communities." *South African Journal of Economics* 73(s1):545–563. Retrieved February 26, 2010.

Calasanti, Toni. 2008. "Theorizing Feminist Gerontology, Sexuality, and Beyond: An Intersectional Approach." Pp. 471–485 in *Handbook of Theories of Aging, Second Edition*, edited by Merril Silverstein, Vern L. Bengtson, Norella Putney, and Daphna Gans. Springer Publishing Company.

Case, Anne, and Angus Deaton. 1998. "Large cash transfers to the elderly in South Africa." *The Economic Journal* 108(September):1330–1361.

Case, Anne, and Alicia Menendez. 2007. "Does money empower the elderly? Evidence from the Agincourt demographic surveillance site, South Africa1." *Scandinavian Journal of Public Health* 35(69 suppl):157 –164. Retrieved March 24, 2011.

Cieza, A, J Bickenbach, and S Chatterji. 2008. "The ICF as a conceptual platform to specify and discuss health and health-related concepts." *Gesundheitswesen (Bundesverband der Ärzte des Öffentlichen Gesundheitsdienstes (Germany))* 70(10):e47–56. Retrieved September 10, 2012.

Duflo, E. 2003. "Grandmothers and granddaughters: Old-age pension and intra-household allocation in South Africa." *World Bank Economic Review* 17(1-25).

Gomez-Olive, F. Xavier, Margaret Thorogood, Benjamin Clark, Kathleen Kahn, and Stephen Tollman. 2010. "Assessing health and well-being among older people in rural South Africa." *Global Health Action* 3(Supplement 2). Retrieved (www.globalhealthaction.net).

Ice, Gillian H., Jaja Yogo, Victor Heh, and Elizabeth Juma. 2010. "The impact of caregiving on the health and well-being of Kenyan Luo grandparents." *Research on Aging* 32(1):40 –66. Retrieved July 28, 2010.

Kahn, K et al. 2006. “Older adults and the health transition in Agincourt, rural South Africa: New understanding, growing complexity.” in *Aging in Sub-Saharan Africa: Recommendations for furthering research*. National Academies Press.

Kahn, Kathleen, Michel L Garenne, Mark A Collinson, and Stephen M Tollman. 2007. “Mortality trends in a new South Africa: hard to make a fresh start.” *Scandinavian journal of public health. Supplement* 69:26–34.

Kakwani, Nanak, and Kalanidhi Subbarao. 2005. *Ageing and poverty in Africa and the role of social pensions*. Brazil: UNDP International Poverty Centre Retrieved August 3, 2009 (http://www.ipc-undp.org/pub/IPCWorkingPaper8.pdf).

Kowal, Paul et al. 2010. “Ageing and adult health status in eight lower-income countries: the INDEPTH WHO-SAGE collaboration.” *Global Health Action* 3. Retrieved October 6, 2010 (http://www.globalhealthaction.net/index.php/gha/article/viewArticle/5302).

Lombard, Antoinette, and Elma Kruger. 2009. “Older persons: The case of South Africa.” *Ageing International* 34(3):119–135.

May, Julian. 2003. “Chronic poverty and older people in South Africa.” *Chronic Poverty Research Centre* Working paper 25.

Mayosi, Bongani M et al. 2009. “The burden of non-communicable diseases in South Africa.” *The Lancet* 374(9693):934–947.

Ogunmefun, Catherine, and Enid Schatz. 2009. “Caregivers’ sacrifices: The opportunity costs of adult morbidity and mortality for female pensioners in rural South Africa.” *Development Southern Africa* 26(1):95–109.

Rakodi, Carole. 2002. “A livelihoods approach-Conceptual issues and definitions.” in *Urban Livelihoods: A People-Centred Approach to Reducing Poverty*, edited by Carole Rakodi and Tony Lloyd. Earthscan Publications Ltd.

Reeve, Bryce, Ron Hays, Chih-Hung Chang, and Eleanor Perfetto. 2007. “Applying item response theory to enhance health outcomes assessment.” *Quality of Life Research* 16(0):1–3. Retrieved September 10, 2012.

Schatz, Enid. 2009. “Reframing vulnerability: Mozambican refugees’ access to state-funded pensions in rural South Africa.” *Journal of Cross-Cultural Gerontology* 24(3):241–258.

Schatz, Enid. 2007. “‘Taking care of my own blood’: older women’s relationships to their households in rural South Africa.” *Scandinavian Journal of Public Health* 35(Suppl 69):147–154.

Schatz, Enid, and Leah Gilbert. 2012. "'My heart is very painful': Physical, mental and social wellbeing of older women at the times of HIV/AIDS in rural South Africa." *Journal of Aging Studies* 26(1):16–25. Retrieved February 7, 2012.

Schatz, Enid, F. Xavier Gómez-Olivé, Margaret Ralston, Jane Menken, and Stephen Tollman. 2012. *Men, pensions and wellbeing in rural South Africa: Tracking effects through policy shifts*. University of Colorado.

Schatz, Enid, Xavier Gómez-Olivé, Margaret Ralston, Jane Menken, and Stephen Tollman. 2012. "The impact of pensions on health and wellbeing in rural South Africa: Does gender matter?" *Social Science & Medicine* 75(10):1864–1873. Retrieved September 13, 2012.

Schatz, Enid, Sangeetha Madhavan, and Jill Williams. 2011. "Female-headed households contending with HIV/AIDS-related hardship in rural South Africa." *Health & Place* 17:598–605.

Schatz, Enid, and Catherine Ogunmefun. 2007. "Caring and contributing: the role of older women in multi-generational households in the HIV/AIDS era." *World Development* 35(8):1390–1403.

Scoones, Ian. 1998. *Sustainable rural livelihoods: A framework for analysis*. Institute of Development Studies.

South Africa Department of Health. 2011. *2010 National antenatal sentinel HIV and syphilis prevalence survey in South Africa*. Health Systems Trust Retrieved (www.hst.org.za/publications/).

Thorogood, Margaret, Myles Connor, Gillian Lewando Hundt, and Stephen Tollman. 2007. "Understanding and managing hypertension in an African sub-district: A multi-disciplinary approach." *Scandinavian Journal of Public Health* 35(Suppl 69):52–59.

WHOQoL Group. 1993. "Study protocol for the World Health Organization project to develop a Quality of Life assessment instrument (WHOQOL)." *Quality of life research: an international journal of quality of life aspects of treatment, care and rehabilitation* 2(2):153–159. Retrieved September 13, 2012.

Table 1. Percent Reporting Pension Receipt by Sex and 5-Year Age Group Agincourt HDSS and SAGE 2010

	Men	Women
50 to 54	3.3 (7/213)	2.2 (18/814)
55 to 59	11.5 (28/247)	10.7 (80/751)
60 to 64	71.7 (192/268)	78.8 (515/654)
65 to 69	84.4 (194/230)	84.6 (502/594)
70 to 74	88.1 (216/245)	86.6 (487/562)
75 plus	83.2 (277/334)	86.1 (956)/1110)
Percent of 50+ reporting pension	59.5	57.1
Percent of Pension Eligible (60+) reporting pension	81.7	84.2
N	1,537	4,485

Table 2. Wellbeing Measures

Variable*	Original coding	Dichotomous Recoding
Sad	None Mild	0=none/mild
	Moderate Severe Extreme	1= at least some sad
Worry	None Mild	0=none/mild
	Moderate Severe Extreme	1= at least some worry
Unhappy	Very happy Happy	0= happy
	Neither Unhappy Very unhappy	1=at least some unhappy
Dissatisfied	Very satisfied Satisfied	0= satisfied
	Neither Dissatisfied Very dissatisfied	1= at least some dissatisfied
Variable	Components	Dichotomous recoding of quintiles
WHODASi (Function)	Interpersonal activities, Difficulties in daily living: Standing, Walking, Household duties, Learning, Concentrating, Self-care *Scale 0 (low ability) to 100 (high ability)*	0=60% best WHODASi 1=40% worst WHODASi
WHOQoL (Quality of Life)	Enough energy for daily life, Enough money to meet needs, Satisfaction with: Your health, Yourself, Ability to perform daily activities, Personal relationships, Condition of your living space, Rate your overall quality of life *Scale 0 (low QOL) to 100 (high QOL)*	0=60% best WHOQoL 1=40% worst WHOQoL

*Questions translated into Shangaan for WHO-SAGE: *Overall in the last 30 days, how much of a problem did you have… **SAD**:…with feeling sad, low or depressed?; **WORRY**: … with worry or anxiety?; **UNHAPPY**: Taking all things together, how would you say you are these days?; **DISSATISFIED**: Taking all things together, how satisfied are you with your life as a whole these days?*

Table 3A. Background Characteristics and Wellbeing by Sex and 5-Year Age Group, Agincourt HDSS and SAGE 2006
Recent pension-eligible age highlighted

	MEN						WOMEN					
	50-54	**55-59**	**60-64**	***65-69***	**70-74**	**75+**	**50-54**	**55-59**	***60-64***	**65-69**	**70-74**	**75+**
Mean household size	6.6	6.3	7.3	*7.0*	6.9	6.0	8.3	8.0	*7.5*	7.0	6.5	6.4
Mean percent of household under 15	26.4	20.9	22.3	*21.5*	21.3	19.0	30.0	26.5	*26.0*	26.3	25.3	23.9
Socio-economic status (quintiles)												
First (lowest)	13.4	16.0	17.0	*9.8*	18.3	17.1	13.9	12.8	*9.8*	13.6	17.4	17.2
Second	21.4	18.4	14.2	*10.3*	13.3	16.3	15.9	16.4	*17.4*	16.8	21.4	23.3
Third	16.1	17.6	27.4	*20.1*	13.3	19.1	20.9	22.4	*17.9*	23.8	18.9	18.0
Fourth	16.1	18.4	11.3	*29.3*	23.3	19.1	23.9	19.2	*25.8*	24.9	22.6	23.4
Fifth (highest)	33.0	29.6	30.2	*30.5*	31.7	28.5	25.4	29.2	*29.1*	20.9	19.7	18.2
Percent unmarried	25.9	24.0	18.9	*19.5*	20.0	23.6	43.9	49.8	*53.8*	64.4	75.4	84.3
Percent with no formal education	36.6	42.4	44.3	*53.5*	65.8	70.7	50.4	54.6	*57.2*	71.5	85.1	84.6
Percent working in 2004	39.3	29.6	36.8	*17.8*	15.0	5.7	26.1	24.0	*16.4*	8.6	5.4	2.2
Percent South African	82.3	79.9	83.8	*75.4*	72.0	68.8	73.1	71.0	*75.6*	71.4	67.6	71.1
Percent bad self-rated health	12.5	16.0	22.6	*21.8*	10.8	17.5	9.4	13.0	*12.2*	15.2	18.3	24.7
Wellbeing variables (Percent scored 1)												
Sad	39.3	35.2	44.3	*35.1*	34.2	43.1	45.0	44.8	*39.1*	47.9	52.3	51.1
Worry	50.9	42.4	50.9	*39.1*	40.0	49.2	52.6	57.1	*44.0*	55.8	59.1	60.7
Dissatisfied	30.0	29.0	39.3	*32.4*	31.6	34.4	32.6	33.7	*23.6*	29.8	36.8	39.0
Unhappy	34.3	27.7	38.3	*27.7*	28.7	37.8	33.2	33.4	*25.5*	32.9	36.3	39.3
Poor WHODASi	28.4	30.9	30.8	*29.6*	32.2	40.9	30.7	35.1	*29.5*	41.6	50.8	60.1
Poor WHOQoL	37.9	31.6	41.9	*34.7*	35.9	41.7	39.4	41.4	*30.6*	38.3	45.3	50.0
N	112	125	106	*174*	120	246	460	438	*409*	382	350	644

Table 3B. Background Characteristics and Wellbeing by 5-Year Age Group for Women and Men in 2010, Agincourt HDSS and SAGE
Recent pension-eligible age highlighted

	Men						Women					
	50-54	**55-59**	***60-64***	**65-69**	**70-74**	**75+**	**50-54**	**55-59**	***60-64***	**65-69**	**70-74**	**75+**
Mean household size	6.1	6.9	*7.4*	8.6	6.7	6.0	8.2	8.1	*7.7*	7.2	6.6	6.4
Mean percent of household under 15	24.4	21.9	*20.9*	25.9	18.2	17.8	27.5	26.7	*25.4*	25.6	25.2	22.0
Socio-economic status (quintiles)												
First (lowest)	19.6	20.0	*14.9*	11.7	14.4	20.4	15.3	12.2	*15.4*	13.2	17.0	21.1
Second	16.8	17.5	*16.8*	15.2	17.3	22.6	19.3	19.7	*20.0*	21.1	23.3	22.5
Third	20.1	19.6	*20.6*	23.3	21.4	22.3	23.0	20.9	*20.2*	23.1	22.4	21.2
Fourth	14.8	22.5	*19.5*	17.5	16.1	18.3	20.5	20.8	*18.2*	20.5	19.0	18.2
Fifth (highest)	28.7	20.4	*28.2*	32.3	30.9	16.4	21.9	26.5	*26.2*	22.1	18.3	17.0
Percent unmarried	29.2	22.6	*22.4*	19.3	25.8	31.7	40.5	49.1	*58.5*	62.3	73.5	82.4
Percent with no formal education	34.6	40.3	*49.0*	55.7	54.8	71.8	47.5	52.4	*55.6*	63.9	82.5	88.8
Percent working (2008)	55.1	47.6	*40.4*	25.9	12.1	6.7	33.1	30.8	*20.0*	8.9	5.0	3.4
Percent bad self-rated health	13.6	11.9	*12.1*	15.7	14.3	20.5	13.5	15.3	*16.4*	17.5	22.5	28.7
Percent South African	75.1	73.3	*69.8*	68.3	71.7	64.8	67.7	73.5	*69.9*	73.0	64.6	66.4
Wellbeing variables (Percent scored 1)												
Sad	33.0	37.5	*26.4*	27.4	38.7	38.8	39.0	38.1	*38.3*	38.2	45.5	48.1
Worry	40.5	40.1	*32.1*	31.7	40.7	41.7	45.1	43.6	*39.5*	41.1	48.7	51.6
Dissatisfied	20.7	19.0	*15.5*	19.2	17.8	25.5	19.5	21.2	*18.2*	21.1	24.0	31.6
Unhappy	25.4	25.1	*20.8*	17.4	25.8	30.9	27.3	27.0	*25.6*	28.4	29.1	34.7
Poor WHODASi	26.3	27.6	*22.6*	26.5	33.6	44.0	29.7	29.5	*31.1*	36.0	45.2	57.4
Poor WHOQoL	36.2	32.5	*24.5*	28.7	29.1	41.0	34.6	38.4	*30.7*	31.8	39.3	50.3
N	213	243	*265*	230	244	327	807	747	*652*	589	560	1,100

Table 4A. Relationship of Poor Health and Wellbeing Measures to Age and Time Period
WOMEN: Agincourt HDSS and SAGE 2006 and 2010
Logistic regression odds ratios and (95% robust confidence intervals)[1]

	SAD	WORRY	UNHAPPY	DISSATISFIED	POOR WHODASi	POOR WHOQOL
Time2010	0.78***	0.67***	0.81***	0.58***	0.88**	0.89*
	(0.72 - 0.86)	(0.62 - 0.74)	(0.74 - 0.89)	(0.51 - 0.65)	(0.80 - 0.97)	(0.81 - 0.98)
Age Groups						
50-54	1.01	0.98	1.01	0.91	0.93	0.89
	(0.856- 1.18)	(0.84 - 1.14)	(0.85 - 1.19)	(0.76 - 1.09)	(0.79 - 1.10)	(0.76 - 1.04)
55-59 (omitted)	-	-	-	-		-
60-64	0.89	0.73***	0.83*	0.72***	0.94	0.68***
	(0.75- 1.05)	(0.62 - 0.86)	(0.69 - 0.99)	(0.59 - 0.87)	(0.79 - 1.13)	(0.57 - 0.80)
65-69	1.04	0.93	1.03	0.89	1.35***	0.79**
	(0.88 - 1.23)	(0.79 - 1.10)	(0.85 - 1.24)	(0.73- 1.08	(1.13 - 1.61)	(0.66 - 0.94)
70-74	1.33**	1.19*	1.11	1.17	1.96***	1.11
	(1.12 - 1.57)	(1.00 - 1.41)	(0.93 - 1.34)	(0.97 - 1.41)	(1.64 - 2.33)	(0.93 - 1.32)
75plus	1.39***	1.27**	1.37***	1.29*	3.06***	1.53***
	(1.20 - 1.61)	(1.10- 1.48)	(1.17 - 1.61)	(1.05 - 1.59)	(2.62 - 3.57)	(1.32 - 1.78)
Time2010*Age 75-plus				1.26*		
				(1.01 - 1.57)		
N	7536	7486	7503	7533	7537	7535

[1] Models were first estimated with all time*age-group interactions. Interactions that were jointly non-significant were deleted and the models re-estimated. For all dependent variables, significance of the coefficient for age 60-64 was unchanged.
Robust regressions included clustering on individual for those who were measured in both 2006 and 2010.
p>.05, *p<=.05, **p<=.01, ***p<=.001

Table 4B. Relationship of Poor Health and Wellbeing Measures to Age and Time Period
MEN: Agincourt HDSS and SAGE 2006 and 2010
Logistic regression odds ratios and (95% robust confidence intervals)[1]

	SAD	WORRY	UNHAPPY	DISSATISFIED	POOR WHODASi	POOR WHOQOL
Time2010	0.84	0.76**	0.72***	0.57***	0.99	0.89
	(0.71 - 1.00)	(0.64 - 0.90)	(0.60 - 0.87)	(0.47 - 0.69)	(0.83 - 1.19)	(0.75 - 1.06)
Age Groups						
50-54	0.94	1.11	1.12	1.07	0.88	1.18
	(0.69-1.27)	(0.82 – 1.49)	(0.81 – 1.56)	(0.76 – 1.51)	(0.63 - 1.22)	(0.87 – 1.59)
55-59 (omitted)	-	-	-	-	-	-
60-64	1.20	1.14	1.43	1.54	1.08	1.45
	(0.78 - 1.85)	(0.74 - 1.76)	(0.91 - 2.26)	(0.97 - 2.43)	(0.68- 1.72)	(0.93 - 2.26)
65-69	0.78	0.79	0.74	1.06	0.89	0.90
	(0.58 - 1.04)	(0.60 - 1.05)	(0.53 - 1.02)	(0.77 - 1.47)	(0.66 - 1.20)	(0.67 - 1.21)
70-74	1.02	0.96	1.07	1.09	1.25	1.02
	(0.76- 1.37)	(0.72 - 1.28)	(0.77 - 1.48)	(0.78 - 1.52)	(0.92 - 1.70)	(0.75 - 1.38)
75plus	1.21	1.15	1.39*	1.36*	1.78***	1.43**
	(0.93 - 1.57)	(0.89 - 1.48)	(1.04 - 1.85)	(1.01 - 1.83)	(1.36 - 2.34)	(1.09 - 1.88)
	0.53*	0.63	0.58*	0.51*	0.65	0.49**
Time2010*Age60-64	(0.33 - 0.88)	(0.39 – 1.02)	(0.35 -0.97)	(0.30 - 0.86)	(0.33 - 0.53)	(0.30 - 0.80)
N	2542	2528	2521	2532	2539	2537

[1] Models were first estimated with all time*age-group interactions. Interactions that were jointly non-significant were deleted and the models re-estimated. We note that no age coefficients were significant in models with no time*age interactions. Robust regressions included clustering on individual for those who were measured in both 2006 and 2010.

NS p>.05, *p<=.05, **p<=.01, ***p<=.001

Table 5A. Relationship of Poor Health and Poor Wellbeing Measures to pension receipt and other characteristics
Women: Agincourt HDSS and SAGE 2010 Logistic regression odds ratios and (95% robust confidence intervals)

	SAD	WORRY	UNHAPPY	DISSATISFIED	POOR WHODASi	POOR WHOQOL
Pension receipt	0.84	0.78*	0.70**	0.83	0.76*	0.69**
	(0.67 - 1.05)	(0.62 - 0.97)	(0.55 - 0.89)	(0.64 - 1.07)	(0.61 - 0.96)	(0.55 - 0.87)
Age Groups						
50-54	1.04	0.99	1.10	0.88	1.09	0.85
	(0.82 - 1.31)	(0.79 - 1.24)	(0.85 - 1.42)	(0.66 - 1.16)	(0.86 - 1.40)	(0.67 - 1.08)
55-59 (omitted)	-	-	-	-	-	-
60-64	1.05	0.88	1.13	0.89	1.21	0.78
	(0.79 - 1.41)	(0.66 - 1.17)	(0.82 - 1.56)	(0.63 - 1.27)	(0.89 - 1.64)	(0.57 - 1.05)
65-69	1.03	0.94	1.29	1.01	1.51*	0.82
	(0.75 - 1.40)	(0.70 - 1.27)	(0.93 - 1.81)	(0.70 - 1.45)	(1.10 - 2.08)	(0.60 - 1.13)
70-74	1.35	1.19	1.19	1.13	2.07***	1.03
	(0.98 - 1.85)	(0.87 - 1.63)	(0.84 - 1.68)	(0.78 - 1.63)	(1.49 - 2.86)	(0.74 - 1.42)
75plus	1.30	1.29	1.29	1.48*	3.01***	1.39*
	(0.97 - 1.74)	(0.97 - 1.72)	(0.94 - 1.77)	(1.06 - 2.07)	(2.23 - 4.08)	(1.03 - 1.88)
Unmarried	1.34***	1.18*	1.44***	1.36***	1.30***	1.24**
	(1.15 - 1.56)	(1.02 - 1.37)	(1.21 - 1.70)	(1.13 - 1.63)	(1.11 - 1.51)	(1.06 - 1.44)
Bad Health	3.37***	2.74***	3.64***	3.08***	3.21***	4.86***
	(2.84 - 4.01)	(2.30 - 3.26)	(3.06 - 4.33)	(2.58 - 3.68)	(2.69 - 3.82)	(4.06 - 5.82
No education	0.99	1.00	1.05	0.93	1.09	1.15
	(0.85 - 1.17)	(0.85 - 1.18)	(0.88 - 1.26)	(0.77 - 1.12)	(0.92 - 1.29)	(0.97 - 1.36)
High SES	0.91	0.95	0.96	1.24	0.95	1.07
	(0.74 - 1.13)	(0.78 - 1.17)	(0.76 - 1.21)	(0.97 - 1.58)	(0.76 - 1.17	(0.86 - 1.33)
Medium SES	1.16	1.21	1.04	1.12	0.90	1.11
	(0.95 - 1.43)	(0.99 - 1.48)	(0.83 - 1.31)	(0.88 - 1.43	(0.73 - 1.11)	(0.89 - 1.38)
Low SES	1.11	1.13	0.92	0.95	0.80	1.10
	(0.90 - 1.38)	(0.92 - 1.40)	(0.73 - 1.17)	(0.73 - 1.23)	(0.64 - 1.00)	(0.88 - 1.38)
Lowest SES	0.96	1.14	1.32*	0.97	0.90	1.24
	(0.74 - 1.23)	(0.89 - 1.46)	(1.01 - 1.73)	(0.72 - 1.31)	(0.70 - 1.16)	(0.96 - 1.61)
Household size	0.99	0.99	0.98*	0.98*	0.98*	0.98*
	(0.97 - 1.00)	(0.97 - 1.00)	(0.96 - 1.00)	(0.95 - 1.00)	(0.96 - 1.00)	(0.96 - 1.00)
Working	0.83	0.89	1.02	0.99	0.87	0.84
	(0.68 - 1.01)	(0.74 - 1.08)	(0.82 - 1.26)	(0.78 - 1.25)	(0.71 - 1.06)	(0.68 - 1.03)
South African	1.26**	1.57***	1.05	1.17	1.27**	1.23*
	(1.06 - 1.49)	(1.33 - 1.86)	(0.88 - 1.27)	(0.96 - 1.43)	(1.07 - 1.51)	(1.03 - 1.47)
N		3745	3749	3749	3750	3750

*p<=.05 **p<=.01, ***p<=.001

Table 5B. Relationships of Poor Health and Poor Wellbeing Measures to pension receipt and other characteristics
Men: Agincourt HDSS and SAGE 2010 Logistic regression odds ratios and (95% robust confidence intervals)

	SAD	WORRY	UNHAPPY	DISSATISFIED	POOR WHODASi	POOR WHOQOL
Pension receipt	1.09	1.00	0.96	1.31	1.24	1.07
	(0.76 - 1.56)	(0.71 - 1.41)	(0.65 - 1.42)	(0.85 - 2.03)	(0.85 - 1.82)	(0.73 - 1.57)
Age Groups						
50-54	0.89	1.07	0.78	0.97	0.80	1.31
	(0.56 - 1.41)	(0.69 - 1.66)	(0.47 - 1.31)	(0.54 - 1.72)	(0.48 - 1.33)	(0.81 - 2.12)
55-59 (omitted)	-	-	-	-	-	-
60-64	0.62	0.74	0.86	0.69	0.61	0.69
	(0.38 - 1.00)	(0.47 - 1.17)	(0.51 - 1.46)	(0.38 - 1.26)	(0.36 - 1.03)	(0.41 - 1.16)
65-69	0.66	0.68	0.62	0.89	0.63	0.69
	(0.39 - 1.10)	(0.41 - 1.12)	(0.35 - 1.12)	(0.48 – 1.65)	(0.36 - 1.10)	(0.40 – 1.20)
70-74	1.04	0.96	1.06	0.62	0.84	0.69
	(0.62 - 1.74)	(0.58 - 1.57)	(0.60 - 1.88)	(0.32 - 1.19)	(0.49 - 1.45)	(0.39 - 1.21)
75plus	0.81	0.87	1.08	0.96	1.18	0.94
	(0.50 - 1.33)	(0.54 - 1.40)	(0.63 - 1.85)	(0.53 - 1.73)	(0.71 – 1.98)	(0.56 - 1.58)
Unmarried	1.09	1.46**	1.49*	1.18	1.12	1.10
	(0.81 - 1.46)	(1.10 - 1.94)	(1.08 - 2.05)	(0.83 - 1.68)	(0.83 - 1.53)	(0.81 - 1.51)
Bad Health	3.16***	2.28***	3.73***	4.14***	3.82***	6.39***
	(2.29 - 4.36)	(1.66 - 3.13)	(2.68 - 5.18)	(2.94 - 5.81)	(2.75 - 5.31)	(4.54 – 9.00)
No education	1.25	1.15	1.27	1.27	1.26	1.61***
	(0.96 - 1.63)	(0.89 - 1.48)	(0.95 - 1.70)	(0.92 - 1.75)	(0.95 - 1.66)	(1.21 - 2.13)
High SES	1.23	0.96	0.87	1.34	0.96	1.05
	(0.85 - 1.78)	(0.67 - 1.37)	(0.56 - 1.33)	(0.85 - 2.10)	(0.65 - 1.42)	(0.71 - 1.57)
Medium SES	1.14	0.95	1.30	1.05	1.03	1.36
	(0.80 - 1.63)	(0.67 - 1.33)	(0.88 - 1.92)	(0.67 - 1.64)	(0.71 - 1.50)	(0.93 - 1.97)
Low SES	1.42	1.38	1.16	1.47	1.23	1.20
	(0.96 - 2.08)	(0.95 - 2.00)	(0.75 - 1.79)	(0.93 - 2.33)	(0.82 - 1.84)	(0.79 - 1.81)
Lowest SES	1.46	1.46	1.71*	1.06	1.04	1.22
	(0.96 - 2.25)	(0.97 - 2.21)	(1.07 - 2.73)	(0.63 - 1.80)	(0.66 - 1.64)	(0.78 - 1.92)
Household size	0.98	1.02	1.01	0.97	0.97	0.99
	(0.95 - 1.02)	(0.98 - 1.05)	(0.97 - 1.05)	(0.94 - 1.01)	(0.94 - 1.01)	(0.96 - 1.02)
Working	0.7	0.75	0.98	0.89	0.58**	0.71*
	(0.56 - 1.02)	(0.57 - 1.01)	(0.70 - 1.37)	(0.62 - 1.29)	(0.42 - 0.81)	(0.52 - 0.98)
South African	1.28	1.35*	1.27	0.91	1.27	1.01
	(0.95 - 1.74)	(1.00 - 1.81)	(0.90 - 1.79)	(0.63 - 1.31)	(0.92 - 1.75)	(0.73 - 1.38)
N	1307	1303	1302	1302	1302	1302

*p<=.05 **p<=.01, ***p<=.001