



## Effects of ageing, chronic disease and co-morbidity on the health and well-being of older residents of Greater Tshwane

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**To the Editor:** In 1948, the World Health Organization defined health as being 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'.<sup>1</sup> This definition was considered revolutionary at the time and provided a complementary approach to the traditional disease-specific medical model. The focus on physical health and well-being reflects a broadening of scope of outcome measures; it places the patient perspective as central to monitoring health care outcomes, and influences the planning, delivery and evaluation of social, health and medical services, since improved health and well-being are desired outcomes of service delivery.<sup>2-4</sup>

A popular measure of health-related quality of life is the 36-item short-form (SF-36), which was developed for use in clinical practice and research, health policy evaluation and general population surveys. The SF-36 comprises 8 health concepts: physical, social and role functioning, bodily pain, mental health, general health perceptions and vitality.<sup>5</sup> Data from the SF-36 Medical Outcomes Study in the USA were subjected to extensive statistical, psychometric and clinical testing to determine whether physical and mental health items were the underlying dimensions of health-related quality of life.<sup>6,7</sup> Findings indicated that only 12 items were needed to reliably and validly assess physical health (6 items) and well-being (6 items), now known as the SF-12. The scoring system orients all items so that a higher score represents better health and well-being. Scores are summed on the two sub-scales and transformed linearly from 0 to 100. Reliability (internal consistency) coefficients for South African diabetic patients were 0.95 (physical health) and 0.88 (well-being).<sup>8</sup> Diabetic patients were significantly more likely ( $p < 0.01$ ) to rate their health and well-being as poorer than persons with no self-reported chronic conditions and co-morbidity, rather than one chronic condition having led to significant decrements in health and well-being.<sup>9</sup>

There is a growing international and local body of evidence that functioning and physical health declines with advancing

age and/or chronic disease status and co-morbidity.<sup>10-13</sup> The situation is more complex for well-being; some report no decline,<sup>10,11</sup> while others have shown that specific chronic diseases and co-morbidity affect well-being negatively.<sup>12-14</sup> Yet ageing tends to increase the likelihood of chronic diseases, thereby confounding the effect of chronic disease status and co-morbidity on health and well-being.

### Methods

To determine whether ageing, chronic disease or co-morbidity were the most important determinants of physical health and well-being, and to provide assistance to health care providers to identify those most at risk of deleterious health and well-being outcomes, a structured questionnaire was administered to 710 older residents from diverse ethnic backgrounds in Greater Tshwane. It comprised demographic characteristics, self-reported chronic diseases and the health and well-being sub-scales from the SF-12. Different sampling points were used, owing to difficulties in accessing respondents. Sampling points in Laudium, Eersterust and Pretoria West were social clubs, senior citizen clubs, church groups, retirement centres and complexes. With the exception of church groups (predominantly attended by women), there is a complete lack of social facilities for older residents in Atteridgeville. Therefore, a simple random sample of 450 stand numbers was drawn from Atteridgeville. Of the 710 respondents, 400 came from Atteridgeville, 101 from Laudium, 102 from Eersterust and 107 from Pretoria West. Ages ranged between 50 and 93 years (mean age=69.7 years, SD=9.7). There were 497 women and 213 men.

### Results and discussion

One or more chronic diseases were reported by 518 (73%) respondents. Hypertension alone (25%), hypertension and diabetes mellitus (8%), hypertension and arthritis (8%), arthritis alone (8%) and diabetes mellitus alone (5%) were the most frequently mentioned chronic diseases. Research has shown that 21% of adult South Africans, age-adjusted to the South African population, reported hypertension,<sup>15,16</sup> which is similar to current findings. On a cautionary note, self-reports are more likely to under-report hypertension and other chronic conditions. Ethnicity, age group and gender significantly affected reported chronic disease status ( $p < 0.001$ ). Respondents from Atteridgeville and Pretoria West were more likely to report hypertension alone (29% and 30%, respectively), whereas respondents from Laudium and Eersterust were more

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likely to report hypertension combined with other chronic diseases (37%). Older respondents and women were more likely to report hypertension and co-morbid conditions, similar to previous findings.<sup>15,16</sup>

South Africa has one of the most rapidly ageing populations in Africa, with 12% of black and 33% of white South Africans aged 50 and older in 2005.<sup>17</sup> Concomitant with this ageing profile is the increase in hypertension, overweight and obesity. Hypertension is a major risk factor for other chronic conditions such as stroke, myocardial infarction, congestive heart failure, peripheral vascular disease and renal failure. These co-morbid conditions are not only associated with the risk for major health-related outcomes, such as disability or mortality, but also with higher health care utilisation and expenditure. Therefore, chronic diseases will account for a substantial burden in the South African public health care sector.

The average score on the health sub-scale was 55.7 (SD=30.0) and 71.5 (SD=7.6) for the well-being sub-scale, indicating more decrements in physical health than well-being. Ethnicity, language, gender and marital status were not related to health and well-being ( $p>0.05$ ). Modest negative relationships were found between age and health ( $r=-0.12$ ,  $p<0.01$ ) and well-being ( $r=-0.08$ ,  $p<0.05$ ). Reliability (internal consistency) coefficients were 0.91 for the health and well-being sub-scales, excellent reliability coefficients.<sup>18</sup>

Multiple analyses of co-variance (MANCOVAs), controlling for ethnicity, age group and gender, were used to investigate the effects of chronic disease status (group 1: no chronic disease; group 2: hypertension alone; group 3: hypertension plus one or more other chronic diseases; and group 4: other chronic diseases without hypertension) on health and well-being (Fig. 1). Respondents with no chronic diseases had significantly better health ( $p<0.001$ ) and well-being ( $p<0.05$ ) than the other three groups. Respondents with hypertension alone had significantly better health ( $p<0.01$ ) and well-being

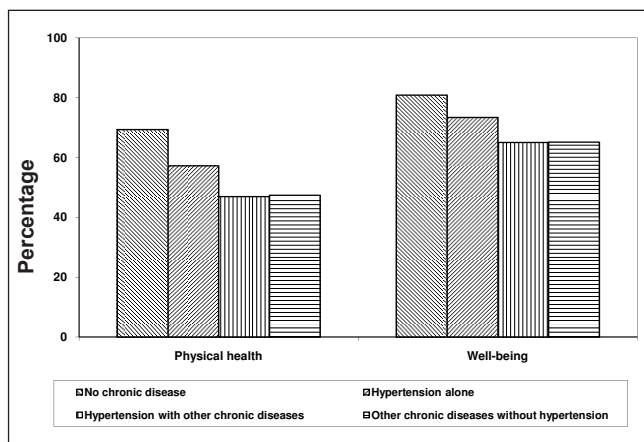


Fig. 1. The effect of no chronic disease, hypertension and other chronic diseases with and without hypertension on physical health and well-being.

( $p<0.05$ ) than those with other chronic diseases combined with and without hypertension (Fig. 1).

Mean scores on health and well-being for other chronic diseases groups, combined with and without hypertension, were remarkably similar (Fig. 1). This was most likely due to undiagnosed hypertension, a common occurrence in South Africa,<sup>15,16</sup> suggesting that primary health care providers should suspect concurring hypertension in their diagnosis of all chronic diseases. One service level response would be to screen all patients with chronic diseases for hypertension, as it would appear that hypertension combined with one or more other chronic diseases places patients most at risk of poor health and well-being outcomes.

## Conclusion

Chronic disease status and co-morbidity were more important determinants of health and well-being than ethnicity, age, language, gender or marital status. This substantiated research in Europe and South Africa and provided support for the negative influence of hypertension and increasing co-morbidity on health and well-being.

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