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## **Socioeconomic status and quality of life in population-based Australian men: data from the Geelong Osteoporosis Study**

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# Socioeconomic status and quality of life in population-based Australian men: data from the Geelong Osteoporosis Study

## Abstract

**Objective:** To investigate the relationship between socioeconomic status (SES) and reported perceptions of quality of life (QOL) in a cross-sectional population-based analysis of a representative sample of Australian men.

**Methods:** In 917 randomly recruited men aged 24–92 years, we measured QoL in the domains of physical health, psychological health, environment and social relationships, using the Australian World Health Organization Quality of Life Instrument (WHOQOL-BREF). Residential addresses were cross-referenced with Australian Bureau of Statistics 2006 census data to ascertain SES. Participants were categorised into lower, mid, or upper SES based on the Index of Relative Socioeconomic Disadvantage and Advantage (IRSAD), the Index of Economic Resources (IER), and the Index of Education and Occupation (IEO). Lifestyle and health information was self-reported.

**Results:** Males of lower SES reported poorer satisfaction with physical health (OR=0.6, 95%CI 0.4–0.9,  $p=0.02$ ), psychological health (OR=0.4, 95%CI 0.3–0.7,  $p<0.001$ ) and environment (OR=0.5, 95%CI 0.3–0.7,  $p<0.001$ ), although not social relationships ( $p=0.59$ ). The poorest QOL for each domain was observed in the lower and upper SES groups, representing an inverse U-shaped pattern of association; however, statistical significance was only observed for psychological health (OR=0.5, 95%CI 0.4–0.7,  $p<0.001$ ). These relationships were similar for IEO and IER.

**Conclusions:** Men from lower and upper SES groups have lower QOL compared to their counterparts in the mid SES group.

**Key words:** socio-economic status, quality of life, men, WHOQOL-BREF

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Quality of life (QOL) is a broad and encompassing construct, defined by the World Health Organization (WHO) as “...perceptions of [an individual’s] 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”;<sup>1</sup> thus QOL is a multifactorial construct. Adding further complexity to QOL is the acknowledgement that social and personal resources, as well as physical capabilities, influence an individual’s ability to enjoy the highest attainable standard of wellbeing and health.<sup>2</sup> This is recognised by the WHO as a fundamental right of every individual,<sup>2</sup> and underpins the work of the WHO Commission on the Social Determinants of Health.<sup>3,4</sup>

Material or economic deprivation is associated with social disadvantage, and

highly related to increased stress.<sup>5</sup> More specifically, the clustering of deprivation at the neighbourhood level, or the area in which we reside, impacts upon social exclusion, housing, racism, discrimination, inadequate public infrastructure, and potentially less exposure to civic participation, educational attainment, and choices in recreation activities.<sup>6,7</sup> Survey data show large cross-national differences in perceived happiness; curiously, developing countries such as Indonesia and India scoring higher than either OECD or third world countries.<sup>8</sup> Taken in context, it is evident that social disadvantage is likely to impact upon QOL.

A compelling level of evidence exists that suggests low QOL in men is associated with unhealthy lifestyle behaviours, including current smoking,<sup>9,10</sup> greater alcohol consumption,<sup>11,12</sup> physical inactivity<sup>13,14</sup>

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and greater body mass index (BMI).<sup>15</sup> Furthermore, it is well documented that potentially adversary lifestyle behaviours such as these are more common in socially disadvantaged individuals.<sup>16-24</sup> Given the observed clustering of social deprivation,<sup>6,7</sup> the application of validated measures of area-based SES enables investigations to examine the role played by social and economic characteristics that make up an area,<sup>25</sup> and thus influence individuals who reside within that area, on health outcomes. Given the importance of socioeconomic status (SES) as a determinant of health, it is equally important to understand social determinants of QOL.

While an increasing body of work is beginning to employ the World Health Organization Quality of Life Instruments (WHOQOL-BREF) to disentangle the subjective experience of QOL for those experiencing poorer health, none to date have examined this specifically in relation to area-based SES in population-based adult men. Furthermore, there is a lack of Australian data in this field of enquiry, despite a large Australian study showing that those residing in affluent cities are more likely to be 'unhappy' compared to those residing in poor regional towns.<sup>26</sup> It is therefore necessary to clarify any association between QOL and area-based SES, especially in Australian men, where such data are limited. We undertook this study to investigate the association between QOL, using the WHOQOL-BREF, and different levels of area-based SES in a randomly selected, population-based sample of Australian men.

## Methods

### Study participants

Data were derived from an age-stratified random, population-based sample of men selected from the Commonwealth electoral roll for the Barwon Statistical Division (BSD) of south-eastern Australia. Participants were recruited during 2001-06 for the Geelong Osteoporosis Study (GOS); a cohort originally established to investigate the epidemiology of osteoporosis in men. The population characteristics of the BSD have been shown as comparable with national level.<sup>27</sup> The initial sample totalled 1,540 men (aged 20-93 years, participation 67%).<sup>27</sup> From a potential pool of 967 men who had participated in the GOS 5-year follow up study 2007-11 (participation 81%),  $n=50$  participants had not completed the Australian WHOQOL-BREF and were excluded from analyses, leaving the final number for analysis at 917 (age range 24-92 years). The Barwon Health Human Research and Ethics Committee approved the study and written informed consent was obtained from all participants.

### Measures

#### Outcome variable

To measure quality of life, we employed the WHOQOL-BREF (Australian version), a subset of the WHOQOL-100 assessment tool that has been shown as comprehensive, subjective, relative, and culturally relevant from the participants' perspectives.<sup>28</sup> Four domains are included in the WHOQOL-BREF: physical health

(facets include pain and discomfort; dependence of medical treatment; energy and fatigue; mobility; sleep and rest; activities of daily living; and work capacity), psychological health (facets include positive and negative affect; spirituality; thinking and concentration; body image and appearance; and self-esteem), social relationships (facets include personal relationships; sexual activity; social support), and environment (facets include physical safety and security; pollution and traffic; financial resources; opportunities to acquire new skills; participation in recreation activities; home environment; access to quality health and social care; and transportation). The WHOQOL-BREF has been widely field-tested and validated by further studies,<sup>28</sup> and shown to have excellent test-retest reliability at  $<0.8$ , internal consistency between 0.60-0.90, and high correlations for both construct and discriminant validity.<sup>28</sup> QOL domain scores were transformed in accordance with the WHO guidelines.<sup>28</sup> For analyses, we dichotomised the QOL domain scores at the median score to indicate dissatisfaction with psychological health ( $\leq 81$ ), physical health ( $\leq 75$ ), social relationships ( $\leq 75$ ), and the environment ( $\leq 81$ ).

#### Exposure variables

The residential address of each participant was matched to the corresponding Australian Bureau of Statistics (ABS) Census Collection District (an area encompassing about 250 households). ABS software was used to determine the Socio-Economic Indexes for Areas (SEIFA) value from the 2006 census for each participant. SEIFA indices summarise the average characteristics of participants within an area, and provide a single measure to rank the level of advantage and disadvantage at the area level, not of the individual.<sup>29</sup> The SEIFA indices were validated by analysts from the ABS Regional Offices, and academic and policy research experts, skilled in socioeconomic modelling and analysis, peer-reviewed the variables and methodology employed in SEIFA 2006,<sup>29</sup> as previously reported.<sup>6</sup> We have previously reported on the validation of the SEIFA indices.<sup>6</sup> We determined *a priori* to apply the three SEIFA indices which are equivalised for both advantage and disadvantage, to enable the encompassing the entire socioeconomic continuum: the Index of Relative Socioeconomic Advantage and Disadvantage (IRSAD), the Index of Economic Resources (IER), and the Index of Education and Occupation (IEO).<sup>29</sup> The IRSAD includes high and low income, type of occupation from unskilled employment to professional positions. The IER measures variables in relation to annual household income, rental and mortgage payments, and dwelling size. The IEO includes measures of the proportion of employed individuals, their level of educational attainment, and the type of occupation held. Based on SEIFA values of the study population, subjects were categorised into quintiles according to the cut points of the BSD determined by 2006 Australian Census Data.<sup>29</sup> To address power issues, quintiles 1 and 2 were pooled to form the lower SES group (35.7% of our sample, based on IRSAD) while quintiles 4 and 5 were pooled to form the upper SES group (44.9% of our sample, based on IRSAD) and quintile 3 was held as referent.

Body weight and height were measured to the nearest 0.1 kg and 0.1 cm, respectively, from which BMI was determined by weight/height<sup>2</sup> (kg/m<sup>2</sup>). Alcohol intake was ascertained by a validated food frequency questionnaire and documented in grams per day.<sup>30</sup> Physical activity was assessed by self-report questionnaire; participants were determined to be physically active if vigorous to light exercise was undertaken on a regular basis. All measures were current at the time that the WHOQOL-BREF was completed.

### Statistics

Differences in characteristics across each SES group (lower, mid and upper), measured by the three SEIFA indices (IRSAD, IEO,

and IEO), were tested using Kruskal-Wallis and chi-square tests, where appropriate. Odds ratios (OR with 95% confidence intervals) were determined using logistic regression models to examine the association between QOL and SES, holding the mid-SES group as referent. Age, BMI, smoking, alcohol consumption and physical activity were tested for inclusion in the models; age was included as a confounder in the final models, with a further adjustment made for the mediating effects of physical activity in the domains of psychological health, social relationships, and environment. All statistical analyses were performed using Minitab (Version 15; Minitab, State College, PA).

**Table 1: Subject characteristics (n=917) across lower, mid and upper SES groups, measured by SEIFA indices of IRSAD, IER, and IEO. Values presented as median (IQR) or n (%).**

Index of Relative Socio-Economic Advantage/Disadvantage (IRSAD)				
	Low SES (n=328)	Mid SES (n=177)	Upper SES (n=412)	p
Age (yr)	61.7 (47.0-75.3)	60.4 (47.8-73.4)	57.2 (44.1-69.4)	0.02
BMI (kg/m <sup>2</sup> )	26.9 (24.5-29.8)	27.4 (24.7-29.5)	27.1 (24.8-29.7)	0.94
Smoking (current)	44 (13.4%)	15 (8.5%)	33 (8.0%)	0.04
Physically active	27 (8.2%)	7 (4.0%)	15 (3.6%)	0.02
Alcohol (grams)	9.7 (1.0-28.4)	12.1 (3.2-25.5)	15.3 (4.0-33.6)	0.003
Quality of life (current)				
Physical health	79 (24.1%)	60 (33.9%)	139 (33.7%)	0.02
Psychological health	122 (37.2%)	97 (54.8%)	165 (40.0%)	<0.001
Social relationships	109 (33.2%)	62 (35.0%)	140 (34.0%)	0.87
Environment	90 (27.4%)	72 (40.7%)	154 (37.4%)	0.001
Index of Economic Resources (IER)				
	Low SES (n=320)	Mid SES (n=175)	Upper SES (n=387)	p
Age (yr)	61.3 (47.1-75.4)	60.1 (48.4-72.9)	57.6 (43.2-69.4)	0.02
BMI (kg/m <sup>2</sup> )	26.9 (24.4-29.9)	27.3 (25.0-29.5)	27.1 (24.8-29.5)	0.79
Smoking (current)	45 (14.1%)	10 (5.7%)	37 (9.6%)	0.009
Physically active	24 (7.5%)	9 (5.1%)	16 (4.1%)	0.15
Alcohol (grams)	9.7 (1.0-28.4)	14.2 (2.8-28.5)	14.4 (4.0-30.8)	0.02
Quality of life (current)				
Physical health	83 (25.9%)	57 (32.6%)	138 (35.7%)	0.03
Psychological health	128 (40.0%)	88 (50.3%)	168 (43.4%)	0.07
Social relationships	110 (34.4%)	69 (39.4%)	132 (34.1%)	0.44
Environment	97 (30.3%)	68 (38.9%)	151 (39.0%)	0.02
Index of Education and Occupation (IEO)				
	Low SES (n=312)	Mid SES (n=190)	Upper SES (n=380)	p
Age (yr)	61.3 (46.5-74.8)	59.9 (43.4-72.2)	57.5 (45.5-70.6)	0.02
BMI (kg/m <sup>2</sup> )	27.1 (24.7-29.6)	27.7 (25.3-30.1)	27.0 (24.5-29.3)	0.05
Smoking (current)	45 (14.4%)	17 (8.9%)	30 (7.9%)	0.02
Physically active	26 (8.3%)	10 (5.3%)	13 (3.4%)	0.02
Alcohol (grams)	9.7 (1.1-28.2)	10.3 (2.6-28.2)	15.7 (4.2032.5)	0.003
Quality of life (current)				
Physical health	80 (25.6%)	70 (36.8%)	128 (33.7%)	0.02
Psychological health	126 (40.4%)	103 (54.2%)	155 (40.8%)	0.002
Social relationships	111 (35.6%)	69 (36.3%)	131 (34.5%)	0.83
Environment	90 (28.8%)	83 (43.7%)	143 (37.6%)	0.001

Partial QOL data missing in the domains of: physical health (n=37), psychological health (n=50), social relationships (n=56), environment (n=24).

## Results

Characteristics for each SES group (lower, mid and upper) as measured by three SEIFA indices (IER, IEO and IRSAD) are presented in Table 1. Differences were identified across the three SES groups for each of the SEIFA indices in regards to age, alcohol, and smoking status, and the QOL domains, physical health, psychological health and environment. Differences were also seen across the three SES groups for IRSAD and IEO in regards to physical activity. No differences were observed for the QOL domain of social relationships across any SES group or for any SEIFA index.

Adjusted results for each SEIFA index are presented in Figure 1, with the mid SES group held as referent. For IRSAD, the lower SES group had a reduced likelihood of being satisfied with their physical health (OR=0.61, 95%CI 0.4-0.9,  $p=0.02$ ), psychological health (OR=0.44, 95%CI 0.3-0.7,  $p<0.001$ ) and environment (OR=0.49, 95%CI 0.3-0.7,  $p<0.001$ ), after adjustment. No association was observed between lower SES and satisfaction with social relationships (OR=0.9, 95%CI 0.6-1.3,  $p=0.59$ ). These relationships were similarly observed for IEO and IER across each of the QOL domains (Figure 1).

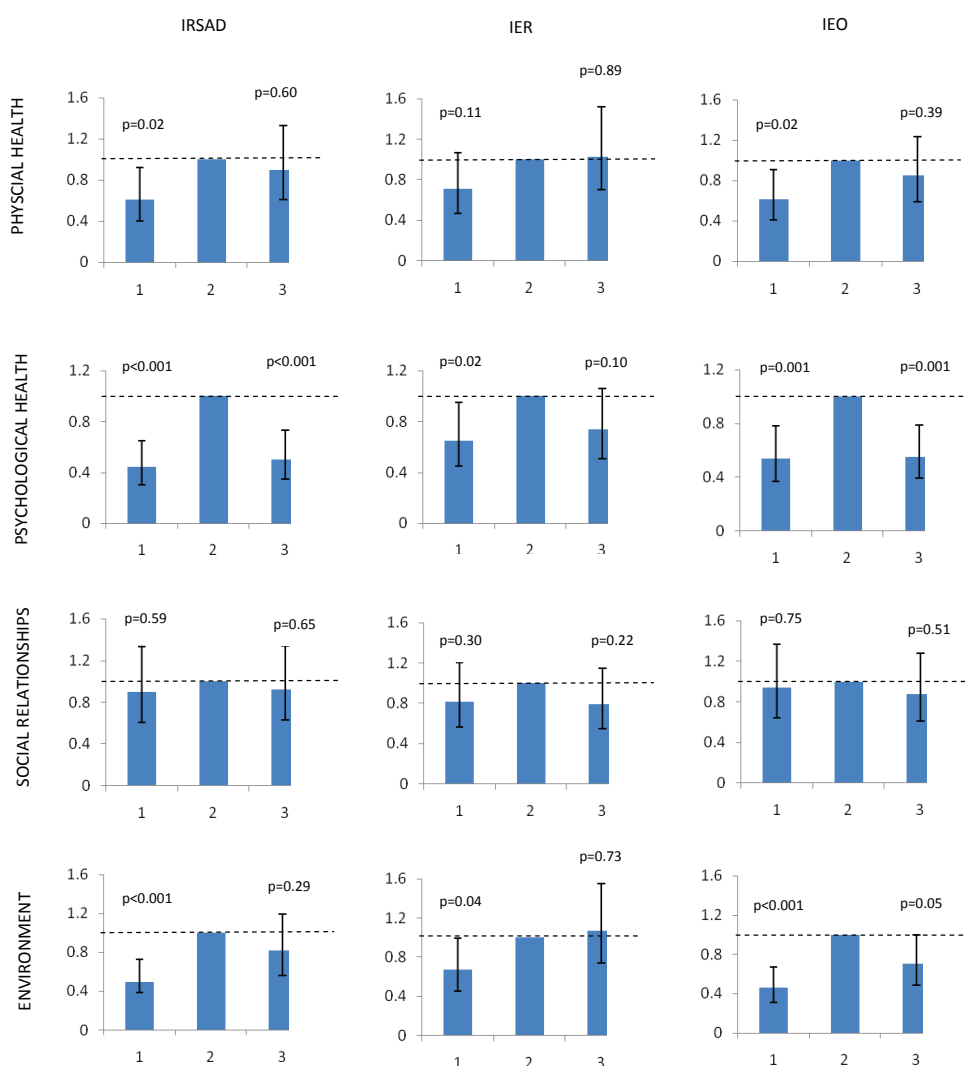
Further adjustment for BMI, smoking status and alcohol consumption did not affect these associations.

For IRSAD, the OR for satisfaction with QOL in the upper SES group compared to the mid SES group was 0.9 (95%CI 0.6-1.3,  $p=0.60$ ) for physical health, 0.5 (95%CI 0.4-0.7,  $p<0.001$ ) for psychological health, 0.9 (95%CI 0.6-1.3,  $p=0.65$ ) for social relationships and 0.8 (95%CI 0.6-1.2,  $p=0.29$ ) for environment, after adjustment. Similar associations were observed for IEO; where the OR for the upper SES group compared with the mid SES group was 0.9 (95%CI 0.6-1.2,  $p=0.39$ ) for physical health, 0.6 (95%CI 0.4-0.8,  $p=0.001$ ) for psychological health, 0.9 (95%CI 0.6-1.3,  $p=0.51$ ) for social relationships and 0.7 (95%CI 0.5-1.0,  $p=0.05$ ) for environment. For IER, there was no relationship between the upper SES group and any of the QOL domains.

## Discussion

To the best of our knowledge, this is the first study to use the WHOQOL-BREF to examine the relationship between SES and QOL of a randomly-selected population-based sample of adult Australian men, for which we report four key findings.

1. Men of lower SES are significantly more likely to report dissatisfaction with their psychological health, physical health and environment, compared to men of mid and upper SES.



**Figure 1: Adjusted odds ratios for domains of quality of life (physical health, psychological health, social relationships and environment) for men randomly-recruited from the Barwon Statistical Division, Australia, during 2001-6, across SES groups for IRSAD, IER and IEO, where SES group 1 is the most disadvantaged. Error bars indicate 95%CI. Mid SES group held as referent group with broken horizontal line indicating threshold of significance.**



2. Men of upper SES also reported greater dissatisfaction with the QOL domains of psychological health, physical health and environment compared to men in the mid-SES group, however, that disparity was not as great as observed for men of lower SES.

3. No associations were observed between SES and QOL social relationships.

4. An inverse U-shape pattern of association was observed between SES and QOL in the domains of psychological health, physical health and the environment, consistent for each SEIFA index, suggesting that individuals from both ends of the SES spectrum are likely to report poorer QOL compared to individuals in the mid SES group.

In light of a paucity of data using the WHOQOL-BREF, our current understanding is limited; thus, we provide a speculative discussion focused on each of the QOL domains.

### **Physical health**

The importance of satisfaction with physical health cannot be overestimated, especially given that functional capacity (an element of physical health) is a key risk factor shown to increase the likelihood of depression in population-based individuals without chronic disease,<sup>31</sup> as well as those with chronic disease, such as lung cancer.<sup>32</sup> Importantly, the domain of physical health measured by the WHOQOL-BREF has been shown by other studies to correlate significantly with clinical variables such as haemoglobin levels and serum lactate dehydrogenase.<sup>33</sup> Previous studies have reported that a greater number of co-morbidities have been associated with poorer QOL, such as a study from Turkey which employed the Nottingham Health Profile to examine QOL,<sup>34</sup> and a German study of patients with diabetes which employed the EQ-5D tool.<sup>35</sup> Our findings are consistent with previously observed relationships, and with the fact that we have previously reported a greater number of co-morbidities in men from lower SES in this randomly selected sample.<sup>36</sup> However, we also observed a lower QOL for men of upper SES; an association recently reported to exist for Canadian women where SES was measured by household-size-adjusted income.<sup>37</sup> While there is a relative paucity of data examining QOL in Australian men, we speculate that men of upper SES may be more self-critical and have greater expectations of better physical health; factors potentially related to their greater educational attainment and thus a tendency for higher self-imposed standards of achievement.

### **Psychological health**

We are unable to comment on whether self-reported dissatisfaction with QOL associated with psychological health suggests an impaired perception, or whether the reported QOL in this domain reflects actual mental health status. However, we have previously reported a similar inverse U-shape pattern of association in females when examining the relationship between SES and mood disorders measured by a gold standard clinical assessment tool.<sup>6</sup> Lower-rated psychological health in men of lower SES may not be surprising, especially given the well-documented association between social disadvantage and poorer health in general, often referred to as the

social gradient of health.<sup>3,38</sup> This is both a clinical and public health concern, especially in an era where mental health problems are one of the most common causes of disability and highest contributors to the overall disease burden.<sup>39,40</sup>

Similarly, dissatisfaction with psychological health among men of upper SES was observed; contrary to the social gradient of health theory. Men of upper SES may have distinct stressors which may influence their psychological health, such as potential over-indebtedness or work life balance choices.<sup>6,41</sup> People at the ends of the income spectrum may also feel more marginalised from the norm, and perceived social cohesion may be an operative factor. Indeed, our findings are consistent with a study of 23,000 Australians which suggested that the 'saddest' people resided in more affluent areas, such as Sydney, while the 'happiest' people resided in poorer regional towns.<sup>26</sup> This is also concordant with cross-national surveys of happiness, where middle-income countries score highest. Our data suggest that there may be a need to improve accessibility to programs and services associated with psychological health, with specific attention directed toward increasing the acceptability of these services by men. Furthermore, and more specific to men, there is a paucity of data examining underlying mechanisms which may influence the observed associations; a concern in light of the increasing burden associated with psychological illness.

### **Social relationships**

The absence of significant differences in QOL for the domain of social relationships between SES groups, consistent for each of the SEIFA indices, suggests that there may be a shared 'norm' for social relationships within different communities. A shared 'norm' may suggest that within the social fabric of populated areas we should acknowledge the intrinsic value of perception of satisfaction with their neighbourhoods or communities.<sup>25</sup> Indeed, there are suggestions that the characteristics of an area in which an individual resides may influence health outcomes independently of individual behaviours.<sup>25</sup>

Whether or not this is perceived equality, or real equality, is irrelevant when considering subjective QOL. Importantly, our findings compare favourably with another study that examined social relationships;<sup>42</sup> an observation suggested as a result of fewer items being used to form the social relationships domain of QOL. QOL and SES are complex concepts therefore the explanation for a lack of differences between self-reported satisfaction with social relationships for men regardless of SES warrants further study as an antecedent to fully understanding this association.

### **Environment**

We report that men from both ends of the SES continuum are dissatisfied with their QOL in the domain of environment, when compared to the mid-SES group. Compared to the other QOL domains, the environment encompasses more concrete factors such as possessions and the external environment, as opposed to the individual factors of psychological and physical health, and personal relationships with others.

We may expect dissatisfaction with environment QOL for individuals residing in areas of lower SES, given the increased likelihood of poorer-quality housing options, less integrated public infrastructure and potentially fewer choices of health services.<sup>6,7</sup> However, it may be speculated that males of upper SES would report dissatisfaction with their surroundings due to pressure to 'keep up with Joneses' (a phenomena related to the objective standard of living) or the 'progress paradigm' (despite relative secure living standards, feeling that there is a lack of significance in life).<sup>43</sup> Furthermore, it has been reported elsewhere that income level is negatively related to QOL for full-time, high-income male employees,<sup>44</sup> supporting our findings in this current study. The theory of 'masculinity',<sup>45,46</sup> which addresses the concepts of hegemony, subordination, complicity and marginalisation, may provide a somewhat controversial explanation for our findings; it is plausible that the role taken on by the male to provide for his family (or self alone) may be an underlying mechanism, whereby he may consider the ideal environment for himself, and perhaps his family, to be 'better' than the one they currently experience. However, further work is required to understand QOL in the environment domain as related to the provision of housing (primarily the responsibility of the individual), and the affordability of housing (primarily related to economic, market, and policy issues of the country at question).<sup>47</sup> While our speculations regarding the environment are intrinsically linked to psychological health, and potentially the other domains of physical health and social relationships, it is plausible that men from different ends of the SES continuum may experience diverse barriers to being satisfied with all four domains of QOL.

### Strengths and limitations

Our study has strengths. The WHOQOL-BREF is an internationally validated tool,<sup>42</sup> and is shown to be easily administered and practical for use in epidemiological research.<sup>28</sup> The WHOQOL-BREF assesses the subjective QOL in various domains encompassing health-related and environmental issues, thereby covering diverse aspects of life circumstances. We have a high participation rate, which is atypical for a population-based cohort of adult males. With the exception of the social relationships domain, there was a consistent inverse U-shape pattern of association for each QOL domain; similarly observed for each SEIFA index. Importantly, this pattern of association for subjective QOL replicates the pattern of association previously observed within a cohort of population-based adult females from the same geographic location between clinically diagnosed mood disorders using the SCID-I/NP.<sup>6</sup> Area-based scores of SES have been suggested as an accepted proxy for public health purposes,<sup>48,49</sup> and the three SEIFA indices used for this analysis were formulated from various aggregate measures, providing a robust approach to examining the association between SES and QOL. Our findings also suggest that application of the WHOQOL-BREF in the clinical setting may assist in the early detection of healthcare needs in males; a subgroup of the general population less likely to disclose distressing or personal information compared to females.<sup>50</sup>

This study also has limitations. The WHOQOL-BREF is not

necessarily optimised for all ethnic communities within Australia;<sup>28</sup> however, the version employed for our study has been developed specifically for the Australian context, is validated, and is currently the best tool available for these purposes. In light of there being no recommended cut-off score for use with the WHOQOL-BREF, we have used the median as the cut-off to indicate poorer QOL. However, we acknowledge problems using the cut-off point to identify participants who may be at risk of reporting dissatisfaction with their QOL. For instance, it is possible that the average score for good QOL may fall between 70% and 80% of the maximum (aggregated) score. This potentially suggests that an appropriate cut-point for our sample of adult males may be greater than our median scores employed for our study. Due to the dynamic interplay between the domains of QOL measured by the WHOQOL-BREF, we do not suggest that subjective QOL for one domain exists in isolation from the others. The response for the male cohort of GOS was 67%, which may limit the representativeness of the broader Australian population. The cross-sectional nature of our study negates our ability to examine the change or stability of QOL in men over time, however further research should focus toward examining associations between SES and the consistency in QOL for population-based men. Finally, in using area-based aggregate scores of social disadvantage, we assume that relatively advantaged individuals may reside in an area that scored low on the SEIFA, and that relatively disadvantaged individuals may reside in an area that scored high on the SEIFA. Given that we did not account for parameters of SES measured at the individual-level, we are unable to comment on any dose-response associations between QOL and, for instance, educational attainment, income, or type of occupation or employment status; however, the application of area-based measures of SES in this current study was informed by the theoretical argument underpinning the specific research question at hand.

This study is the first to examine the association between social disadvantage and QOL in population-based Australian males using the WHOQOL-BREF. We conclude that males from both ends of the SES continuum may have a lower QOL compared to males in the mid-SES group. Potentially, unique barriers to achieving satisfaction with their QOL may exist for males from each end of the SES continuum. Examining the subjective QOL in the domains of psychological and physical health provides information beyond symptoms, and enables the identification of otherwise undetectable health problems. Similarly, examining QOL in the domains of social relationships and environments enables the development of specific programs and support services to be efficiently targeted. However, given that SES and QOL are complex concepts, it is imperative that further research examines the role played by SES upon subjective QOL, especially in population-based males, and to further elucidate this area of enquiry.

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