"She'll be right, mate!": do Australians take their health for granted?

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ABSTRACT

INTRODUCTION: Health consciousness highlights the readiness of individuals to undertake health actions and take responsibility for their health and the health of others.

AIM: To examine the health consciousness of Australians and its association with health status, health-care utilisation and sociodemographic factors.

METHODS: This quantitative cross-sectional study was a part of a larger project aiming to engage the general public in health-care decision-making. Adults from Queensland and South Australia ($n = 1529$) were recruited to participate by a panel company. The questionnaire included the Health Consciousness Scale (HCS), health status, health-care utilisation, sociodemographic and socioeconomic variables.

RESULTS: The health consciousness of Australians was relatively low (mean score = 21), compared to other international administrations of the HCS, and further investigations revealed that more health-conscious people tended to live in South Australia, be female and single, experience poorer physical and mental health and were more frequent users of health-care services.

DISCUSSION: The general approach to health in this sample of the Australian public may reflect 'here and now' concerns. It appears that an attitude of 'she'll be right, mate' prevails until a change in an individual's health status or their exposure to the health system demands otherwise. These findings need to be investigated further to see if they are confirmed by others and to clarify the implications for primary health programmes in Australia in redressing the public's apparent apathy.

KEYWORDS: Health consciousness; health status; health-care utilization; Australia

Introduction

The notion of individual responsibility for health is epitomised in the concept of health consciousness. Since the 1990s, government policies around the world have focused on specific disease risks and individual responsibilities for health.[1] This approach has relied on actively seeking to increase awareness for health and promote healthy choices through social marketing campaigns.[1,2]

Health consciousness is described as 'the degree to which an individual is conscious of his or her own health'.[3] Health-related motivation plays a primary role in determining individuals' engagement in specific health behaviours.[4] It highlights the readiness of individuals to undertake health actions and take responsibility for their health and the health of others. Although health consciousness is often described as an individual's willingness and

WHAT GAP THIS FILLS

What is already known: Higher levels of health consciousness, as measured by the Health Consciousness Scale, have generally been associated with people in better health. Individuals with a high level of health consciousness have higher self-efficacy, believe in health promotion, value social support when they are sick and consider check-ups more readily if required.

What this study adds: Health-care utilisation and the experience of a significant health condition are most likely to increase Australians' thinking about their health and taking responsibility for their wellbeing. To increase personal responsibility and engage more of the public in primary health-care decision-making, better understanding is needed of the drivers of health consciousness among Australians.

responsibility to act on their health obligations, it has generally been measured in terms of specific health promotion behaviours or recall of health messages rather than underpinning attitudes or intention to act.[3–5]

Consumers with higher levels of health consciousness have self-control and report higher levels of self-efficacy, are more aware of and concerned about their health and are also motivated to engage in healthy behaviours to maintain or improve their health and quality of life.[3,5–7] Health-conscious consumers value social support when they are sick; have faith in science, scientists and doctors; carefully evaluate scientific reports; believe in health promotion and a healthy diet; and consider check-ups more readily, if required.[8] They tend to be more evaluative of health claims, more preventive in their orientations and more open to medical alternatives, whereas individuals who score lower generally consult a doctor only when they are extremely ill.[8] Furthermore, health-conscious people are more likely to have greater commitment and social responsibility towards others and trust that this commitment and willingness to provide social support will be reciprocated in the future.[7]

The issues surrounding views on responsibilities for health are complex and can be divisive, yet until the Covid-19 pandemic, community debate has been largely absent regarding personal and collective health responsibilities. Moreover, it is not clear if and how this differs in different health services and

according to different service experiences.[9] Health consciousness can be understood regarding other constructs, populations and settings.[5] For example, a range of socioeconomic characteristics including higher education level, income and employment status are associated with greater health consciousness.[6] This suggests that people with different backgrounds and experiences differ in their views on responsibilities for health. A study of grocery purchases revealed that household characteristics (including income, home ownership, employment status and education level of the head of the household, presence of young children in the family and ethnicity of the household) strongly affect health consciousness.[10] Furthermore, it has been argued that consumers can be segmented based on their perceptions and attitudes towards health and health care, and that different health services and programmes may be required accordingly.[6,8] Understanding the degree to which consumers believe they should be responsible for their health is therefore a primary step in forming and implementing public health policy.[8]

Health authorities have actively sought to raise health consciousness as part of efforts to encourage populations to take more responsibility for their health and reduce avoidable hospital admissions. However, this approach risks reinforcing a victim-blaming mentality, given the different determinants of health and health inequalities that exist between population sub-groups.[11,12] Some research has indicated that Australians have historically demonstrated strong egalitarianism and value accessible health care,[13] but little is known about personal responsibilities for health in this population. This study, therefore, aimed to measure the health consciousness of a sample of Australians and explore associations with other characteristics such as sociodemographic factors, health status and health-care utilisation.

Methods

This study was undertaken as part of a larger project to engage the public in health-care decision-making.[14,15] Ethics approval was obtained from the Griffith University Human Research Ethics Committee (MED/10/12/HREC) and the Metro South Hospital and Health Service Research Ethics Committee (HREC/12/QPAH/330).

Participants and sampling

Adults from Queensland and South Australia were recruited to participate in the study by a panel company (Pureprofile, Sydney, NSW, Australia). Sample size estimates were undertaken to provide representative samples of the general population characteristics, such as state, sex and age.[16,17] Of the 3042 members of the general public who commenced the survey, 1691 (55.6%) met the quota requirements (matching the sample to the stated population characteristics). Of these, 1529 (90.4%) completed the survey and received a nominal reimbursement for their time.

Measures

Health consciousness

The Health Consciousness Scale (HCS) was used because of its internal consistency, discriminant validity and nomological validity against a range of personal health behaviours.[3] The scale measures agreement or disagreement with nine statements using a five-point Likert scale; 45 is the maximum score and nine is the minimum – lower scores indicate higher levels of health consciousness. Example items include 'I'm very self-conscious about my health' and 'I'm very involved with my health'. Four sub-scales appear to equally represent the construct of personal responsibility, including health self-consciousness, health alertness, health self-monitoring and health involvement.[3] The scale can be used to provide one overall measure or as four separate sub-scale measures. As Cronbach's α was 0.91 for the nine items administered in this study, we used the HSC as an overall measure of health consciousness.

Health status

Self-reported satisfaction with health was measured using item 1 of the World Health Organization Quality of Life measure (WHOQOL-BREF). Self-reported health status was measured using a five-point scale ranging from 'very poor' to 'excellent'. Quality of life was measured using AQoL-4D, a validated scale comprising 12 items to assess independent living, mental health, relationships and sensory information; Australian norms are available for this scale.[18]

Health-care utilisation

Health-care utilisation was measured by self-reports of recent presentations to Accident and Emergency Departments, hospitalisations and visits to general practices. Response categories were 'no use', 'some use' or 'frequent use' of these services.[19] Participants were asked to indicate if they had private health insurance (or a health concession card) and 'hospital' and 'extras cover'. Other questions asked if they or a close family member had ever received medical treatment for diabetes, heart disease, asthma, other respiratory diseases, skin cancer, other cancer, depression, anxiety, other emotional problems, chronic neck or back pain, arthritis, stomach ulcer or heartburn and weight management issues.

Sociodemographic and socioeconomic variables

Demograph data included relationship status (married or partnered, separated or divorced, widowed, single); cultural backgrounds (dichotomised measures of Aboriginal and Torres Strait Islander status, a language other than English spoken at home and overseas-born); and indicators of socioeconomic status. Postcodes were also recorded to determine the state of residence and accessibility based on the Accessibility/Remoteness Index of Australia classifications (ARIA).[20] Employment status, education level, income and location (state and postcode) were also all self-reported.[2,12,21–23] To control for the effect of health professional perspectives, an item was included to ask if people had worked in the health system in the previous 10 years.

Procedures

A pilot study with a convenience sample of 20 adults was used to determine completion time, check understanding of and difficulty completing questions, and seek feedback on the questionnaire's language. Participants were reimbursed AU$10 for their participation in the pilot study. The main study involved a three-part computer-based survey designed in Qualtrics (Sydney, NSW, Australia) between September and December 2012. The first part comprised the HCS,[3] the second part presented choices to determine preferred options for accessing emergency care (reported elsewhere) and the final

part contained questions about respondents' background, their health status and health-care utilisation to identify patterns and differences in responses among groups of participants.[15]

Data analysis

Data analysis was undertaken using SPSS (Version 21.0; IBM Corp., Armonk, NY, USA). Less than 5% of the data on participant characteristics was missing. However, as expected, there were more missing values for the measure of household annual income (14.4%). Komogrov–Smirnov and Shapiro–Wilk tests confirmed the health consciousness variable was not normally distributed (D = 0.111, $P < 0.001$; z = 0.976, $P < 0.001$, respectively) indicating both kurtosis and positive skew. Given this and the number of related variables that were measured on nominal and ordinal scales, nonparametric tests were used for preliminary analyses. However, consistent with the central limit theorem, the same pattern of results was found using parametric and non-parametric alternatives. Ordinal regression was therefore used for the multivariate analyses.

The AQoL-4D quality of life measure was scored using the algorithm in STATA[24] and transferred back to SPSS for analysis. The reverse-scored items of the HCS were recoded to ensure consistency of scaling.

The results of the univariate analyses (exploring associations with other factors) are presented. Multivariate analyses were undertaken using stepwise multiple regressions to explore the independence of factors associated with the health consciousness of Australians. The median score of 21 was used to dichotomise the sample into high health consciousness (HCS ≤21) and low health consciousness (HCS >21) groups. Assumptions of the final regression model were checked and there were no major violations. The stepwise modelling began with adding all eligible variables into the model, and proceeding backward (removing one variable at a time) until only variables explaining health consciousness at the $P < 0.05$ significance level were included.

Results

Demographics, socioeconomic indicators, health status and health-care utilisation measures for the

participants who completed the survey (n = 1529) are reported in Table 1. The overall mean HCS score was 20.9 (standard deviation [sd] 5.7), similar to the median (21; interquartile range [IQR] 18 – 25). A range of health service experiences and conditions were found to have small but statistically significant associations with HCS scores in univariate analyses (Table 2).

There were significant differences observed in the health consciousness of different sub-groups, as reported in Table 3. In rank order, the more health conscious group of Australians tended to be frequent users of emergency departments (mean [M] HSC score = 15.9); people hospitalised more than four times in the past 12 months (M = 16.8); people reporting very poor health status (M = 18.2), people nominating other types of employment such as a carer's pension (M = 19.1); people who have experienced heart disease (M = 19.1) and 'other' cancers (M = 19.2); and people who most frequently access general practice services (M = 19.3). The less health conscious group had not attended a general practice appointment in the past 12 months (M = 24.1), were from remote areas (M = 23.8), seeking employment (M = 22.0), aged 18–24 years (M = 21.7), men (M = 21.5) and people living in areas with an accessible ARIA classification (M = 21.5).

The different trends were not uniformly linear. For example, people reporting they had very good health tended to be in the more health conscious group, with a mean score of 20.9 (typical of the overall population mean and just below the median cut-off score of 21). However, people reporting good health status were the least health conscious and people reporting the poorest health were the most health conscious, on average. There were significant differences between Queensland and South Australian residents, with South Australians tending to be significantly more health conscious ($P = 0.026$).

In multivariate analysis, after controlling for the influence of other variables, only a few factors predicted HCS scores (Table 4). The results suggest higher levels of health consciousness were associated with being female, single, having a health concession card, admission to hospital in the last 12 months and poorer quality of life ($P < 0.000$).

Table 1. Population comparisons for key individual characteristics

	Missing values (*n*, %)	Categories	Count (*n*, %)	Normative comparisons (%)
Demographics				
Gender	0 (0.0)	Male	736 (48.1)	49.4 (ABS 2013)[29]
		Female	793 (51.9)	50.6 (ABS 2013)
Age cohorts (years)	0 (0.0)	18–24	181 (11.8)	–
		25–34	276 (18.1)	13.8 (ABS 2013)*
		35–44	285 (18.6)	14.3 (ABS 2013)*
		45–54	275 (18.0)	13.7 (ABS 2013)*
		55–64	236 (15.4)	11.6 (ABS 2013)*
		$\geq$65	276 (18.1)	14.0 (ABS 2013)*
State	43 (3.4)	Queensland	1039 (67.7)	–
		South Australia	436 (28.4)	–
		In transition/neither	11 (0.5)	–
ARIA classification	58 (4.0)	Highly accessible	1213 (79.1)	80.8 (Glover and Tennant 2003)[30]
		Accessible	193 (12.6)	12.2 (Glover and Tennant 2003)
		Moderately accessible	51 (3.3)	4.2 (Glover and Tennant 2003)
		Remote	12 (0.8)	1.4 (Glover and Tennant 2003)
		Very remote	2 (0.1)	1.5 (Glover and Tennant 2003)
Relationship status	2 (0.1)	Married/living with a partner	1001 (65.4)	58.7 (ABS 2013)
		Separated/divorced	151 (10.0)	11.4 (ABS 2013)
		Widowed	37 (2.4)	5.5 (ABS 2013)
		Single	336 (22.2)	34.3 (ABS 2013)†
Speaks English	21 (1.4)	Yes	1435 (93.9)	70.6 (ABS 2013)‡
		No	73 (4.8)	–
Born in Australia	15 (1.0)	Yes	1119 (73.2)	69.8 (ABS 2013)
		No	395 (25.8)	–
Indigenous	10 (0.7)	Yes	19 (1.2)	2.5 (ABS 2013)
		No	1500 (97.9)	
Socioeconomic factors				
Education (beyond school)	14 (1.0)	Yes	1147 (75.0)	–
		No	368 (24.1)	–
Degree/qualification	14 (1.0)	Yes	651 (42.6)	32.4 (ABS 2008)[31]
		No	864 (56.5)	–
Main activity (employment)	3 (0.2)	Employed/self-employed	787 (51.5)	59.7 (ABS 2013)
		Retired	342 (22.4)	–
		Homemaker	166 (10.8)	–
		Student	105 (6.8)	–
		Seeking work	74 (4.8)	5.6 (ABS 2013)
		Other	52 (3.4)	–

(Continued)

Table 1. *(Continued)*

	Missing values (*n*, %)	Categories	Count (*n*, %)	Normative comparisons (%)
Household income (annual, AU$)	221 (14.4)	≤$40,000	425 (27.8)	Median income: $68,800 (ABS 2012)
		$40,001 – $70,000	334 (21.8)	–
		$70,001 – $100,000	261 (17.1)	–
		$100,001– $130,000	154 (10.1)	–
		>$130,000	134 (8.7)	–
Private health insurance (hospital cover)	17 (1.1)	Yes	688 (45.0)	45 (Leach *et al.* 2012)[32]
		No	824 (53.9)	–
Private health insurance (extras cover)	23 (1.6)	Yes	724 (47.3)	52 (Leach *et al.* 2012)
		No	782 (51.1)	–
Health concession card	10 (0.6)	Yes	638 (41.4)	–
		No	881 (58.0)	–
Health status				
Satisfaction with health	2 (0.1)	Very poor	32 (2.1)	–
		Poor	132 (8.6)	–
		Neither poor nor good	301 (19.6)	–
		Good	779 (50.8)	83.0 (Queensland Health 2012)[23] good/very good
		Very good	283 (18.4%)	
Quality of life	40 (2.7)	(AQoL4D)	M = 683(± 0.257)	0.81(± 0.22) (Hawthorne *et al.* 2013)[18]
Diabetes	–	(Self)	145 (9.5)	8.6 (Queensland Health 2012)
	–	(Close family member)	452 (29.5)	–
Heart disease	–	(Self)	118 (7.7)	6.5 (Heart Foundation 2012)[33]
	–	(Close family member)	356 (23.2)	–
Asthma	–	(Self)	309 (20.1)	11.8 (Queensland Health 2012)
	–	(Close family member)	414 (27.0)	–
Other respiratory condition	–	(Self)	92 (6.0)	–
	–	(Close family member)	139 (9.1)	–
Skin cancer	–	(Self)	170 (11.1)	10.2 (Queensland Health 2012)
	–	(Close family member)	400 (26.1)	–
Other cancer	–	(Self)	87 (5.3)	–
	–	(Close family member)	399 (26.0)	–
Depression	–	(Self)	418 (27.2)	16 (Queensland Health 2012)
	–	(Close family member)	390 (25.4)	
Anxiety	–	(Self)	372 (24.3)	
	–	(Close family member)	274 (17.9)	
Other emotional problems	–	(Self)	143 (9.3)	–
	–	(Close family member)	180 (11.7)	–
Chronic neck/back pain	–	(Self)	376 (24.5)	–
	–	(Close family member)	302 (19.7)	–

(Continued)

Table 1. (Continued)

	Missing values (*n*, %)	Categories	Count (*n*, %)	Normative comparisons (%)
Arthritis	–	(Self)	339 (22.1)	15.2 (AIHW 2010)[34]
	–	(Close family member)	406 (26.5)	–
Stomach ulcer/heartburn	–	(Self)	251 (16.4)	–
	–	(Close family member)	215 (14.0)	–
Weight management	–	(Self)	383 (25.0)	–
	–	(Close family member)	343 (22.4)	–
Health-care utilisation/Recent health service experiences				
Hospitalisation (past 12 months)	2 (0.1)	None	1210 (79.0)	–
		1–3 times	294 (19.2)	13% at least once (ABS 2009)[35]
		4 or more	23 (1.5)	
Use of Emergency Departments (past 12 months)	10 (0.7)	None	1143 (74.7)	–
		1–3 times	347 (22.7)	13% at least once (ABS 2009)
		4 or more	29 (1.9)	
Use of GP services (past 12 months)	4 (0.3)	None	188 (12.3)	–
		1–3 times	779 (51.0)	81% at least once (ABS 2009)
		4 or more	558 (36.5)	
Health industry employment (last 10 years)	4 (0.3)	Yes	124 (8.1)	6 (AIHW)[§]
		No	1401 (91.6)	–

ARIA (Accessibility/Remoteness Index of Australia); ABS (Australian Bureau of Statistics); QLD (Queensland).
*Note: Census data includes children and young people aged 0–19 years who collectively comprise 25.9% of the population.
[†]Defined as never married in 2011 Census data.
[‡]Defined as English only spoken at home in 2011 Census data.
[§]Reference of all people employed in the Australian workforce in 2006 (https://www.aihw.gov.au/reports-data/health-welfare-services/workforce/overview).

This model has a relatively poor fit ($R^2 = 0.105$), indicating the influence of other factors not investigated in the survey.

Discussion

The health consciousness of the Australian population is important to health professionals and policymakers working to promote health and prevent illness and injury. Apart from being a strategic imperative as part of efforts to reduce avoidable hospitalisations and improve population health outcomes, the current study demonstrates that health consciousness influences decisions to access care and be influenced by previous experiences of health care.[14] Health consciousness is a distinct health attitudinal measure and the merit of including it in health research alongside other measures of individual characteristics of care has

been established.[14] Nevertheless, the health consciousness of Australians has not previously been reported. Gender, marital status, health concession cardholder status, previous hospitalisation and quality of life were individually associated with health consciousness, but the poor model fit and the influence of key demographic factors such as gender, health concession card status and relationship status suggest that other social factors that were not considered in this study may be additional drivers of health consciousness.

In this Australian study, small yet statistically significant differences were observed between different population groups. In general, higher levels of health consciousness were observed for more frequent users of emergency and general practice services, people admitted to hospital in the previous 12 months, concession cardholders and people with

Table 2. Associations between individual characteristics and health consciousness

	Spearman's ρ	2-tailed significance
Sociodemographic factors		
Gender	−0.081**	0.002
Age cohorts	−0.079**	0.002
State	0.056*	0.032
ARIA classification	0.056*	0.032
Relationship status	0.053*	0.039
Socioeconomic factors		
Main activity (employment)	−0.067**	0.008
Health concession card holder status	0.106**	<0.001
Quality of life (AQoL4D)	−0.141**	<0.001
Diabetes (self)	−0.089*	0.035
Diabetes (close family member)	0.093*	0.027
Heart disease (self)	−0.153**	0.001
Other respiratory condition (self)	−0.187**	0.006
Other respiratory condition (close family member)	0.159*	0.019
Skin cancer (close family member)	0.105*	0.037
Other cancer (self)	−0.129**	0.005
Other cancer (close family member)	0.129**	0.005
Depression (self)	−0.099*	0.010
Anxiety (self)	−0.137**	0.001
Anxiety (close family member)	0.104*	0.016
Arthritis (self)	−0.090*	0.024
Arthritis (close family member)	0.124**	0.002
Hospitalisation in past 12 months	−0.128**	<0.001
Use of Emergency Departments in past 12 months	−0.085**	0.001
Use of GP services in past 12 months	−0.278**	<0.001
Previously employed in the health industry (in last 10 years)	0.067**	0.009

GP (general practitioner); ARIA (Accessibility/Remoteness Index of Australia).
*Denotes significance at a 0.05 level. **Denotes significance at a 0.01 level.

major morbidities or poor health. Many structural factors were also associated with lower health consciousness, such as being unemployed, younger, married and male. Small but statistically significant differences were observed between Queensland and South Australian residents, demonstrating a need to further explore the existence of and the reasons for any jurisdictional differences. Although there are limited survey administrations with comparable adult populations, HCS scores in this Australian population are somewhat less favourable than reported for other studies that have administered this scale.[3,8] For example, the mean Australian score of 20.9 (± 5.7), compares to the mean of 20.0 (± 8.5) observed for 349 adult New Yorkers in 1990.[3] Whether the results of this study are anomalous or accurately reflect that Australians may be more inclined to take their health for granted (ie until they encounter a serious health problem), warrants further investigation.

In contrast to previous findings, this study found that personal health consciousness is most strongly influenced by proximal circumstances of ill-health or structural determinants (eg gender, socioeconomic status such as a concession card, and marital

Table 3. Differences in health consciousness levels between groups of respondents

	Resulting statistic	Significance level	Categories	Group mean (± s.d.)
Demographics				
Gender	$z = -3.1$**	0.002	Male	21.480 (± 5.692)
			Female	20.440 (± 5.683)
State	$z = -2.2$*	0.026	Queensland	21.136 (± 5.553)
			South Australia	20.518 (± 6.031)
Socioeconomic factors				
Main activity (employment)	$\chi^2 = 17.8$**	0.003	Employed	21.313 (± 5.607)
			Retired	20.259 (± 5.267)
			Homemaker	20.831 (± 6.031)
			Student	20.705 (± 5.559)
			Seeking work	22.014 (± 7.055)
			Other	19.058 (± 6.572)
			None	21.250 (± 6.046)
Health concession card holder status	$z = -4.1$**	<0.001	Yes	20.300 (± 5.782)
			No	21.414 (± 5.613)
Health status and related factors				
Self-reported satisfaction with health	$\chi^2 = 22$**	<0.001	Very poor	18.156 (± 6.840)
			Poor	19.323 (± 6.753)
			Neither poor nor good	21.305 (± 5.600)
			Good	21.283 (± 5.356)
			Very good	20.945 (± 5.707)
Hospitalisation				
Hospitalisation (past 12 months)	$\chi^2 = 28.7$**	<0.001	None	21.301 (± 5.693)
			1–3 times	19.820 (± 5.538)
			4 or more	16.783 (± 5.696)
			1–3 times	20.460 (± 5.692)
			4 or more	15.931 (± 6.084)
Use of GP services (past 12 months)	$\chi^2 = 122.7$**	<0.001	None	24.111 (± 5.281)
			1–3 times	21.368 (± 5.600)
			4 or more	19.259 (± 5.433)
Health industry employment (last 10 years)	$z = -2.6$**	0.009	Yes	19.702 (± 5.554)
			No	21.060 (± 5.701)

GP (general practitioner).
*Denotes significance at a 0.05 level. **Denotes significance at a 0.01 level.

status). These findings may reflect higher morbidities in the sample than the general population.[14,15] However, this study consistently indicated that significant health problems are associated with higher levels of health consciousness, as expected, because people who are ill are likely to be more attuned to health information and open to receiving help and support. HCS scores for people with low self-reported health status may reflect health anxiety that could negatively affect quality of life, as indicated by the associations between health consciousness and quality of life, depression, anxiety

Table 4. Multivariable regression analysis: relationship between individual characteristics, health status and health-care usage with health consciousness

	Predictors	β	B	95% CI	P value	R^2	Adjusted R^2	F	d.f.
Health consciousness	Male	0.096	1.039	(0.065, 2.012)	0.037	0.105	0.095	10.343**	444
	Married	−0.140	−1.581	(−2.590, −0.572)	0.002				
	Health concession card	−0.109	−1.187	(−2.198, −0.176)	0.022				
	Admitted to hospital in the last 12 months	−0.292	−0.184	(−3.179, −1.027)	0.000				
	Quality of life	0.118	2.530	(0.463, 4.598)	0.017				

β (standardised regression coefficients as β); B (un-standardised regression coefficients); CI (confidence intervals); R^2 (R-squared); F (F-test); d.f. (degree of freedom).
*$P < 0.05$; **$P < 0.001$.
Note: Higher scores on the Health Consciousness Scale indicate lower levels of health consciousness.

and health service use. Nevertheless, previous research has indicated that health-conscious consumers are open to collaborative decision-making in health care and trust clinicians' advice, suggesting it is an important precursor of self-management and health promotion.[8]

It may be counterintuitive that people in poor health were more health conscious. However, other results indicate that people who have worked in health care are more health conscious, suggesting that many Australians may not think about health unless their circumstances demand it. These findings require clarification and may raise concerns for public health professionals if they indicate that the general public does not think about their health unless they have to.

We acknowledge limitations to this study. Despite being matched to state demographics for age and sex, the respondent sample included a higher proportion of lower socioeconomic groups, who have greater burden of disease than generally noted in population studies. This may also reflect over-diagnosis of morbidity. We did not use probability weighting in the study. There were also insufficient numbers of Aboriginal and Torres Strait Islander participants to enable further analyses for this population group. The results are based on a cross-sectional study and further investigations are required to identify causalities. Objective measures of health status could yield additional insights that we could not explore in the current study.

Further research is needed to clarify the implications of these findings for health promotion and social marketing campaigns in the short term, and to inform population health approaches and health service planning and programming in the longer term. More targeted research may be needed to better inform mass health communication activities and target population strategies to improve health literacy and health consciousness.[3,25,26] The results of the current study nevertheless appear to support health promotion programmes that seek to better equip and support people to overcome sociodemographic barriers to their health (which were also associated with lower levels of health consciousness) and to increase community capacity for health promotion more broadly.

In highlighting the need to raise health consciousness, population health professionals may empower individuals (enhancing responsible and action-oriented people) and communities (accessing health information and local and community health facilities). The population's general compliance with recent Covid-19 measures is promising to this end. Nevertheless, the findings that most Australians are not actively engaged or conscious of their health suggests a need to improve interpersonal or mass health communication activities.[27] Strategies could include targeting individuals and community groups with higher levels of health consciousness to garner their support to create more favourable conditions for community-based interventions,[26] targeting at-risk populations with low health

consciousness with tailored interventions[7] or a combination of both.[28] The results also demonstrate the need to consider specific demographic and societal factors (cultural and social factors) because of the significance of population differences.[28]

Conclusion

Although a diverse range of factors is associated with health consciousness at the population level, the experience of a significant health condition is most likely to alter the degree to which people think about their health and take responsibility for their wellbeing. The Australian attitude of 'she'll be right, mate' may prevail until a change in an individual's health status or exposure to the health system demands otherwise. Further research is required to clarify the findings and their implications for health services, including the need to better understand the drivers of health consciousness among Australians as part of efforts to increase personal responsibility and engage more of the public in health-promoting actions.

Competing interests

The authors declare no competing interests.

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