

# Informing health promotion in rural men's sheds by examination of participant health status, concerns, interests, knowledge and behaviours

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## Abstract

**Issue addressed:** Despite the growth of Australian men's sheds, the body of evidence regarding the health status of members, their health concerns, interests, help- or health-seeking behaviour and their preferred format for receiving health information is limited.

**Methods:** The study involved a cross-sectional study design with data collected from 11 rural South Australian (SA) men's sheds. The survey collected information across 5 domains: demographics; health history, status, concerns and interests; health knowledge; help-seeking behaviours and health information format preferences.

**Results:** Data from 154 shed members were available for analysis. Rural SA sheds primarily cater for older, retired, lesser educated men from lower socioeconomic strata. The key health issues were age-related chronic conditions yet self-reported health status remained high. The GP was the preferred source of health advice. Key knowledge deficits were in the areas of reproductive and psychological health. The preferred mode for health education was hands-on or kinaesthetic approaches as opposed to seminars or internet based information.

**Conclusions:** Priority topics for health promotion programs should include prostate disorders, reproductive and sexual health issues, psychological health, risk factors for common chronic disease and bowel cancer. Programs should incorporate hands-on education approaches. Shed and shed member diversity should be considered when designing programs.

**So what?** A better understanding of what ails men's shed members, what concerns and interests them in terms of health, where they go for health advice and their preferred format for receiving health information increases the likelihood of developing health promotion programs that better engage with this target group.

**Key words:** health promotion, health seeking, kinaesthetic learning, learning preferences, learning styles.

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## Introduction

Australian community men's sheds have been described as 'a space where mostly older men meet to socialise, learn new skills, mentor others or generally take part in activities with other men'.<sup>1</sup> Men's sheds are commonly workshop type spaces that also offer a range of social, leisure and recreational activities and are considered a potential vehicle for men's health promotion.<sup>2,3</sup> They were endorsed by the 2010 Australian National Male Health Policy as having a key role in promoting male health and alleviating social isolation, particularly in older males.<sup>4</sup> However, to ensure that health promotion activities offered to men in sheds are appropriate and

effective, it is important to better understand the health status, concerns, knowledge and health-seeking behaviours of shed members as well as their preferences for garnering health-related information.

## Background

Recent data from the Australian Men's Sheds Association (AMSA) estimates that there are some 930 men's sheds in Australia catering for ~40,000 men.<sup>5</sup> However, information regarding the demographic profile or of the health status, concerns, interests or knowledge

of these men, remains limited. There are only a few studies that describe men's shed participants, with the largest sample being that by Golding (2006) which is also referenced in several subsequent papers.<sup>6,7</sup> This work refers mainly to sheds in Victoria and was collected at a time when there were significantly fewer sheds than exist today; only 22% of the sample respondents ( $n=211$ ) were from rural towns and only 18 respondents from South Australia (SA).

Golding's work described shed members as being 45 years old and older (89%; half over 65 years), retired (73%) and 45% with a blue-collar or trade background. About 81% reported being married or previously married and 63% were living with a wife or partner. Year 10 was the most frequent (28%) level of education attainment reported, and three-quarters of respondents were in receipt of welfare or pension payments. Forty-five percent had experienced a health crisis in the previous 5 years and about one-third (30%) reported a new impairment or disability. There was no further description of the health status, health knowledge or health behaviours of shed participants and data was not stratified by rurality or state.<sup>7</sup>

Earlier work by Graves (2001) ( $n=38$ ) described the age profile and marital status of participants but provided no health information.<sup>8</sup> A small study by Ormsby (2010) studied five participants from two SA metropolitan sheds and described age, self-reported health status and medical history (29 words in total), years retired and previous occupation.<sup>9</sup> A more recent review by Milligan *et al.* (2013) refers to 'no measurable evidence' regarding the physical health of men's shed participants<sup>10</sup> and describes further that the link between shed participation and wellbeing as being 'tenuous'.<sup>10</sup> Further reference to these points is also made in Wilson and Cordier's (2013) narrative review which describes the body of evidence for health effects as 'limited'.<sup>2</sup>

There is however, an apparent convergence in descriptions of men most at risk of ill health and the profile of men who participate in men's sheds. From a national perspective, groups of males described as being at risk of ill-health include older, rural males, from areas of socioeconomic or geographic disadvantage, with lower educational attainment and blue-collar backgrounds; social isolation and non-English speaking background compound the risk.<sup>11</sup> The existing profile of men's shed participants bears many similarities to this description suggesting that men's shed participants are more likely than not to exhibit ill health.<sup>12</sup> This potential convergence of setting and risk substantiates the premise that men's sheds may in fact present a unique opportunity for targeted health promotion and illness prevention programs aimed at older men.<sup>13</sup>

To better tailor health promotion programs to men's sheds requires that we have a better understanding of what ails those who attend, what concerns and interests them in terms of health, what they already know, where they go for health advice and their

preferred format for receiving health information. Understanding these factors and inculcating them into future health promotion programs increases the likelihood of engaging with this target group and encouraging behaviour change.<sup>14</sup>

The aim of this study was to determine the health status, concerns, knowledge and help-seeking behaviour of participants of rural SA men's sheds in order to inform the design of health promotion activities for men attending SA sheds.

## **Methodology and method**

A cross-sectional study design was used with data collected using a self-administered paper-based survey. Ethical clearance for the study was obtained from the University of South Australia Human Research Ethics Committee.

The sampling frame was rural and regional SA, demarcated by a rectangle drawn to include an area covering ~112 850 km<sup>2</sup>. This boundary was then divided into three clusters of roughly equal geographical area (Fig. 1). Twelve of the 25 sheds in these regions were selected with the aid of a random number generator and approached for inclusion in the study. Using the Australian Statistical Geographical Classification of Remoteness, Region 1 of the study was classified as Remote, and Regions 2 and 3 as Inner and Outer Regional.<sup>15</sup>

The survey was conceptualised following a review of the literature and discussion with men's health and men's shed experts. The draft survey consisted of five sections: 1) demographic profile; 2) current and past medical history; 3) health knowledge; 4) help-seeking behaviours; and 5) references for receiving health information (Table 1). Section 2 of the survey incorporated the use of components of validated and standardised instruments – namely, the 36-item Short Form Survey (SF36)<sup>16</sup> and the Australian Quality of Life Questionnaire (AQoL).<sup>17</sup> The survey was piloted with a volunteer sample ( $n=10$ ) of older men, some of whom were also shed participants. Internal and linguistic validity together with question burden were established through an iterative process of testing and re-testing to confirm appropriateness of questions, language and completion time (question burden). Surveys were distributed to participants who completed them individually. Surveys were anonymous and all data, including that relating to mental health, were treated confidentially.

Shed contact details were obtained using publically available information from the AMSA website. Sheds were eligible for inclusion if they were active on a weekly basis and had an authorised person (e.g. coordinator or secretary) able to give consent to the researcher to approach the shed and its members. A total of 25 men's sheds operated within this geographic area at the time; each shed was given an ID number and 12 numbers out of 25 were randomly selected for inclusion. A two-stage consent process was adopted: 1) consent from the shed co-ordinator for the researcher to access the sheds members and 2) informed,

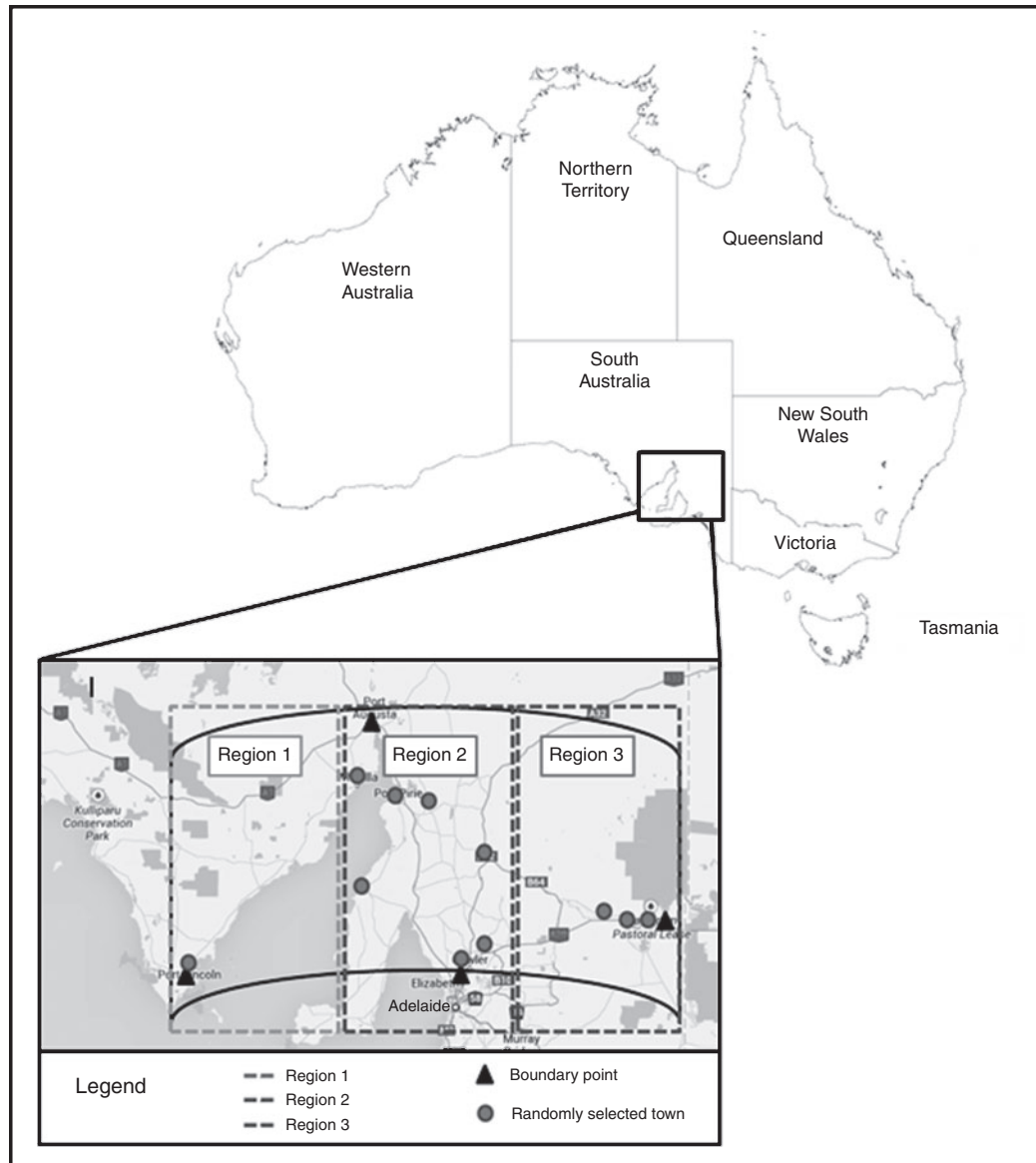


Fig. 1. Geographical boundaries of the study.

Table 1. Survey details

Category	Description	No. of items	Response type
Participant demographics	Location, age, height, weight, waist, smoking status, occupation, socioeconomic status, education, marital status, children, life crises	13	Free text Multiple choice Likert scale
Motivation for men’s shed participation	Reasons for joining the shed: activities, likes, learning opportunities	5	Likert scale
Health status	Self-reported rating general, emotional, social and mental health; health concerns; mobility; health limitations; medical history	16	Likert scale Free text
Health knowledge	Chronic disease risk factors, alcohol, nutrition, prostate, reproductive and sexual health	6	Likert scale
Health interests and behaviour	Health domains of interest; health seeking, preferences for receiving health information	5	Likert scale

written consent from individual shed members. Inclusion criteria included being male, over 18 years of age, a shed member and being able to give informed consent or consent by implication. Each shed involved in the study was visited on a pre-arranged day when the purpose designed survey was provided to shed members; surveys were then self-administered. Before deciding to participate, shed members were offered a brief information session regarding the study and an opportunity to ask questions of the researchers. The study was conducted during August–September 2013.

## Data analysis

Survey responses were collated in Microsoft™ (MS) Excel and data were analysed using descriptive statistics with the aid of the *Statistical Package for the Social Sciences* (SPSS™) version 21 (SPSS Inc., 2007). Equivalence associations were assessed using Chi-square; the threshold for statistical significance was  $P \leq 0.05$  with appropriate adjustments made for assessment of multiple variables.

## Results

### Response

Responses were obtained from 163 men's shed participants across 11 SA men's sheds. Of these, 154 were complete and eligible for analysis. The actual response rate could not be calculated because sheds were unable to provide reliable data regarding the total number of members or because not all members were in attendance on the day the shed was visited.

### Demographics

Participants were mostly retired men with a mean age of 66 years (s.d. 13.4 years), living in their own home with a partner. The median level for education attainment was year 10, although for 13.9% the highest educational attainment was year 7 or below. Over half of the participants reported being in a low income bracket, with over two-thirds reporting their sole income being derived from welfare payments (Table 2).

### Health status, concerns and interests

Self-reported health status was assessed using a 10-point scale across general, social, emotional and mental health categories, with points indicating quality of health: 1–3 poor, 4–7 fair and 8–10 good. Emotional health referred to participant ratings for feeling sad, happy, content, worried, stressed and the like; social health referred to ratings of relationships, for example, with partners, family, friends or colleagues. Mental health referred to participant ranking of psychological problems such as mental illness, depression, anxiety and nervousness. The proportion of participants indicating good health status across general, social, emotional and mental health were 47%, 60%, 76% and 64.6%. The proportion rating the indicators as fair were 52.3%, 38.5%, 22.1% and 33.3%. Over half the sample (58.7%) reported having two or more chronic conditions. Non-fatal long-term conditions usually associated with advancing age (e.g. visual/hearing impairments, osteoarthritis) were the most prevalent. Potentially fatal chronic and preventable conditions were also common with skin cancer, depression and Type 2 diabetes mellitus (T2DM) having the highest prevalence across the sample (Fig. 2). Respondents with a mental health diagnosis

Table 2. Participant demographics

Variable	Result	Variable	Result
<i>Age (n = 136)</i>		<i>Main income source (n = 149)</i>	
Mean	66 years	Government pension	86.7%
Median	68 years	Investments	10.7%
Standard deviation	13.4	Paid work	2.6%
Age range	22–87 years	<i>Occupation history (n = 130)</i>	
<i>Living arrangements (n = 150)</i>		Blue-collar background	87.6%
Living with partner and/or children	74%	Labourer	24.7%
Living alone	25.3%	Tradesman	24.6%
Living in a care facility	0.6%	Farmer	20.8%
<i>Housing arrangement (n = 149)</i>		Other	19.3%
My own house	73.9%	Driver or mechanic	16.9%
Rental accommodation	22.3%	White-collar background	12.3%
Retirement village	3.3%	Engineer	3.8%
<i>Employment status (n = 152)</i>		Other	7.7%
Paid work	6%	<i>Highest education (n = 67)</i>	
Retired	63.2%	Year 7 or below	13.6%
Unemployed	19.7%	Year 8	10.1%
Volunteer	11.2%	Year 9	11.4%
<i>Household income, \$ (n = 137)</i>		Year 10	18.8%
0–24 999	51.8%	Year 11	12.1%
25 000–49 999	38.7%	Year 12	16.1%
50 000+	9.5%	Trade qualification	22.8%
		TAFE (Technical and Further Education) or university	22.1%

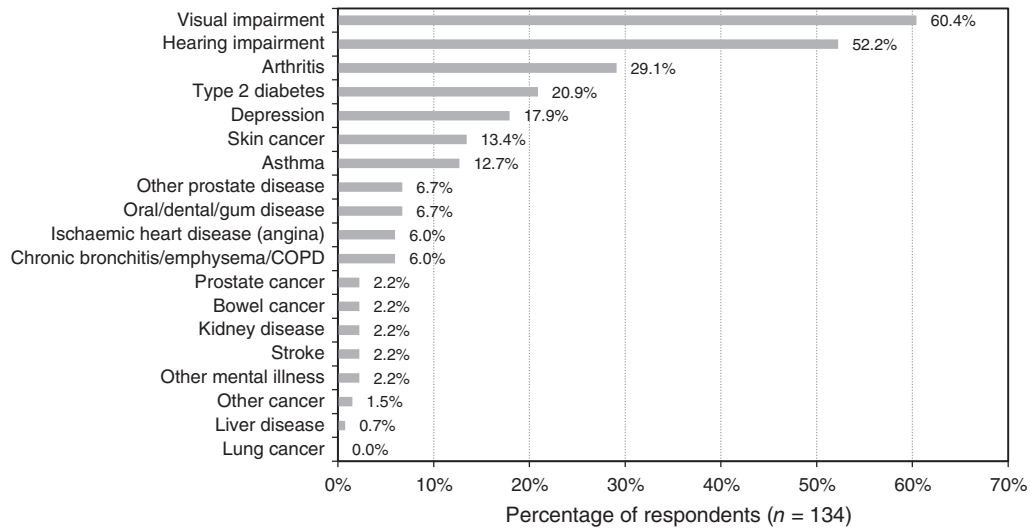


Fig. 2. Self-reported current medical history. (COPD is chronic obstructive pulmonary disease.)

were significantly more likely to report poorer mental health ( $\chi^2 = 31.5$ , d.f. = 2;  $P < 0.0001$ ) or more than one chronic disease ( $\chi^2 = 6.7$ , d.f. = 2;  $P = 0.035$ ).

Eighty-five percent of participants had a body mass index (BMI)  $>25 \text{ kg/m}^2$  and 38.6% a BMI of  $>30 \text{ kg/m}^2$ ; 56.7% reported a waist circumference of 94 cm or above. Sixteen percent of participants were smokers, 45% had previously smoked and 30% reported never having smoked.

Health concerns referred to health issues, present or not, that were worrying to respondents. Health interests referred to health-related topics for which respondents indicated they desired more information or instruction, and may not necessarily be related to past or present health conditions. Physical health (70%) and diet and lifestyle (61%) issues were the areas of most concern reported by participants, while reproductive (26%) and sexual health (19%) accounted for the lowest proportion of concerns. Correspondingly, physical health along with diet and exercise were the domains of most interest to participants as reported by 91% and 90% of respondents. Within these domains respondents wanted more information about heart conditions (62.7%) and bones and joints (59.9%).

While reproductive health was reported as a concern among about a quarter of respondents, three-quarters (75%) expressed interest in knowing more about sexual and reproductive health (SRH) issues, including 65% about diseases of the prostate. Social health and mental health were of concern each to less than half (43%) of respondents. However, interest in more information about these topics was reported by 89% and 87% of respondents (Table 3).

**Health knowledge**

Participant health knowledge was assessed through six categories addressing psychological, SRH, chronic disease risk factors, nutrition

Table 3. Summary of domains of health concerns, interest and knowledge

Domain	Health concerns (%)	Health interests (%)	Health knowledge – correct answers (%)
Physical health	70	91	79
Diet and exercise	61	90	62
Social health	43	89	– <sup>A</sup>
Mental health	43	87	54
Reproductive health	26	75	56
Sexual health	19	77	45

<sup>A</sup>Social health was not covered in the health knowledge section of the survey.

and alcohol consumption. Each category contained true or false statements on the topic and the number of correct answers in each category were tallied. General health risks (e.g. salt intake, blood pressure (BP), diabetes risk) received the highest proportion of correct responses (79.2%). Knowledge deficits were apparent for reproductive health (56%) and mental health (54%), including for prostate function and suicide in rural areas (Table 3). These deficits corresponded with topics for which respondents desired more information.

**Help-seeking**

General practitioners (GP) (95%) were the person from whom participants most often (always, often or sometimes) sought medical advice, followed by family members (72.8%), partners (71%) or pharmacists (60.2%). Preventative health checks were the most common reason for seeing a health professional (84.8%) followed by limitation of function due to pain (82%) or for severe pain or severe symptoms of disease (77% each). When feeling unwell, almost two-thirds (61%) of respondents reported self-medicating, including 25.5% who reported using alcohol as a means of coping. Seventy nine percent of respondents reported having a general

health check in the previous 12 months with the most common checks being for blood pressure, cholesterol and blood glucose levels. Participants were less likely to have visited a doctor for a mental health issue (16%) or for prostate (35.9%) or bowel cancer (21.7%) screening in the previous 12 months.

### Learning preferences

Hands-on or kinaesthetic learning, defined as a form of ‘learning-by-doing’ or through practical inquiry, was the preferred (84%) format for receiving health information. Examples of this type of learning in relation to health could include ‘playing’ with gross (e.g. chest and trunk) or specific (e.g. testicular self-examination simulator) models to identify positions or pathology of various organs, actually applying dressings or bandages in a first-aid class or administering CPR or applying pads from a defibrillator on a mannequin. The reading of pamphlets or short articles (77%) and attending informal question and answer sessions (68%) were the next preferred learning methods. Use of the internet and watching movies or documentaries were among the least preferred. There was no statistically significant relationship between education attainment and either the preferred format for health information or for health literacy. Respondents reported the shed as a suitable setting for informal learning about hobbies and crafts (88.4%), trade and construction (76.9%), health (74.3%) and exercise (54.1%). Shed members favoured the shed as a suitable setting for learning because it was male-friendly (92%), non-compulsory (85%), and offered an informal group setting (82%) (Fig. 3).

### Discussion

Although participant attributes were generally consistent with previous studies – that is, older, retired, lesser educated, lower socioeconomic strata – a larger proportion (68%) of men were aged 65 years and older compared with a previous study (44%).<sup>6</sup> The sample also had higher a proportion of men educated to year 7 or below. The older age may be due to SA being an earlier adopter of the shed movement compared with other states. The limited educational attainment is consistent with the predominantly rural demographic of participants and literature that indicates baby boomers and their antecedents, particularly in rural areas, having lesser educational opportunities compared with their urban counterparts.<sup>18</sup> The older age and lesser education may present implications for the language and reading level used when developing health promotion materials.

### Health status, interests and concerns

The sample had a high proportion of participants with chronic disease as well as a tendency to being overweight or obese. This places respondents at increased risk of cardiovascular disease, metabolic syndrome, T2DM, reduced testosterone levels and erectile dysfunction.<sup>19</sup> Although the conditions reported are comparable to those observed in similar age cohorts within the general population,<sup>12</sup> the findings validate the hypothesis that men who attend sheds have attributes that characterise them as being at heightened risk of chronic disease and therefore potentially amenable to health promotion interventions<sup>20</sup> that target preventable risk factors.

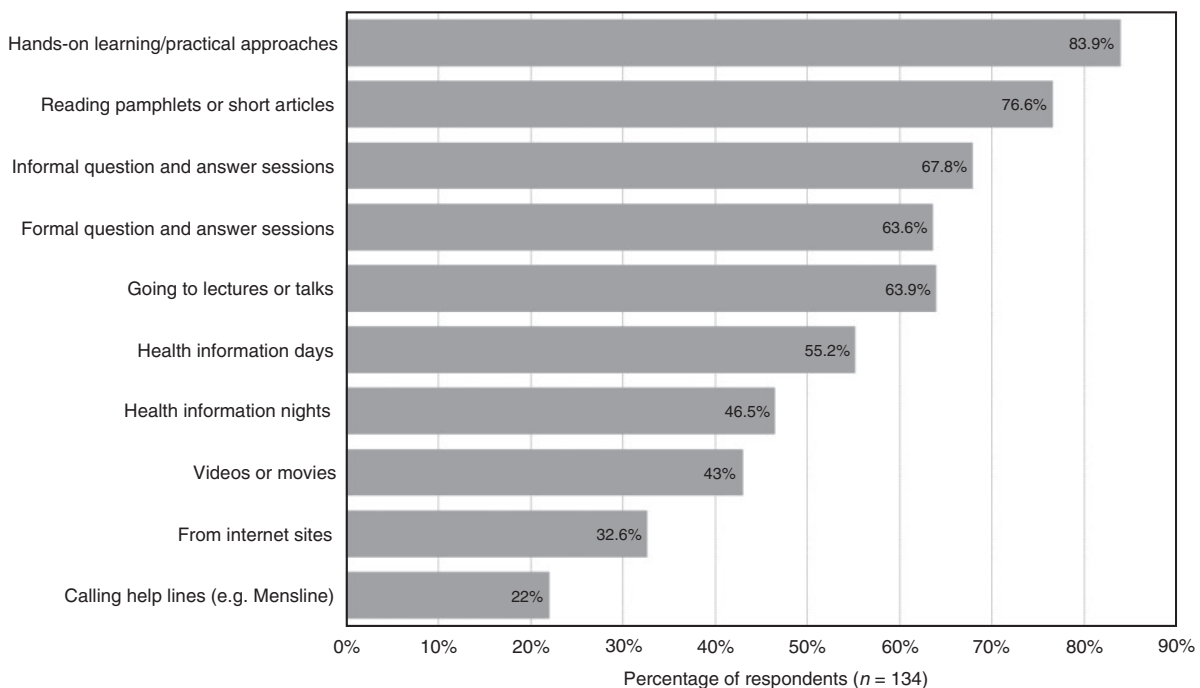


Fig. 3. Respondent learning preferences.

Study participants were more likely to seek health advice for preventative health concerns and general physical ailments, while being less likely to seek advice for psychological and sexual problems, a finding consistent with other literature where respiratory, cardiovascular and musculoskeletal problems were among the top five complaints managed by GPs.<sup>21</sup> The high proportions of preventative checks reported within the sample coincide with other studies which report rates of doctor visits increasing with age, reflecting the increase in chronic disease for older age groups, including for conditions for which preventative measures are available.<sup>22-24</sup>

Despite chronic disease being reported by over two-thirds of participants, the high proportion of self-reported 'good' health ratings suggests a possible disconnect between perceptions of disease (pathophysiology) and the illness (the functional impact on the person). These results parallel previous literature that shows older people evaluate their health relative to what they reasonably expect in light of their age and circumstance.<sup>25</sup> Similar results have been described for the broader Australian population, where despite people being significantly overweight they rated both their weight and health from average to good.<sup>26</sup> These findings suggest further education may be required regarding health determinants and risk factors for shed participants.

The difference between perceptions of health status and illness for participants was not uniform across all domains. For example, participants reporting chronic diseases such as cancer or depression were more likely to report poor psychological health. Similar results have been observed previously where depression and anxiety commonly coexist with chronic disease as either a precursor to or a consequence of the disease.<sup>20</sup>

Just under half of the study sample reported psychological health as a concern, which corresponds with other literature describing shed participants regarding their psychological health as or more important than their physical health and being a principal reason for their joining the shed.<sup>3,27</sup> Due to this high concern and its correlation with poor health status, it might be assumed that mental health was an issue shed members commonly discussed with health professionals. Yet, only ~1 in 6 respondents reported discussing either mental or emotional health with their doctors in the previous 12 months. This suggests that while older men may be aware of psychological health issues they are less likely to seek help, supporting previous data describing low mental health service use among Australian males.<sup>28</sup> Lower utilisation of mental health services may also be due to lesser access to mental health professionals in rural areas,<sup>29</sup> which may also be a factor in the high rates of suicide in older males.<sup>30</sup> This finding suggests that opportunities for mental health first-aid training or mental health screening in the shed setting may be worthy of future investigation.

Conversely, sexual and reproductive health concerns were seldom reported, which corresponds with about two-thirds of respondents

indicating not having a prostate exam or discussing RPH issues with their GP in the previous 12 months. This finding is higher than the reported national rate (48.4%)<sup>31</sup> and 50% in the Men in Australia Telephone Survey (MATEs).<sup>32</sup> MATEs found that males who lived alone and worked previously in blue-collar occupations were less likely to undergo prostate checks. Paradoxically, prostate disease was unanimously reported as a topic for which shed study respondents wanted more information, suggesting a lack of knowledge about screening and treatment as a barrier to seeking health advice from health professionals. Similar findings were seen for bowel cancer, where while only a small proportion of respondents reported having a faecal occult blood check, most wanted to learn more about bowel cancer and its prevention. Given that prostate and bowel cancer are among the top four causes of cancer mortality in Australian males,<sup>21</sup> it will be important to ensure these topics feature as key subjects in future shed health promotion programs.

### Health knowledge

Health knowledge, health literacy and its association with healthy behaviours and health outcomes makes it an important factor in health promotion.<sup>33,34</sup> The level of health knowledge across the six categories in this study generally correlated with the health status reported by participants of the men's sheds. The question categories with the lowest number of correct responses (psychological and reproductive) were also those where participants reported the lowest frequency of health checks, but which were of high interest to participants. This suggests participants were aware of their low health knowledge and were not averse to learning more about selected topics.

Findings from other studies have also described low knowledge regarding the function of the prostate, but have found that men who have contact with others who have prostate disease are likely to know more about the conditions.<sup>35</sup> Previous studies also highlight that knowledge regarding tests associated with prostate cancer detection is greater than knowledge regarding the function and necessity of the tests.<sup>36</sup> The inconsistency of knowledge suggests information about prostatic function, screening and disease should be a priority topic for future health promotion programs.

### Help-seeking

In the current study, the majority of men had seen their doctors in the previous 12 months for most commonly preventative and physical health checks, suggesting members are taking preventative measures to enhance their health. However, the second most common reason for seeking help was for when pain or loss of function affected daily life. These data coincide with previous research suggesting men tend to delay help-seeking until functional impairment demands that they can no longer avoid seeking help.<sup>37</sup>

In this study, while seeking health advice from partners and family was among the popular choices for help-seeking, seeing the GP was more common. This is consistent with some studies,<sup>22</sup> while contrary to others which report that males utilise friends and partners as the primary source before attending a health professional.<sup>38</sup> This finding may be unique to men from rural and remote towns where strong patient-doctor relationships are often formed between the only doctor in town compared with metropolitan areas where general practitioners move through clinics more regularly.

With regards to SRH, results were consistent with other studies showing a decreased likelihood for males to discuss such matters with their general practitioner.<sup>39</sup> In our sample this may reflect a lack of knowledge regarding selected conditions; including signs and symptoms and screening procedures for SRH or possibly, although unlikely, that the population did not experience significant symptoms from these ailments. With respect to psychological health, other research has highlighted a tendency for males to disguise health concerns as physical ailments, which could reflect the high number of physical health checks reported from the sample.<sup>40</sup>

### Learning preferences

Men's sheds have been described previously as a setting conducive to informal learning in older men.<sup>6,41,42</sup> Sheds demonstrate the social and wellbeing advantages of learning in a community of like-minded individuals where learning involves practical, productive activities with tangible personal and community benefits. These observations are consistent with men's sheds promoting self-directed, practical, holistic learning without teachers, curriculum or health professionals.<sup>43</sup> This in turn is consistent with the touting of men's sheds as a potential environment for men's health promotion by researchers and policymakers in recent times.<sup>2,4</sup> While not foregrounded as health settings, sheds offer a safe, occupationally familiar, non-judgemental environment which can make the discussion of health and emotional issues more comfortable.<sup>44</sup> In that way they are salutogenic (health promoting) for participants and provide flow on effects for friends, family and community.<sup>43</sup>

Previous research conducted on male learning preferences has identified the most effective programs as those conducted in safe, familiar places, where participation through talking and listening is strongly encouraged.<sup>45,46</sup> These studies have described preferred learning approaches in older men as kinaesthetic or 'learning-by-doing'.<sup>46</sup> The premise was confirmed in this study with all participants agreeing this was their preferred way of learning, including about health issues. Conversely, over two-thirds of respondents did not favour the Internet as a means of health information delivery. The latter finding probably reflects a low level of technology literacy among this age group.<sup>47</sup> Given the relative demographic homogeneity of this study's participants,

we acknowledge that learning preferences may differ among different shed cohorts across Australia. A closer examination of needs, interests, shed philosophy and function may be required to ensure that health promotion resources are best tailored to men's learning preferences in sheds in other jurisdictions.<sup>48</sup>

### Limitations

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While the study did include about half of the men's sheds in the study catchment, not all shed members elected to complete surveys. This raises the possibility that findings are not necessarily representative of all 'shedders' in the study sample. Also, since the study sample did not include all sheds within the sample catchment, the possibility exists that the findings may not be representative of all rural SA sheds. In addition, since the data presented is for rural SA sheds only, there may be additional diversity present in sheds in other states. As a result, findings from this study should be confirmed for other jurisdictions before assuming transferability. Also, data regarding the total number of members in each shed was not available, preventing calculation of response rates. We note that the survey used self-report methodology and did not include questions or measurements of other health indicators including blood pressure, blood glucose, cholesterol, diet and exercise, or alcohol intake among others, therefore limiting a more comprehensive description of the health profile of participants. Concerns regarding questionnaire burden limited the inclusion of these and other possible questions. Qualitative data is also lacking due to time, geographical and cost constraints that did not permit interviewing of participants, which leaves more subtle questions and relationships unexplored at this time.

### Conclusion

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Rural SA shed participants are generally older, retired, partnered and in low income brackets. Educational attainment is most commonly year 10 or less. Most report both general health and mental health status as fair to good; over half suffer from two or more chronic medical conditions and most are overweight. The key health concerns reported were for physical health, diet and lifestyle. Key knowledge deficits were apparent for sexual and reproductive health and mental health. Correspondingly, priority topics for health promotion programs were identified as prostate disorders together with other reproductive and sexual health issues, psychological health, risk factors for common chronic disease and bowel cancer. Health promotion programs should incorporate hands-on learning approaches where men can learn by 'doing', consistent with the learning preferences of older men.

Opportunities for future research include developing and testing a range of health promotion material, ensuring that content and format are guided by these and other study findings. When developing material, care should be taken to that ensure content and format reflects the needs of the men that attend the respective



sheds. Accordingly, programs should be designed to align with the health concerns, interests and learning styles of the target group and include consideration of socioeconomic and cultural factors, educational attainment, health literacy and shed philosophy, which may differ across different jurisdictions. Programs should be evaluated for relevance, acceptance, and effects on health knowledge, health literacy and health behaviours, and modified as necessary.

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