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**Outcomes of a Gender-Sensitized Health Behavior Program Delivered Through a Professional  
Sports Club**

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### **Abstract**

According to Australian health statistics, the disparity in mortality rates between men and women is substantial with poorer health promoting behaviors in men contributing to these differences. While gender-sensitized health interventions show promising results in promoting positive health behavior in men, further research is needed to better understand men's health promotion. In the current study, we investigated the outcomes of a gender-sensitized health intervention program for men delivered through a professional sports club in partnership with local government and community organizations. The branding of the Western Bulldogs Football Club is used by the program in a number of ways including in its name, Sons of the West. Participants were men in the western region of Melbourne and Victoria who participated in the program for the first time in 2019. Data was collected at baseline, post-program and a third wave at six-month follow-up on a sample subset. It was expected that both positive health behaviors and health self-efficacy would increase, and that conformity to masculine norms and psychological distress would decrease at post-program. These changes were also expected to be maintained longitudinally post program completion. Results supported these hypotheses showing significant positive changes with large effect sizes observed in health self-efficacy. Significant reductions were found in the masculinity subdomains of self-reliance and dominance. Demographics show the population were mostly middle-age and older men with health challenges who primarily resided in low socioeconomic areas. The findings show promising results for gender-sensitized health interventions and their importance for engaging and improving the long-term health of men residing in lower socioeconomic areas.

#### ***Public Significance Statement***

Sons of the West (SOTW) is a 10-week gender-sensitized health behaviour program for men leveraging the brand of a professional sport club. The program is tailored to address and work with men's gender stereotypes to increase positive health behaviour. The results of this study show the SOTW program was effective at engaging men in lower socioeconomic areas and improving their physical and mental health. Moreover, the program was also effective at reducing men's rigid adherence to stereotypical masculine norms, in particular those linked with negative health outcomes. The findings show promise for gender-sensitized health programs as a pathway to engage men in health promotion where conventional approaches have been ineffective.

*Keywords:* masculinity, lower socioeconomic men, gender-sensitized, self-efficacy, health behavior

### **Outcomes of a Gender-Sensitized Health Behavior Program Delivered Through a Professional Sports Club**

Australian Institute of Health and Welfare (AIHW) statistics show men on average die four years earlier than women and this gap is widened to eight years in lower socio-economic status (SES) groups (AIHW, 2015). Major contributors are limited uptake of healthcare, increased negative health behaviors and decreased positive health behaviors (AIHW, 2020). Positive health behaviors are often defined as seeking preventative healthcare, psychological help-seeking, engaging in physical activity and maintaining a nutritious diet. Nearly 50% of Australian men are likely to delay seeking primary healthcare (AIHW, 2019). Older men are also three-times more likely to take their own life (AIHW, 2019). Physical health behaviors are considered insufficient with three-quarters of Australian men classified as overweight or obese and more than half failing to meet the recommended guidelines for weekly physical activity (AIHW, 2019).

Those most likely to engage in health interventions have been characterized as female, Caucasian, tertiary educated, and in higher income brackets (Waters et al., 2011). Poor health promoting behaviors and reduced engagement with health programs have been linked to rigid conformity to masculinity norms; it has been suggested that health promotion may be experienced as institutionally “feminine” in its constructions (Courtenay, 2000). Men that are averse to health promotion are considered difficult to engage and are typically men in lower SES groups, at greater risk of chronic disease, practicing fewer positive health behaviors and reluctant to participate in traditional health interventions (Lewis et al., 2017; Shaghghi et al., 2011; Zwolinsky et al., 2013). Traditional western hegemonic values such as stoicism, competitiveness and self-reliance are argued to contribute to men's reluctance to engage in traditional health promotion interventions. Empirical evidence indicates an inverse relationship between conformity to masculine norms (CMNs) and health-promoting behaviors including diet, exercise, preventative care, social support, low risk-taking, psychological coping and help-seeking and health self-efficacy (Levant et al., 2011; Levant & Wimer, 2014; Mahalik et al., 2007). Health self-efficacy in turn predicts physical activity, nutrition, weight management, health-seeking, help-seeking behavior, and stress management (Annesi & Tennant, 2013; Kleim et al., 2008; Schopp et al., 2014). Furthermore, health self-efficacy is considered the largest predictor of short- and long-term health behavior change and the key mechanism of change in health behavior interventions (Arras et al., 2006; Bandura, 2004; Isa et al., 2017).

In recent years, guidelines have been published in various regions prompting health advocates and clinicians to consider stereotypical notions of masculinity and how they can be challenged to improve men's health (American Psychological Association, 2018; Australian

Psychological Society, 2017). Gender-sensitized health-behavior interventions have been shown to engage men experiencing health barriers related to gender stereotypes (Hunt et al., 2014). These interventions differ from traditional health promotion through tailoring of program content and setting such as delivery in community to male only participants, culturally themed content, male-specific health topics, male lived-experience speakers, and explicit engagement with masculinity (Bunn et al., 2016; Carroll et al., 2018). These interventions have been shown to be effective for the short-term but research is limited on the whether these benefits are maintained and little is understood on the mechanisms of action (Hunt et al., 2014, 2020).

Contemporary research considers masculinity as socially constructed, plural, fluid, and produced and reproduced by individuals in a given context; thus, individuals vary in endorsing these standards (Connell, 1995). Masculinity as a practice is suggested to be constantly negotiated to accord with societal standards. That is, men undergo constant identity change within social structures (Connell, 1995). Lower SES contexts may also impact experience of masculinity with men reported as more likely to practice hegemonic standards (such as power and strength), generating tension and further discouraging health promotion (Evans et al., 2011). For instance, some working-class men in lower SES backgrounds may engage in risky work-practices to bolster their social capital, increasing the risk of work-place accidents (Holt et al., 2015; Robertson et al., 2018).

Common psychological barriers to engaging in traditional healthcare services reported by men such as embarrassment, experience of vulnerability, and appearing feminine are often suggested to contribute to male avoidance of traditional health services. Gender-sensitized interventions aim to break down these barriers (Lefkowich & Richardson, 2018; Pringle et al., 2013; Smith et al., 2008). Such interventions may include shoulder-to-shoulder as opposed to face-to-face approaches encouraging men to participate in activities and share personal stories (Creighton et al., 2017; Lefkowich & Richardson, 2018). Research on impacting gender stereotypes through a documentary displaying the narratives of men and their accounts of psychological distress has been shown to be effective at reducing men's CMNs (King et al., 2018). These narratives are theorized to help men divorce attitudes such as excessive self-reliance and to promote help-seeking through positive reinforcement while preserving a sense of gender identity. Similar accounts of gender-related health struggles were seen in group-based interventions which emboldened participants to challenge their beliefs and attitudes, negotiating toward a "healthy masculinity" (Peretz et al., 2020; Peretz & Lehrer, 2019).

The notion of football as culturally significant for men may explain its appeal to men residing in lower socioeconomic areas as a health promotion setting (Spandler & McKeown, 2012). Men residing in these areas describe a 'pull' towards these programs as opposed to a 'push,' urging men

to improve health (Hunt et al., 2014). Participants are often from lower SES communities and report co-occurring health-risks such as hypertension, diabetes, cancer, depression, and obesity (Bingham et al., 2014). Health promotion programs delivered through professional football clubs are suggested to be an effective hook to engage hard-to-reach men and have been found to significantly improve the health behaviors of participants (Bottorff et al., 2015; Hunt et al., 2014). However, there is a considerable gap in research examining the psychological outcomes contributing to health behavior change, and whether these changes are maintained.

### **Sons of the West Program**

#### ***Intervention Characteristics***

Sons of the West (SOTW) is a gender-sensitized health behavior change program delivered with the branding of the Western Bulldogs Football Club, an Australian national football league team based in the western region of Melbourne, Australia. The program was first piloted in 2014 and has been delivered annually in consecutive years. It is offered to adult male residents of regional and metropolitan areas of Victoria's western region. The design is place-based, using partnerships with local councils and community health organizations to deliver the program in community facilities local to men.

Since 2016, the program has been 10 weeks in duration (once a week for two hours). It has grown from five site locations in the 2014 pilot to between 10 and 14 site locations across the region. The sessions are mostly scheduled on weeknights with some sites offering daytime sessions. Each site actively manages the size of the group which is typically between 30-50 participants, depending on demand and venue capacity.

The program aims to generate long-term health changes for men in five key areas. These are to: (1) sustain participation in physical activity; (2) connect to community to build and maintain positive social networks; (3) improve mental wellbeing and develop skills to access psychological services; (4) sustain positive health behaviors including access to preventative health screenings and health service access; and (5) challenge rigid adherence to stereotypical masculine ideals that contribute to negative health outcomes and promote gender equity.

The program utilizes a three-year model of capacity building where men are eligible to participate annually for up to three years. Returning men are encouraged to reinforce and extend their behavior change, and to model positive health behavior to newer members and their community.

#### ***SOTW Program Participants***

The program is available to any adult male in the region. Participants can attend any location they live, work, or recreate within. Participants are encouraged to choose one primary location but may attend another if they cannot attend one specific night and wish to attend another. Program participants are recruited through community groups and noticeboards, word of mouth via social networks, recommendations from health practitioners, and media/online advertisements. In 2019, a total of 589 men were registered. Of these, 357 were first year participants. In the same year, 80% of men attended seven or more sessions (the benchmark set to graduate from the program).

### ***Intervention Context***

The first hour consists of an educational presentation and in the second hour men participate in physical activity. The physical activity component offers exercise groups of varying intensity, structured to cater for differing fitness levels and physical abilities. These exercise groups are facilitated by local practitioners such as personal trainers and exercise physiologists.

Information based presentations are delivered by a range of partner organizations with expertise in health topics presentations on health topics such as nutrition, mental health, cancer and preventative health screenings, cultural inclusion, alcohol, gambling and promoting gender equity. Provisional psychologists (registered to practice psychology under supervision by The Psychology Board of Australia (2021), equivalent to training license) on postgraduate placement attend each site and engage with participants. Presentations may be accompanied by a lived experience component where a guest (typically a male) representing the health organization or a participant of the SOTW program shares their experiences and narratives for the relevant topic. Examples of experiences shared include gambling, alcohol consumption, neglecting health screenings for cancer, depression, suicidal ideation and accessing psychological support. Lived experience speakers are pivotal; their shared narratives provide a model of interpersonal openness and relatability. Participants are also provided resources which they can take home relating to the health information presented.

The first week is an orientation session aimed at enabling the participants to understand what to expect from the program, take part in getting to know each other activities and introduce a focus on group expectations and safety considerations. A session focusing on mental wellbeing is held in week two or three. This timing aims to help men open up and build rapport with each other and the provisional psychologists onsite. Pathways to other low-cost community activities or groups are promoted in the final session to sustain men's engagement with health and the local community.

Participants are encouraged to visit a general practitioner for recommended health checks. They are also encouraged to engage in group activities outside the program such as Heart Foundation walking groups to increase positive social networks and provisional psychologists



'floating' around community facilities. Lived experience speakers are also pivotal; their shared narratives provide a model of interpersonal openness and relatability.

To facilitate a welcoming atmosphere and identify year level, men are given branded colored shirts to correspond to the number of years of program participation. First year participants are given white shirts, second year participants are given blue shirts and third year participants are given red shirts. Participants are also provided resources relating to specific topics from the guest organisations.

### ***On-Site Coordination***

Each local site is managed by the local government council. The council provides a local coordinator who is responsible for overseeing program delivery at that site. The WBCF provide training to all program coordinators prior to each program. Each location has various support personnel to assist in program operations. The number of support people depends on the group size. There is a minimum of two to three exercise staff.

WBCF works with partnering organisations to arrange guest presenters and provides briefing in advance with key information on the cohort. Exercise staff are provided with an example of a 10-week exercise session plan but have the autonomy to deliver the sessions as they deem best appropriate for the cohort.

### **The Current Study**

Gender-sensitized interventions are a promising pathway for men residing in lower socioeconomic areas to engage in health behavior compatible with their endorsement of gender identity. Research has yet to measure self-efficacy and rigid adherence to masculine norms together in these contexts. The aim of this research is to 1: Investigate the changes in CMNs, health self-efficacy and health behaviours in a gender-sensitized health behavior intervention. In the first hypothesis, men's positive health behaviors and health self-efficacy were expected to significantly increase, and CMNs and psychological distress were expected to significantly decrease from pre- to post-program. 2: Investigate whether changes were sustained at a six month follow up from the program. We also hypothesized that changes would be sustained after six months.

## **Methods**

### **Participants**

In 2019, 357 men attended SOTW program for the first time, 247 consented to participate in the research and completed the pre-program questionnaire (with a participation rate of 69%). Of these, 217 could be matched with the demographic dataset. A complete list of participant demographics can be seen in Tables 1 and 2. Pre- and post-program questionnaires were completed

by 135 participants yielding a completion rate of 54%. At six-month follow-up, 26 participants who had completed post-program measures provided T3 data.

## **Materials**

### ***Demographic Questionnaire***

A demographic questionnaire asking ethnicity, age, occupation, postal code, smoking status, disability status, physical activity, and medical history was used. Using medical history, physical activity, age and smoking status, the WBCF categorized each participant into a health-risk category to inform men's inclusion in the different exercise groups.

### ***Health Self-Efficacy***

Salient items of health-related self-efficacy beliefs were sourced from the literature. These instruments include the Self-rated Abilities for Health Practices (SRAHP; Becker et al., 1993) and the Self-efficacy in Seeking Mental Health Care scales (SE-SMHC; Moore et al., 2015). Questions were chosen based on SOTW program aims. Questions less relevant to program outcomes (e.g., brushing your teeth) were removed to reduce participant demand.

The modified health self-efficacy scale consisted of 20 items measuring health self-efficacy across four domains of health, including: (1) nutrition; (2) health-seeking; (3) psychological help-seeking; and (4) exercise. The scale is rated on a 10-point Likert-type scale, ranging from 1 (not confident at all) to 10 (Very confident), measuring participants' confidence in carrying out specific behaviors during everyday life. Scores are summed to provide a global "health self-efficacy" variable. Higher scores indicate greater confidence in an individual's capacity to carry out health-specific tasks. Some examples questions were "recognize what symptoms should be reported to a doctor" and "know when I should speak to someone about how I am feeling".

Responses from the pre-program questionnaire on health self-efficacy items were subjected to principal components analysis (Varimax rotation); Eigenvalue threshold was set to  $> 0.95$  to increase sensitivity, adjusted to discriminate between health-seeking and psychological help-seeking constructs. A KMO and Bartlett's test of sphericity was significant ( $p = .001$ ) indicating that the 20 items had sampling adequacy and are measuring the intended construct. A clear factor structure emerged with four factors in the health self-efficacy instrument (nutrition, health-seeking, psychological help-seeking, exercise). A reliability analysis using Cronbach's alpha ( $\alpha$ ) was then run on the sample and yielded high reliability for all subdomains ranging from .80 to .92.

### ***Conformity to Masculine Norms***

CMNs was measured using the Conformity to Masculine Norms Inventory-22 (CMNI-22; Owen, 2011) which is a shortened version of the original CMNI and consists of the same subdomains (Mahalik et al., 2003). The CMNI-22 was designed to assess the affective, cognitive, and behavioral aspects of adhering to traditional western masculine values. Respondents were asked on a four-point Likert-type scale how strongly they agree with statements pertaining to western masculine values (0 = "strongly disagree" to 3 = "strongly agree"). Higher scores indicate higher conformity to masculine norms. The scale is self-reported and has 11 factors, emotional control, winning, playboy, violence, self-reliance, risk-taking, power over women, primacy of work, disdain for homosexuals, pursuit of status, and dominance (Mahalik et al., 2003). Questions include "In general, I enjoy taking risks" and "I never ask for help".

A modified version of the CMNI-22 was used as two items (questions reflecting disdain for homosexuality) were removed at the request of the WBCF due to their potentially confronting nature for new participants. The present study yielded varying reliability for each latent construct but were similar to those in past research (Smiler & Epstein, 2010). Reliability analyses on global scores showed less than acceptable reliability at pre-program ( $\alpha = .55$ ) and post-program ( $\alpha = .63$ ). These were expected and comparable to previous reliability analyses on the global score of CMNI-22 (Owen, 2011). The measured subdomains of the CMNI-22 showed mixed levels of reliability at pre-program and post-program (importance:  $\alpha = .20, .43$ ; dominance:  $\alpha = .62, .63$ ; risk:  $\alpha = .38, .38$ ; women:  $\alpha = .08, .34$ ; emotion:  $\alpha = .78, .83$ ; playboy:  $\alpha = .75, .85$ ; violence:  $\alpha = .36, .25$ ; status:  $\alpha = .44, .58$ ; winning  $\alpha = .42, .63$ ; reliance:  $\alpha = .60, .66$ ).

### ***Psychological Distress***

Psychological distress was measured using the Kessler Psychological Distress Scale (K10; Kessler et al., 2003). The scale is self-reported and asked participants on a five-point Likert type scale (1 = "none of the time" to 5 = "all of the time") how frequently in the last 30 days respondents felt various psychological states such as restlessness, tiredness, and hopelessness. Some questions included "Did you feel so restless you could not sit still?" and "Did you feel worthless?" Higher scores indicate higher levels of psychological distress. Reliability analyses showed good reliability at pre-program ( $\alpha = .93$ ) and post-program ( $\alpha = .93$ ).

### ***Health Behavior***

Health behaviors were measured in four key areas (health-seeking, psychological help-seeking, community engagement, and physical activity). The items were developed in collaboration with the WBCF which required measurements to align with outcomes and health policy. Health

behavior questions asked participants about their levels of health engagement. These questions are commonplace in health programs and it has been suggested in research that self-reported behaviors are a better proxy for health behavior than intentions (Smith et al., 2008). Other benefits include reduced underreporting and demand characteristics (Shepherd & Rickard, 2012).

Health behavior was a variable calculated by collating several dichotomous variables that asked participants questions regarding health service access (“in the last month, have you visited any health services?”) and community service access (“in the last month, have you engaged in any community activities?”). A “no” responses was coded as 0 and a “yes” response was coded as a 1. For physical activity, a question asked participants the number of days per week exercised for over thirty minutes at a moderate intensity, coded as 0-7 to reflect the number of days per week. This single item measure has been found to accurately detect a change in physical activity (O’Halloran et al., 2020). The three scores were combined into a single variable representing health behavior. For the follow-up survey, the questions were modified to replace “in the last month” to “in the last six months”, consistent with the follow-up time-period.

### **Procedure**

Ethics was approved by the VU Human Research Ethics Committee (VUHREC HRE18-023) prior to undertaking the research. Researcher 1 attended each location and invited men to participate. Men were told during their first and last session that participation in this research would further the scientific understanding of the program and be used for the purpose of program improvement. Those who were interested were given an information to participants and consent form. Pre-program questionnaires were administered at all locations of the SOTW program during the first and second week. Participants completed the post-program questionnaires at the last session. Participants were asked to be contacted for follow-up data collection through email, SMS or by post. Those who agreed were then contacted and sent either a link to an online Qualtrics survey or mailed a physical survey with a replied paid envelope.

### **Data Analysis**

Analyses were conducted using SPSS statistical analysis software (SPSS Version 25.0; IBM Corp., 2017). Baseline demographics were analyzed using descriptive statistics and bivariate correlations to illustrate the demographic data and its associations with baseline psychosocial measures and health behavior. A series of 20 repeated-measures ANOVAs were conducted to measure and compare four variables (CMNs, health behavior, health self-efficacy, and psychological distress) from pre-program (T1) to post-program (T2) and post-program (T2) to follow-up (T3). A

secondary set of analyses were run to compare physical activity from T1 to T2, T2 to T3 and the sub-factors of the CMNs from T1 to T2. Effect size is reported as partial eta squared (Cohen, 1973). Cut-off values were identified at 0.01 (low), 0.06 (medium) and 0.14 (high). The study was single arm as there was no control group.

Data from all three time-points were matched using participant codes. Cases were excluded from analyses if participant codes could not be matched. Data was subsequently screened to detect outliers. A statistically significant threshold was set at  $p < 0.05$ . A missing case analysis using Little's test was conducted on the constructs of health self-efficacy, CMNs, and psychological distress to determine whether missing responses were random or systematic. Cases that had completed 80% or more of a scale (i.e., 16/20 questions for the health self-efficacy scale and 8/10 questions for the psychological distress) had missing values replaced with the case's mean score for the scale. This is a recommendation based on guidelines for managing missing data (Allison, 2001). Normality was assessed using skewness and kurtosis scores with a cut-off of  $\pm 3$ . All the assumptions for within-subject analyses were met for the data.

## Results

A missing case analysis found that items were missed not at random ( $p > .05$ ). Cases with more than 20% of missing data on any psychological or health behavior construct were pairwise deleted. Cases with fewer missing items were included and missing values were corrected with the participant's mean score for the respective variable. All variables were normally distributed apart from psychological distress at T3. An extreme score was observed in one case on this variable deviating +3.9 standard deviations from the mean on the CMNs and was pairwise removed. For the first set of hypotheses, the resultant sample size ranged from 128 to 135 participants. For the second set of hypotheses, there were 20 to 26 participants.

### Participant Characteristics

The mean age of participants was 52.89 years ( $SD = 15.42$ ) ranging from 19 to 86 (see Table 1). Most participants were born in Australia (71%). Thirty-five percent of the sample were not working due to retirement or receiving a pension. The reported psychological distress mean score of 19.02 indicated moderate distress based on The Australian bureau of Statistics population normative data (see Table 2; Australian Bureau of Statistics, 2019). The majority of participants had moderate levels (likely to have a mild disorder) of psychological distress or greater based on K10 scores (Slade et al., 2011). Eighty percent of participants included in this study were classified as high or moderate health risk. Physical activity behaviors showed that only 22.2% of men met the minimum physical

activity guidelines defined as 150 minutes of weekly moderately physical activity (Victorian Health Promotion Foundation, 2019). Men joining the program primarily reside within ten postal areas. Based on Socio-economic Indexes for Areas (SEIFA) scores, 65% of these postal areas were ranked in the bottom 20% in Victoria with regards to socioeconomic advantage and disadvantage (Australian Bureau of Statistics, 2018). The Australian Bureau of Statistics, Australia's national statistical agency, ranks socio-economic advantage and disadvantage using census data including income, education and employment to determine socioeconomic disadvantage by postal area. Correlations between demographic data and baseline health characteristics also show that as the age of participants increase, their risk of negative health outcomes increase, and this risk is also significantly positively correlated with psychological distress (see Table 3). CMNs also showed a significant negative relationship with health self-efficacy and a significant positive relationship with psychological distress.

### ***Program Outcomes***

Means and standard deviations for key outcome variables and sub-factors of CMNs are reported in Tables 4 and 5. All group comparisons from T1 to T2 are presented in Table 4. Results showed a significant increase in health self-efficacy and health behavior with large and moderate-large effect sizes respectively (Cohen, 1973). A significant decrease was also observed in total CMNs scores and psychological distress with moderate effect sizes. Physical activity had also significantly increased from pre- to post-program. Individual analysis on the sub-factors of the CMNs showed that self-reliance and dominance had significantly reduced, with moderate effect sizes.

A follow-up analysis was conducted to determine whether the changes were sustained between T2 and T3 (see Table 5). Results showed three of the four variables did not significantly change (with significant increases seen in health behavior) at follow-up (health behavior, CMN, psychological distress), indicating changes observed at T2 were maintained. The increase in health behavior may be due to the modification of two questions asking about health and community service access where the time frame was widened from one month to six months, consistent with the follow-up time-period.

### **Discussion**

Sons of the West health promotion program is effective in improving health outcomes for middle-age and older men residing in lower socioeconomic areas, showing significant improvements and evidence of maintaining these across a six-month period. Participants showed increases in both health self-efficacy and positive health behavior, and decreases in both psychological distress and in rigid conformity to stereotypical masculine norms. This study builds on gender-sensitized research

by providing evidence of the immediate and sustained changes to health self-efficacy, theorized to be a key predictor of long-term health behavior change (Arras et al., 2006; Bandura, 1998; Isa et al., 2017).

Effects were largest in health self-efficacy which comprises of psychological help-seeking, health-seeking, nutrition and physical activity beliefs. This is the first study to provide empirical support for health self-efficacy in this population, often suggested to be the key mechanism of action in gender-sensitized contexts (Bingham et al., 2014; Pringle et al., 2013). The group setting of the SOTW program is designed to encourage men to interact and support each other and facilitators, presenters and provisional psychologists are available on site to further this aim. Men can model and receive feedback from one another to impact health related attitudes and expectations, likely contributing to the changes seen in health self-efficacy. Participants joining the program for the first time integrate with second year and third year participants which provides opportunities for learning from relatable men's experiences around health change. Furthermore, the lived experience speakers discussing male-specific health topics provide both modelling and narrative about self-efficacy and a guide to practical lifestyle changes. These behavior change techniques are designed to enhance self-efficacy and are theoretically consistent with the social cognitive theory of health promotion (Bandura, 2004).

Demographics and attendance records show SOTW was effective at attracting and sustaining engagement with low socioeconomic populations; 80% of men attended seven or more of the 10 weeks. Similar gender-sensitized programs delivered through professional sports clubs showed comparable health characteristics in their cohort which were classified as hard-to-reach (Pringle et al., 2011; Pringle et al., 2014). These health characteristics include as little as a fifth of men reporting adequate exercise behaviors and the majority possessing multiple risk-factors for negative health outcomes, as well as infrequent access to healthcare services. Some previous gender-sensitized programs restricted age to under 44 years (Pringle et al., 2011; Pringle et al., 2014). SOTW differs in that it targets adult men of all ages. Primarily, participants were middle-age and older men at a higher risk of negative health outcomes. This study also differs in that postal areas of participants were recorded and showed that men primarily reside in lower SES areas, a demographic associated with poor health behavior (AIHW, 2019; Clark, 1996). Adding to this, the two highest occupations reported were retired or working in a trade which has been suggested to be linked to a reluctance to engage in health services (Robertson et al., 2018).

The results also showed statistically significant reductions in CMNs. These effects were comparable to those seen in another health promotion initiatives addressing masculine stereotypes

(King et al., 2018), which encouraged men to challenge stereotypical gender norms around psychological help-seeking. SOTW similarly encourages men to challenge gender stereotypes that may lead to negative health outcomes, likely explaining changes to both CMNs and health. Changes in health self-efficacy co-occurring with changes in CMNs also suggest higher endorsement of traditional masculine stereotypes may lead to men risking their health as they lack the capacity to carry out specific tasks (Courtenay, 2000). These tasks include health-seeking, psychological help-seeking, using positive coping strategies, engaging social support, exercising and maintaining a nutritious diet (Mahalik et al., 2007; Levant et al., 2011). The cultural significance of the professional sport club may offer a platform to engage men with greater adherence to masculine stereotypes prone to view health promotion as institutionally feminine (Courtenay, 2000). Adding to this, the program encourages men to challenge their rigid adherence to masculine norms by both increasing their capacity to perform health promoting behaviors and directly challenging these norms through lived experience speakers and positive male role models. This study has also been the first to examine CMNs in men residing in lower socioeconomic areas who are suggested to have greater adherence to gender norms and make a greater contribution to the gap in mortality between men and women than men in general (Robertson et al., 2018; AIHW, 2015).

Changes in CMNs were seen in self-reliance and dominance. These findings support the premise that health outcomes may be linked with specific sub-factors of adherence to rigid masculinity and are consistent with a meta-analysis that found self-reliance had the strongest relationship to negative health outcomes in comparison to other masculinity subdomains (Wong et al., 2017). It may be that men with higher levels on specific subdomains such as self-reliance and dominance may be more likely to view positive health engagement as a weakness and are thus less likely to seek help. The safe space of gender-sensitized interventions may enable men to discuss emotions and sensitive topics, make social connections and self-reflect (Bunn et al., 2016). Further examination of the meaning of self-reliance for men, their expectations in help-seeking and how this is negotiated would provide a clearer understanding of the phenomenon.

Outcomes in psychological distress and health behavior were also positive. At baseline, participants were approaching moderate levels of psychological distress with 11% of men at clinical levels. The program's emphasis on mental health promotion is a point of difference from many other gender-sensitized sports-based programs and likely contributed to the changes in psychological distress. The program incorporates access to psychological services onsite, mental health education, and a space to openly express emotions and concerns with other men in an environment that fosters positive coping strategies. Increases were also seen in health behavior which encompassed physical activity and healthcare and community service access. The increases are likely explained by graded



exercise, community pathways provided by the program, incentives, lived experience speakers and clinicians presenting on preventative healthcare.

The longitudinal findings support and build on previous research which found changes in health were maintained twelve months post program (Hunt et al., 2014). Previous research has been limited to measuring health behaviors, biometrics, affect, self-esteem and quality of life. The current study extends previous research by including CMNs and health self-efficacy to support the notion that gender-sensitized programs impact key factors for overcoming barriers and maintaining changes in the long-term (Bandura, 2004; Isa et al., 2017). A likely contributor to this is the unique SOTW community helping men to sustain social engagement and form interpersonal relationships with other men with similarly aligned health goals. Furthermore, when the SOTW program concludes, there are several opportunities for men to maintain contact with each other through community pathways and self-led exercise groups. Improvements were seen in health behavior at follow-up, likely due to the modification of two questions widening the time frame of health and community service access from one month to six months. There were no changes seen from post-program to follow-up when analyzing physical activity separately (an unmodified measurement of health behavior); thus it can be inferred that changes in health behavior were similarly maintained.

There were several limitations in this study. Firstly, the program is held once a year, thus a wait-list control group could not be used. In similar interventions, a double-arm design found minor improvements in controls (Hunt et al., 2014). Second, the data collected was self-reported and subject to social desirability bias. In particular, a desirability bias due to allegiance to the popular cultural symbol of the football club may have further influenced this limitation. The scale used to measure CMNs also showed poor reliability due to using the shortened version of the scale. More objective measures for health outcomes may have provided a clearer picture at follow-up to determine whether health outcomes were maintained. These include biometrics such as BMI, waist circumference and tracking devices such as step counters. Third, the follow-up sample size was considerably smaller than the number who agreed to be contacted for follow-up. This is likely due to the timing of data collection, which took place shortly after the new year. Furthermore, participants were required to retain their unique ID to complete the survey, which may have led to the poor response rate. Indeed, some participants completed the follow-up but failed to provide their ID, and therefore, could not be included. Conclusions regarding the six-month follow-up should be viewed as tentative.

## **Conclusion**

The findings from this study build on the effectiveness of gender-sensitized health behavior interventions in promoting health self-efficacy, positive mental health, health behaviors and challenging rigid adherence to masculine norms. Furthermore, there is some evidence to suggest these changes are sustained longitudinally. The findings demonstrate gender-sensitized models that utilize the branding of professional sports clubs to be effective for Australian men. The SOTW program has been shown to recruit middle-age and older men residing primarily in lower socioeconomic areas with poor health and health behaviors. Likely, this success is due to the symbolic cultural identity and affinity men have with professional sports. While this is a very local-based program, other sports clubs in other countries have also shown the capacity to leverage professional sports (Pringle et al., 2013), and we expect there are practical applications that can be applied, transferring outcomes to other locations including other countries. Beyond football, it is possible that other cultural symbols that men relate to can be used to attract men and help overcome their initial reticence to engage in health promotion behaviors. There is conflicting research on the implications for gender-related attitudes on health. Challenging masculine norms directly may partially explain the keys to success, but what may be more important is how masculinity is renegotiated and preserved for health promotion in these contexts (Robertson et al., 2013). Contemporary research urges a shift to positive models of masculinity (Cole et al., 2020). A Positive Psychology/Positive Masculinity (PPPM) framework may be useful in studying gender-sensitized health interventions and how they work for men in ways that retain the qualities of what it means to be a man and how greater flexibility for health promotion is fostered (Kiselica & Englar-carlson, 2010). The findings prompt further investigation into the causal mechanisms leading to positive change and this research provides the stepping-stone to understand how these norms are negotiated, and how they can be implemented into wider contexts to increase men's health self-efficacy.

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## Appendix

Table 1

*Participant Characteristics*

| Measures                                  | %  | <i>n</i> |
|---|----|----------|
| Age                                       |    |          |
| 19-39                                     | 20 | 43       |
| 40-64                                     | 52 | 111      |
| 65+                                       | 28 | 61       |
| Country of Birth                          |    |          |
| Born inside of Australia                  | 71 | 150      |
| Born outside of Australia                 | 29 | 59       |
| Aboriginal or Torres Strait Islander      |    |          |
| No  | 98 | 153      |
| Yes                                       | 2  | 3        |
| Speak Language Other Than English         |    |          |
| No  | 80 | 125      |
| Yes                                       | 20 | 32       |
| Disability Support                        |    |          |
| No  | 88 | 137      |
| Yes                                       | 12 | 19       |
| Employment                                |    |          |
| Retired/pensioner                         | 35 | 66       |
| Technical and trade worker                | 17 | 34       |
| Manager and professionals                 | 16 | 33       |
| Laborer, machinery operator and driver    | 11 | 22       |
| Community and personal service worker     | 9  | 19       |
| Clerical, sales and administrative worker | 8  | 15       |
| Clerical, sales and administrative worker | 8  | 15       |

**Table 2***Baseline Health Characteristics of Study Participants*

| Measures   | %    | <i>n</i> |
|--|------|----------|
| Physical Activity                                      |      |          |
| Meeting physical activity guidelines                   | 22.2 | 62       |
| Participated in a community activity in the last month | 41.1 | 115      |
| Psychological Distress                                 |      |          |
| Likely to be well                                      | 45.7 | 128      |
| Likely to have a mild mental disorder                  | 14.3 | 40       |
| Likely to have a moderate mental disorder              | 11.4 | 32       |
| Likely to have a severe mental disorder                | 10.7 | 30       |
| Health Behavior  |      |          |
| Visited a health service in the last month             | 49.6 | 139      |
| Health-Risk  |      |          |
| High-Risk  | 29   | 63       |
| Moderate-Risk  | 51   | 110      |
| Low-Risk   | 20   | 42       |

*Note.* Meet physical activity guidelines is defined as 150 accumulated minutes of exercise per week and is the lowest threshold. Health-risk is evaluated by the SOTW program staff using self-reported medical history, age, and physical activity behaviors. Medical history includes heart conditions, diabetes, a fall in the past 12 months, ligament tears, stroke, organ transplants, heart surgery, breathing difficulties, cancer, psychological conditions and balance problems. Psychological distress scores ranging from 10-15 are categorized as likely to be well, from 16-21 as likely to have a mild mental disorder, 22-29 as likely to have a moderate mental disorder and 30-50 as likely to have a severe mental disorder (Australian Bureau of Statistics, 2019).

**Table 3**

*Correlates of Baseline Participant Demographics and Health Characteristics*

| Measures                      | 1 | 2    | 3     | 4    | 5     | 6     | 7      | 8      | 9     | 10    | 11     | 12     | 13     | 14    |
|-------------------------------|---|------|-------|------|-------|-------|--------|--------|-------|-------|--------|--------|--------|-------|
| 1. Disability Support         | - | -.08 | .00   | -.04 | -.19* | -.01  | -.14   | -.09   | -.12  | -.14  | .16    | -.38** | -.06   | -.20  |
| 2. Health-Risk                |   | -    | .51** | .12  | .21*  | -.10  | .01    | .18*   | .24*  | -.08  | .03    | .23*   | .24**  | -.18* |
| 3. Age                        |   |      | -     | .05  | .14   | -.17* | .20*   | -.23** | .13   | -.07  | .27*   | .09    | .09    | -.18* |
| 4. Language                   |   |      |       | -    | .00   | -.21* | .00    | -.02   | .10   | -.05  | -.02   | -.10   | .14    | -.30* |
| 5. T1 Health Behavior         |   |      |       |      | -     | -.08  | .34**  | -.07   | .56** | .03   | .10    | .00    | -.05   | -.08  |
| 6. T1 CMNs                    |   |      |       |      |       | -     | -.26** | .18**  | -.13  | .72** | -.24** | .20*   | .24**  | .44** |
| 7. T1 Health Self-Efficacy    |   |      |       |      |       |       | -      | -.45** | .15   | -.10  | .59**  | -.42** | -.20** | .03   |
| 8. T1 Psychological Distress  |   |      |       |      |       |       |        | -      | .04   | .09   | -.39** | .64**  | .38**  | .07   |
| 9. T2 Health Behavior         |   |      |       |      |       |       |        |        | -     | -.01  | .13    | .08    | -.03   | -.06  |
| 10. T2 CMNs                   |   |      |       |      |       |       |        |        |       | -     | -.25** | .17*   | -.15   | .29** |
| 11. T2 Health Self-Efficacy   |   |      |       |      |       |       |        |        |       |       | -      | -.36** | -.21*  | .14   |
| 12. T2 Psychological Distress |   |      |       |      |       |       |        |        |       |       |        | -      | .39**  | .04   |
| 13. T1 Self-reliance          |   |      |       |      |       |       |        |        |       |       |        |        | -      | .03   |
| 14. T2 Dominance              |   |      |       |      |       |       |        |        |       |       |        |        |        | -     |

*Note.* N varied from 92-232. \*statistically significant at the .05 level. \*\*statistically significant at the .001 level. Health-risk (high, moderate, low). Health-risk is evaluated by the SOTW program staff using medical history, age and physical activity behaviors; higher risk participants are deemed more sensitive to negative health outcomes. Language = primarily speaks a language other than English. CMNs = Conformity to Masculine Norms. The two CMNs subscales (self-reliance and dominance) that significantly changed from pre-program to post-program were included in the table.

**Table 4***Repeated Measures ANOVA Results Comparing Pre-Program to Post-Program*

| Measures               | <i>n</i> | Pre-Program ( <i>SD</i> ) | Post-Program ( <i>SD</i> ) | Sig.   | <i>F</i> | $\eta_p^2$ |
|------------------------|----------|---------------------------|----------------------------|--------|----------|------------|
| Health Self-Efficacy   | 131      | 135.97 (29.26)            | 155.07 (28.20)             | .000** | 71.32    | .35        |
| CMNs                   | 128      | 21.70 (5.28)              | 20.57 (5.45)               | .002** | 9.93     | .07        |
| Psychological Distress | 132      | 19.02 (8.15)              | 17.74 (7.20)               | .027*  | 13.98    | .04        |
| Health Behavior        | 135      | 5.58 (2.82)               | 6.58 (2.56)                | .000** | 20.35    | .13        |
| Physical Activity      | 135      | 3.15 (2.09)               | 3.53 (1.83)                | .011*  | 6.73     | .05        |
| Work                   | 129      | 2.57 (1.14)               | 2.41 (1.28)                | .120   | 2.45     | .02        |
| Risk                   | 129      | 2.46 (1.13)               | 2.38 (1.12)                | .378   | .78      | .00        |
| Emotion                | 130      | 3.32 (1.51)               | 3.12 (1.514)               | .064   | 3.50     | .03        |
| Violence               | 130      | 1.70 (1.63)               | 1.75 (1.49)                | .754   | 0.10     | .00        |
| Winning                | 129      | 2.13 (1.35)               | 2.08 (1.21)                | .540   | 0.38     | .00        |
| Self-Reliance          | 129      | 2.72 (1.15)               | 2.38 (1.15)                | .002** | 10.28    | .07        |
| Playboy                | 130      | 0.98 (1.23)               | 0.94 (1.26)                | .689   | 0.16     | .00        |
| Dominance              | 130      | 2.08 (1.19)               | 1.73 (1.12)                | .001** | 11.42    | .08        |
| Power Over Women       | 129      | .77 (.93)                 | .71 (.90)                  | .573   | 0.32     | .00        |
| Status                 | 129      | 2.98 (1.26)               | 3.02 (1.24)                | .712   | 0.14     | .00        |

*Note.* \*statistically significant at .05 level. \*\*statistically significant at .001 level. Effect size measured using partial eta squared ( $\eta_p^2$ ). Effect sizes were defined as small (.0099), medium (.0588) and large (.1379) by Cohen (1973). CMNs = Conformity to Masculine Norms. Work, Risk, Emotion, Violence, Winning, Self-Reliance, Playboy, Dominance, Power Over Women and Status are subfactors of Conformity to Masculine Norms. Physical activity was derived from the health behavior variable and measures the amount of exercise over the past week.

**Table 5**

*Repeated Measures ANOVA Results Comparing Post-Program to Follow-Up*

| Measures               | Post-Program (SD) | Follow-Up (SD) | <i>n</i> | Sig.   | <i>F</i> | $\eta_p^2$ |
|------------------------|-------------------|----------------|----------|--------|----------|------------|
| Health Self-Efficacy   | 154.85 (24.46)    | 149.24 (34.35) | 26       | .327   | -1.00    | .04        |
| CMNs                   | 20.73 (5.20)      | 18.25 (3.16)   | 20       | .107   | -2.86    | .13        |
| Psychological Distress | 18.73 (9.25)      | 17.91 (6.36)   | 26       | .505   | -0.46    | .02        |
| Health Behavior        | 5.88 (2.61)       | 8.27 (2.16)    | 26       | .000** | 24.62    | .50        |
| Physical Activity      | 3.04 (1.95)       | 3.50 (1.78)    | 26       | .274   | 1.25     | .05        |

*Note.* \*statistically significant at .05 level. \*\*statistically significant at .001 level. CMNs = Conformity to Masculine Norms. Effect size measured using partial eta squared ( $\eta_p^2$ ). Effect sizes were defined as small (.0099), medium (.0588) and large (.1379) by Cohen (1973). Physical activity was derived from the health behavior variable and measures the amount of exercise over the past week.

**Figure 1**

*Changes in Health Self-Efficacy, Conformity to Masculine Norms, Psychological Distress and Health Behaviour*

