 doi:10.20944/preprints202203.0128.v1

Article

Understanding Shedders: Which Sociodemographic, Health and Wellbeing Characteristics Best Inform Appropriate Health Promotion Action and A 'Shed for Life'?

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Abstract : Issue Addressed**:** Men's Sheds ('Sheds') have been identified as inherently health promoting and as potential settings to engage 'hard-to-reach' men in more structured health promotion initiatives. However, little is known about the sociodemographic or health and wellbeing characteristics of Shed members ('Shedders') on which such initiatives might be based. This study captures a baseline cross sectional analysis of Shedders (n=384) who participated in 'Sheds for Life', a health promotion initiative tailored to Sheds. **Methods:** Objective health measure, (body composition, blood pressure, blood lipids) captured via health screening as well as sociodemographic and health and wellbeing measures (physical activity, subjective wellbeing, mental health, social capital, cooking and diet) via questionnaires were assessed. **Results:** Participants were mostly over 65 years, retired with limited educational attainment. The majority were in the 'at-risk' categories for objective health measures, with most being referred to their GP following health screening. Older Shedders were also more likely to meet physical activity guidelines. Mental wellbeing was positively correlated with life satisfaction and increased social capital and these were also positively correlated with physical activity. **Conclusions:** Findings highlight the potential of Sheds in reaching a 'hard-to-reach' and 'at-risk' cohort of men. Despite a high prevalence of 'at-risk' objective health measures, participants report their health in positive terms. Future health promotion initiatives should capitalise on the inherent health promoting properties of Sheds. So what? Findings raise important implications for prioritising and designing health promotion initiatives in Shed settings.

Keywords: men's sheds; men's health; health promotion; evaluation; community based health promotion; physical activity

1. Introduction

Why Men's Sheds?

Our increased understanding of the complexities of men's health practices and masculinities has focused attention on the need for gender-specific approaches that inform more tailored and targeted interventions towards engaging men in their health [1, 2]. Community-based and gender-specific men's health and wellbeing programs have shown promise in engaging men by delivering targeted health promotion programs within safe and familiar environments [3]. Men's

 doi:10.20944/preprints202203.0128.v1

Sheds ('Sheds'), in particular, have been identified as settings that are well positioned to deliver tailored health promotion initiatives to a cohort of men who otherwise might not engage with health services [4, 5]. Sheds are autonomous grass roots spaces that offer men a safe and familiar environment, that foster a sense of social support, belonging and camaraderie, and that give a sense of purpose through developing new skills, shared projects, activities, goals and decision making [2]. Indeed, recent studies suggest a multitude of potential benefits and health enhancing outcomes from Shed membership such as; problem sharing, empowerment, sense of belonging, improvement in health seeking behaviours, reduced loneliness and depressive symptoms, sense of equality and inclusivity along with active retirement opportunities [6-12]. It is the inherent and organic inclusivity of Sheds that positions them as a suitable setting in which to actively promote and engage men with health [13]. Originating in Australia in the 1990s [7], Sheds have since proliferated across Ireland with up to 450 Sheds currently operational. This equates to more Sheds per head of capita than any country in the world [14]. A noteworthy feature in the phenomenal growth of Sheds has been their emergence and organic development from grassroots i.e. without any meaningful supports in terms of any policy framework or funding at State or Federal level [15]. Indeed, the informal and non-clinical environment within Sheds attracts a cohort of men that have more traditionally been considered both 'hard-to-reach' ('HTR') and 'at risk' (in terms of health status); i.e. those who are older, retired or not in current employment, from lower socioeconomic backgrounds, lower educational attainment, and lower levels of health literacy [4, 16]. With the emergence of Sheds, it also became apparent that there was a level of agency and appetite for health promotion in the Sheds [17]. As a result, Sheds quickly emerged in Western countries as an exemplar for the promotion of men's health and well-being at a health and social policy level, as well as a potential space for delivering structured health promotion to men in an accessible way [13, 18].

What might health promotion in Sheds look like? – A case for 'Sheds for Life'

Notwithstanding the appeal and potential advantages of delivering more structured health promotion in Sheds, there is a need to proceed with caution. Findings from two scoping studies highlight the potential tensions that may emerge in instances where health practitioners fail to recognise or respect the nuances that exist within Sheds. In particular, Shed members ('Shedders') regard retention of the informal and flexible environment and ethos of their Sheds, as well as involving Shedders in the decision-making process, as fundamental requirements to any health promotion endeavours in Sheds [4]. Beyond the design and structure of health promotion in Sheds, is the need to identify suitable implementation strategies that do not over-burden Shedders or detract from primary Shed aims [18]. Furthermore,

 doi:10.20944/preprints202203.0128.v1

while the informality of Sheds is their inherent strength, it can also pose significant barriers in terms of delivering structured health promotion in Sheds [19].

Sheds for Life (SFL) is a health and wellbeing initiative offered to Sheds in Ireland delivered via a partnership network of organisations who recognise the value of working with Sheds and can respond to specific health and wellbeing priorities (e.g. physical activity (PA), mental health, healthy eating). The initiative was conceived and by the overseeing body of Sheds in Ireland (The Irish Men's Sheds Association; IMSA), who engaged in a process of consultation and relationship building with partner organisations, academics and Shedders in developing the programme. Crucially, SFL utilises strengths-based and gender specific approaches in the safe and familiar environment of Sheds to deliver tailored and targeted health promotion directly in the Shed setting [19]. Guided by a participatory research and implementation science approach, Shedders are key decision makers in the design and delivery of SFL, which has enabled its systematic uptake across the network of Sheds in Ireland. A full protocol paper detailing the design of both the SFL initiative and evaluation process is available [19].

Critical to the success of SFL is a pragmatic and flexible delivery approach that can overcome barriers within the capricious Shed environment and that can account for continually shifting contextual variables across the wider system [19]. The SFL initiative is the first structured health promotion program delivered in Sheds settings and therefore addresses a significant gap in the literature on Men's Sheds and serves as an important guide for the implementation of health promotion in Sheds.

Men's Shed members – Who are they?

Alongside the utility of SFL in providing a template for structured health promotion in Sheds, there is also a need to address a deficit in the men's health literature in terms of the demographic of men who participate in health promotion in Sheds. Indeed, findings on Shed outcomes generally highlighted in previous scoping and narrative reviews, are predominantly based on small scale qualitative studies, with a distinct lack of information on the demographics of Shed participants, typically limited to age and gender [3, 13, 20, 21]. Moreover, researchers have identified a lack of quantitative and mixed methods approaches, as well as limited use of validated measures to measure health outcomes [21]. Understanding the characteristics of Shedders is important to tailor health promotion endeavours accordingly and to respond effectively to the needs of the target group. Small scale studies have highlighted the potential of Sheds to

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engage HTR men who may be reticent about accessing traditional health services. However, recent research highlights the need for further insights into the demographics of Shedders [16, 21]. This paper fills this gap by presenting a cross-sectional analysis of the baseline sociodemographic and health and wellbeing characteristics of Shedders who participated in a structured health promotion program (SFL). There will be a particular focus on establishing whether the program is effective in reaching beyond 'the worried well' - on the basis of Shedders meeting 'HTR' (sociodemographic variables) and/or 'at risk' (health and wellbeing variables) criteria - and ultimately whether there is merit in prioritising Sheds as a setting for targeted health promotion interventions.

2. Methods

This research emanated from the wider study evaluating the SFL initiative. The implementation and evaluation of SFL is guided by a community-based participatory research approach, which involves engagement from all key stakeholders across the individual, provider, organisation and wider systems level. A multi-disciplinary team of Shedders, academics, and allied provider organisations deliver and support elements of SFL, with the IMSA overseeing its delivery. This process is guided by established implementation frameworks [22-24]. In short, the evaluation of SFL consists of a hybrid effectiveness-implementation type 2 design with a dual focus on assessing effectiveness at both participant level and in terms of implementation, with a view to informing its scalability as per Curran et al. [25]. The full protocol for the SFL evaluation signposted above, outlines the design of SFL as well as the methods involved in assessing intervention and implementation effect [19]. This paper will detail the baseline data gathered via questionnaires prior to the commencement of SFL in Sheds.

Recruitment process and participants

Programs that incorporate a gendered approach in their design and delivery can maximise reach and recruitment of 'at risk' cohorts of men [26]. Moreover, in implementation science, reach or penetration of an intervention is also an important determinant of implementation effectiveness and justification for scale up [22]. For these reasons, the recruitment phase of SFL was designed to purposively reach men in the Shed setting using a variety of gender-specific strategies which are detailed elsewhere [19] but, which most notably, included trust building and an active recruitment phase. This recruitment strategy involved sending all Sheds in targeted counties in Ireland a promotional package and inviting them to register an 'expression of interest' in participating in SFL. This gave Shedders a sense of control, autonomy and agency over the process. Those Sheds that expressed an interest in participating were then visited by the first researcher and members of the IMSA in person to discuss the SFL process and to recruit individual Shedders to

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both the program and the evaluation. This purposive sampling approach was effective in reaching men in the familiar setting of the Shed, ensuring that all Shedders were appropriately briefed about SFL, creating a sense of acceptability about SFL, and building trust and rapport between Shedders and the SFL team. During these visits SFL was described to prospective participants as a program "for Shedders by Shedders". Prospective participants were encouraged to see themselves as pioneers, actively shaping the program through their participation and paving the way for future delivery and scale-up of the program. Reinforcing Shedders' sense of ownership of the program was designed to build safety and trust, and to reassure participants that SFL could co-exist and was not a threat to the routine activities and ethos of the Sheds, a critical factor in gaining acceptability at Shed level.

In total, n=31 Sheds out of a potential n=44 (70%) across the selected counties opted into SFL. Participants were recruited across Counties Waterford and Kildare from March to May 2019 and Limerick and Louth from September to December 2019. These counties were chosen to encourage a diverse representation of Sheds and Shedders while accounting for program delivery capacity constraints. Key considerations included the capacity and resource constraints of provider organisations to deliver SFL; the variability and nuances within different Sheds that shaped Shedders' readiness to receive SFL; along with the capacity constraints of a small SFL co-ordinating team, which limited geographical spread of the program for pragmatic reason [19]. Sheds were given the option to partner with neighbouring Sheds if they lacked facilities or had lower numbers. As a result, SFL was delivered in n=22 Shed settings. Fourteen Shed settings were in urban areas and 8 were in rural areas across counties; Kildare (in Ireland's mid-east region with a population of ca. 222, 504), Waterford (in Ireland's south-east region with a population of ca. 116,176), Limerick (in Ireland's mid-west region with a population of ca. 194,899) and Louth (in Ireland's mid-east region with a population of 128, 884) [27, 28][1]. Data were collected at recruitment phase to identify the number of Shedders who regularly attended the participating Sheds to establish the reach of SFL. It was estimated that n=565 were active members of the participating Sheds at the time of recruitment, with the majority (n=421; 75%) opting to participate in SFL and the supporting evaluation. All adult males in the Sheds setting were eligible to participate in the study providing they had good proficiency in the English language and could give informed consent. During recruitment phases, all participants had the details of the research clearly explained to them through verbal and written instruction

[1] In Ireland, urban areas are classified as towns/settlements with populations greater than 50,000 where 20 per cent or more of the usually resident workforce population's workplace address is in 'Cities'. Rural areas are defined as having an area type with a population less than 1,500

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and informed written consent was obtained by a member of the research team prior to participation in the research. The study received ethical approval from the Waterford Institute of Technology research ethics committee (REF: WIT2018REC0010). This study has also been registered with the 'International Standard Randomised Controlled Trial Number' registry (ISCRTN79921361).

3. Data collection and analysis

All participants were offered a free comprehensive health check prior to commencement of the SFL ten-week program. As well as being an important aspect of baseline data collection, this served as an additional engagement strategy or 'hook' to encourage uptake of the SFL initiative. The health check was delivered directly in the Shed setting during routine Shed hours by an Irish Heart Foundation nurse (a long-standing partner of the IMSA whose staff are vastly experienced engaging populations of marginalised men). The health check encompassed a range of objective measures, including body mass index (BMI), waist circumference, lipid profiles, blood glucose and blood pressure. Results of the health check were recorded on a standardised health check card and given to the participants for their records. In keeping with GDPR requirements, the research team obtained written consent from participants after their health check to take a copy of their health check results. At this time, questionnaires that captured participants' sociodemographic and health and wellbeing characteristics were also administered by a research team member trained in data collection procedures to ensure standardised measurement and questionnaire administration. Questionnaires were administered one-to-one in the Sheds setting to account for potential literacy issues, prevent respondent burn-out, limit missing data and build rapport and trust between the researchers and Shedders.

The questionnaire was designed in consultation with stakeholders involved in the design and delivery of SFL with a view to optimising acceptability for SFL participants and also SFL providers who were interested in evaluating their individual components of SFL. Participant demographics were recorded at baseline and included date of birth, living arrangements, educational attainment, employment status, relationship status and ethnicity. Participants were also asked how long they had been a Shed member and how often they attended the Shed. Core health and wellbeing outcomes included subjective wellbeing, help-seeking, PA, mental wellbeing, diet and cooking confidence constructs, social capital, self-efficacy and frequency of seeking health information (19). Risk thresholds were identified for each variable as follows: Hypertension was defined as systolic BP level of ≥140 mmHg and/or diastolic BP level ≥ 90 mmHg ("prehypertensive" subjects i.e. 120–139 mmHg systolic BP and 80–89 mmHg diastolic BP [29] were also noted, as they are at more risk of developing CVD). Body mass index parameters were classified as; <18.5 (underweight), 18.5 to 24.9

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(normal weight), 25 to 29.9 (overweight) and >30 (obese) [30]. With regard to abdominal obesity, a waist measurement of <37 inches equated to 'low' morbidity, 37-40 inches was considered 'high risk' and >40 as 'very high' risk (Paley & Johnson, 2018). As the majority (76.9%) of participants were not fasting at the time of the health check, non-fasting ranges (4 to 7 mmol/l) were applied for blood glucose measurements, as per the Irish Heart Foundation's parameters. Total cholesterol levels ≥5 mmol/l and triglycerides ≥1.7 mmol/l were also applied as per the Irish Heart Foundation's parameters. In cases where health check measures gave rise for concern, Shedders were advised by the nurse to visit their general practitioner (GP) for follow-up, therefore numbers recommended to visit their GP are also calculated. Data on history of diabetes, stroke and heart disease were also recorded. Lifestyle risk factors included not meeting the PA guidelines, smoking, not consuming the recommended five daily portions of fruit and vegetables, and consuming more than the recommended upper threshold of 17 standard alcoholic drinks per week. Other risk indices included having a low propensity to seek health information; low self-rated health (SRH - ratings between average and poor); and low life satisfaction (life worth and trust score of ≤6 [31, 32]; low mental wellbeing (Short-Warwick Edinburgh Mental Wellbeing scores (SWEBMWS) indicating average mental health to probable depression) [33]; lower ability to talk about or manage mental health; and a categorisation of 'lonely' (score of ≥ 6) on the 3-item UCLA loneliness scale [34]. In terms of demographical information, there was a particular focus on 'HTR' [4, 16] Shedders, i.e. those who were older, single, lived alone, and had lower education. A detailed protocol on instruments used is available [19]; see also Table 1).

Data were analysed using Statistical Packages for the Social Sciences (SPSS v24). Descriptive statistics are provided for all baseline characteristics. Independent-samples t-tests, Anova tests, Mann-Whitney U and Kruskal-Wallis H tests were also performed to determine differences between groups at baseline on continuous or ordinal dependent variables. Similarly, bivariate analysis was also performed to determine association (strength and direction) between variables where relevant. Finally, OLS regression analysis was conducted to determine whether various variables had a significant impact on three composite subjective measures – mental health, life satisfaction and loneliness. The selection of these independent variables was guided by relevant theory and on specific patterns that emerged from the data.

4. Results

Whilst all participants in SFL (n=421) consented to participate in the evaluation, some were not available at the point of baseline data collection, which resulted in n=384 completing the questionnaire at baseline. Table 1 highlights Shedders' sociodemographic characteristics and core health and wellbeing measures.

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Table 1: Shedder demographics and health and wellbeing measures

Variable (measurement used)	N= (%)
Ethnicity (Multiple Choice)	
White Irish	380 (99.2%)
Other	3 (0.8%)
Education (Multiple Choice)	
Primary Only	92 (24.9%)
Some/completed secondary	199(52.1%)
Some/completed grad level	78 (20.4%)
Some/completed postgrad	10 (2.6%)
Marital Status (Multiple Choice)	
Married/cohabiting/in a relationship	284 (74.2%)
Widowed	36 (9.4%)
Separated/Divorced/Single	63 (16.4%)
Living Situation (Multiple Choice)	
Lives alone	68 (17.8%)
Lives with others	314(82.2%)
Cooking Frequency	
Often	162(42.4%)
Sometimes to rarely	159(41.6%)
Never	61(16.0%)
Employment (Multiple Choice)	
Currently employed	44 (11.5%)
Retired/not currently employed	339(88.6%)
Close Support (Likert scale assessing feelings of close support [35]**)**	
Agree to Strongly Agree	374 (88.9%)
Disagree to Strongly Disagree	6 (11.1%)
Seeking health information (Likert scale – are you someone who likes to seek information about your health? [37])	
Often	156(40.9%)

Variable (measurement used)	N= (%)	Mean (range) ± SD
Age (Date of Birth)	382	69.1 (27 to 90) ± 9.14
Length of Shed membership (years)	379	2.75 (0 to 9) ± 2.06
Blood Pressure	384	140/81 ± 19.44/11.05
BMI	378	29.91 (18 to 53.57) ± 5.41
Waist Circumference (inches)	383	41.60 (26 to 67) ± 5.42
Total Cholesterol (mmol/l)	382	4.18 (2.50 to 7.55) ± 1.03
Triglycerides	382	1.67 (0.15 to 7.14) ± 1.03
Cigarette Smoking (Multiple Choice)		
Never	189(49.7%)	
Former	159(41.8%)	
Current	32 (8.4%)	
Drink Alcohol		
Yes	261(68.3%)	
No	121(31.7%)	
Alcoholic Drinks per Week		8.10 (0 to 68) ± 10.07
Referred to GP****	223(79.6%)	
Daily Fruit & Veg Consumption (Multiple choice)	382	3.36 (0 to 7) ± 1.76
Cooking habits		
Don't cook at all	125(32.8%)	
Microwave meals/Readymade ingredients	52 (13.6%)	
Prepare from scratch	204(53.5%)	
Days physically active per week (self-report single item 8-point measure)		3.07 ± 2.57
Meeting PA recommendations (Calculated from the 8-point single-item PA measure)		
Yes	121(31.8%)	
No	260(68.2%)	
Self-rated health (Single question Likert scale [36])	382	
Very good to Excellent	138(36.1%)	
Good	152(39.8%)	
Average to Poor	92 (24.1%)	
Life satisfaction (Mean values on an 11-point scale [37])	382	7.98 (1 to 10) ± 1.71
Life worth (Mean values on an 11-point scale [37])	382	8.20 (2 to 10) ± 1.61

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Sometimes	158(41.5%)	**Mental Wellbeing** (Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) [38]	376	26.89 (13.33 to 35.0) ± 4.77
Rarely to Never	67(17.65%)	**Understanding how to manage mental health** (Likert scale assessing understanding of how to manage mental health)		
Stress (Likert scale assessed at health check)		*Certain to very certain*	176(66.8%)	
Not at all to only a little	235(55.8%)	*Somewhat certain to very uncertain*	90 (33.2%)	
To some extent	74 (17.6%)			
Often to very often	44 (10.5%			
Belonging (Likert scale assessing feelings of belonging [35]		**Trust rating** (Mean values on an 11-point scale [37]	380	6.83 (0 to 10) ± 1.98
Agree to Strongly Agree	374(88.9%)	**Loneliness Scores** (UCLA 3-item scale [F])		
Disagree to Strongly Disagree	6 (11.1%)	***Before joining Men's Sheds*	382	4.77 (3 to 9) ± 2.17
Comfort about mental health (Likert scale assessing comfort having a conversation about mental health)		*At baseline*	381	3.31 (3 to 9) ± 0.89 (p<0.001) *
Certain to very certain	195 (72%)	****Those 'lonely' before joining Shed*	129 (33.8%)	
Somewhat certain to very uncertain	71 (28%)	*Those 'lonely' at baseline*	28 (6.7%)	

* difference between loneliness scores before joining a men's shed and at baseline were statistically significant p<0.001
** Shedders were asked to rate their loneliness prior to joining a Shed & again at baseline
*** score of ≤5 on UCLA scale ='not lonely', score of ≥ 6 = 'lonely' (Resnick & Jenkins, 2000)
**** Number of Shedders referred to their GP based on health check results

Risk Profile of Participants

A breakdown of the analysis in Table 1 revealed that a considerable proportion of the respondents can be considered HTR and at-risk (See Figure 1). The results highlight that the majority of this population of Shedders were over 65 years (77.2%, mean 69.1 years ± 9.14, 27-90). Almost a quarter (24.9%) of participants had no more than primary education with the majority (77%) having no more than some secondary education. Most participants were not currently in employment (88.6%). While the majority of participants were mostly married (78.2%) over a quarter (25.8%) were separated, divorced or widowed with some 17.8% living alone.

Health Status

Over half of the population (52.9%) reported having a family history of heart disease, with 21.3% a history of stroke and 28% a history of diabetes. Most Shedders (84.1%) in the study were either hypertensive (50.8%) or pre-hypertensive (33.3%). The vast majority of participants were either overweight (39.7%) or obese (47.1%). Most Shedders were in an at-risk category for abdominal obesity with 15.4% (n=59) high risk and 62.9% (n=241) at very high risk. Just over one in five (22.3%) participants had a total cholesterol measure of ≥5.0 mmol/L, with 27.8% showing an elevated LDL-C ≥3.0

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mmol/L and over half (55.1%) below the recommended level for HDL-C of ≤1.0 mmol/L. Over a third (37.1%) of Shedders exceeded the recommended upper limit for triglycerides (≥1.7 mmol/L). Some 20.2% had elevated blood glucose levels of >7mmol/l. The vast majority of Shedders (79.6%) were referred to their GP based on the results of their health-check. Over half of Shedders (59.2%) reported a limited propensity to seek information about their health (See Table 1 & Figure 1).

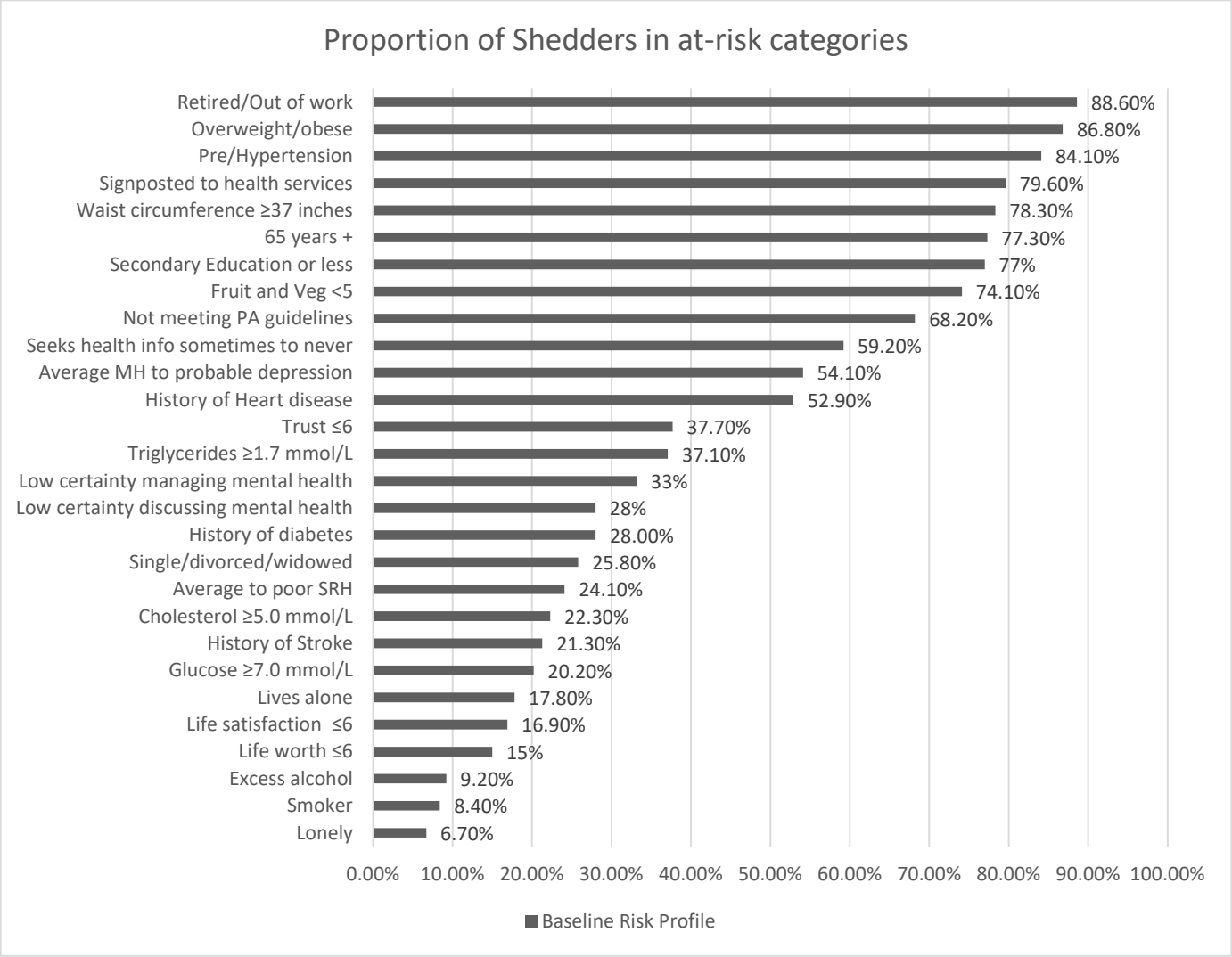

Figure 1: Representation of risk profile of Shedders based on sociodemographic, health and wellbeing characteristics

Lifestyle Behaviours

The mean number of days Shedders spent physically active in moderate to vigorous activity for 30 minutes or more was 3.07 (n=381, ± 2.57). More than two-thirds of participants (68.2%) did not meet the recommended PA levels of 30 minutes or more for 5 days per week (see Table 1). Mean PA self-efficacy scores were 53.17 ± 20.99 out of a possible total score of 90. An independent samples t-test revealed that Shedders who met the PA guidelines (n=121) had significantly

 doi:10.20944/preprints202203.0128.v1

higher PA self-efficacy scores (63.45 ± 1.51) compared to those who did not (n=256, 48.28 ± 1.51) t=-6.945 p=0.000. There were also statistically significant negative correlations for Shedders between days physically active; and BMI (r (375) =-.207, p=.000); and waist circumference (r (380) =-.257 p=.000).

Compared to the recommended minimum of 5 or more daily servings of fruit and vegetables, Shedders consumed an average of 3.36 servings, similar to the general population of males over 54 years in Ireland with an average of 3.2 servings [39]. The majority of Shedders (n=283, 74.1%) consumed less than the recommend 5 servings of fruit and vegetables daily. Over a third (38.8%) of Shedders reported cooking rarely or never (see Table 1). Appendix 1 describes Shedders' confidence ratings for cooking preparation and practices adapted on a 12-item scale [40]. The vast majority of Shedders (91.5%) were not current smokers. Most Shedders (68.3%) reported that they drink alcohol, of which 12.7% consumed more than the recommended upper limit of 17 standard drinks per week.

Subjective Wellbeing

While three-quarters of Shedders (75.9%) self-reported their health in positive terms from excellent to good, almost a quarter (24.1%) reported their health in the range of average to poor. Some 16.9% scored their life satisfaction, and 15% scored their life worth at ≤6, meaning the majority of Shedders reported high life satisfaction (83.1%) and life worth (85%) ratings at baseline. The mean life satisfaction score for Shedders (7.98) was similar to the national male average of 8.10 [41]. A minority of Shedders (10.5%) reported feeling stressed 'often' (6.9%) or 'very often' (3.6%). Notably, while the majority of Shedders fell into an at-risk category in terms of their objective health parameters, this was not reflected in their subjective state of health or SRH. Moreover, there is a positive correlation between SRH and age (r (382) =0.215 p=0.000). Table 2 below considers a range of measures by age categories which further highlights that older members have higher SRH values (this scale shows higher numbers for those with lower perceived levels of health). National data [31] shows that those rating their health as 'very good' declines with age – this is contrary to the Shed cohort in this study. Table 2 also highlights that life satisfaction and mental health are also reported more positively for older Shedders with life satisfaction being positively correlated with SRH (r (382) = 0.350, p=0.000). This is reinforced by trends in the objective measures, such as BMI declining with age (r(382)=-0.113, p=0.03) as well as an increased proportion of those meeting the PA guidelines in older age cohorts. Moreover, BMI was negatively correlated with days physically active (r (375) =0.207, p=0.000) as was waist circumference (r (380) =0.257, p=0.000). Similarly to SRH, national data for the percentage meeting PA guidelines shows a decline from 53% for those aged 45-54 through to 20% for those aged 75+ - while the trend is largely in the opposite direction for Shedders [31].

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Table 2: Comparison of subjective and objective health measures by age

Age Category	Less than 35	35-44	45-54	55-64	65-74	75+
N	*4*	*5*	*16*	*61*	*200*	*95*
SRH *[1=Excellent, 5=Poor]*	3.5	3.6	3.3	3.0	2.8	2.6
% who rated health to be very good (Shed)	25%	0%	31%		38%	
% who rated health to be very good (National Average*)	56%	40%	35%		29%	
% Meeting PA guidelines (Shed)	25%	20%	44%	28%	27%	44%
% Meeting PA Guidelines (National Average **)	N/A	N/A	53%	40%	41%	20%
BMI	29.8	31.5	30.1	31.2	30.0	28.9
Life Satisfaction	7	7.6	6.8	7.5	8.2	8.0
Mental Wellbeing	26.9	23.6	24.9	25.9	27.2	27.2
Loneliness	3.8	5.0	6.2	5.2	4.5	4.8

*Department of Health (2019) ** Department of Health (2019)

Mean mental wellbeing (SWEMWBS) scored at baseline was 26.8992 ± 4.769 out of a possible 35. The number of Shedders in the range of average to probable depression was 54.1% (n=185) with 45.9% (n=155) in a range of high mental wellbeing[2]. Shedders mental health scores were positively correlated with an increased certainty in understanding about mental health (f=17.753, p=0.000) and comfort having a conversation about mental health (f=10.866, p=0.000). Those with higher life satisfaction also reported higher mental wellbeing scores r (374) =0.511 p=0.000. In terms of belonging and close support, the majority of Shedders felt they belonged to their Shed (96.9%) and that there would be someone there for them if they needed help (88.9%). Some 37.7% scored their levels of trust at ≤6. Trust was positively correlated with SRH (r (382) =0.172, p=0.000), close support (r (382) =0.168, p=0.000) and belonging (r (382) =0.172, p=0.000). A paired samples t-test determined there was a significant difference in loneliness scores prior to joining a Shed (n=382, 4.77 ± 2.173) and at baseline (n=381, 3.31 ± 0.890, t=14.241, p=0.000). There was a reduction of 27.1% in those who were categorised as lonely after joining a Shed which was statistically significant (Z=-9.764b p=0.000, see Table 1). Shedders with higher loneliness scores reported increased feelings of stress (r (342) =0.202 p=0.00), with stress being negatively correlated with age (r (344) =-0.125, p=0.021). To build on the earlier univariate and bivariate analysis, regression analysis was then conducted as this is a multivariate technique

[2] The cut points for SWEMWBS are 17 or less for probable depression, 18-20 for possible depression, 21-27 for average mental wellbeing and 28-35 high mental wellbeing (Warwick medical school)

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which does not treat the variables symmetrically and allows one to generate predictions of one variable controlling for other variables. This analysis highlights that when controlling for other variables, Shedders with higher mental wellbeing and life satisfaction have higher levels of trust, while Shedders with higher mental wellbeing are also more likely to feel like they belong (see Table 3). In addition, mental wellbeing and life satisfaction were higher for Shedders meeting the PA guidelines whereas feelings of loneliness decreased.

Table 3 Regression Analysis on Subjective Variables

	Dependent Variable		
	Mental Wellbeing	**Life Satisfaction**	**Loneliness**
Independent Variables			
Age	0.059	0.094	0.036
Education	0.042	-0.056	0.042
Marital Status	-0.127 *	-0.09	0.111 *
Urban or Rural Shed	0.055	0.092	-0.036
Trust	0.185 **	0.148 **	-0.18 **
Belonging	-0.114 *	-0.036	-0.004
Membership of Shed (years)	-0.078	0.016	-0.037
Meeting PA Guidelines	0.143 **	0.164 **	-0.113 *
N	366	372	370
R^2	0.343	0.31	0.06

* Significant at 0.05 level ** Significant at 0.01 level

Education and Marital Status

While education did not have a significant impact on subjective wellbeing, Shedders with lower educational attainment were less likely to report a propensity to seek out information about their health ($\chi 2$ (2) = 13.900, p = 0.003). Education levels were also positively correlated with diet and cooking habits. Fruit and vegetable consumption increased as education levels increased (r (382) =0.142, p=0.000). This is similar to the TILDA study which found that fruit and vegetable consumption increased as education increased [39]. Education was positively correlated with confidence in cooking and food preparation (r (382) =0.276, p=0.000) and Kruskal-Wallis H tests revealed that Shedders who had higher education levels reported increased confidence in cooking and preparation practices across all twelve confidence constructs (see Appendix 1)

Living situation and marital status were also correlated with wellbeing. Shedders who lived alone or were not currently married reported lower propensity to seek out information about their health (n=381, $\chi 2(2)$ =11.187, p=0.025). Compared

 doi:10.20944/preprints202203.0128.v1

to those who lived with others, Shedders who lived alone had lower SRH (z=-2.477 p=0.01) and life satisfaction (n=68 7.43 ± 1.87 vs n=311, 8.10 ± 1.66, t=-2.975 p=0.003). Regression analysis highlighted that, when controlling for other variables, there was a significant correlation between marital status, loneliness and mental wellbeing, with Shedders who were not currently married reporting poorer mental health and increased loneliness. Shedders who lived with their family/partner (n=311) reported cooking more often compared to those who lived alone (n=68, x2 (2) =20.11, p=0.00).

5. Discussion

The aim of this paper was to describe the sociodemographic and health and wellbeing characteristics of a cohort of Shedders (n=384) who enrolled in a health promotion initiative (SFL) in the Shed setting. Previous studies have identified a distinct lack of such data [3, 13, 20, 21], making it difficult to adjudicate on the merits of the Shed as a setting for targeted health promotion interventions or on what the composition of such initiatives should be. Findings will have an important bearing on the scale-up of SFL as well as highlighting areas where diversification is needed to respond effectively to the needs of the target group. More broadly, findings raise important implications for prioritising and designing health promotion initiatives in Shed settings.

The success of the SFL recruitment strategy can be gauged by the fact that the majority of Shedders (75%) in the target locations opted in to participate. No significant differences were found between urban and rural Shedders in terms of demographics, health characteristics or subjective wellbeing. This suggests that Sheds attract similar groups of men across localities who stand to benefit from Shed participation equally and that effective health promotion in Sheds can be translated across geographical locations. Considering the limited geographical spread of Sheds in this study, this finding warrants further investigation. Neither were there any significant correlations found based on length of Shed membership, suggesting that any benefits that may accrue from joining a Shed are more immediate. The demographics of this cohort of Shedders are consistent with a previous study [16], which highlights the potential of Sheds in reaching what has traditionally been seen as a 'HTR' cohort of older, retired, lesser educated men. Shedders propensity to seek health information was inversely associated with education level – a notable finding in light of the strong association between tertiary education and health (42) and given that the majority of Shedders (77%) had no more than secondary education. This suggests that health promotion strategies in Sheds should seek to normalise engagement with health through gender-specific approaches that consider health literacy and are age appropriate. Marital status and living situation also emerged as protective factors for Shedders in terms of their health engagement and wellbeing. Shedders who were not in a relationship and/or living alone were less likely to seek information about their health, less likely to cook, more likely to be lonely and have poorer subjective wellbeing and mental health. These findings highlight the importance of engaging more isolated men

with health promotion in Sheds where social support may foster improvements in subjective wellbeing [5-7, 9, 11, 12, 17, 42]. The overwhelming majority of participants identified as white and Irish. This is at least partly reflective of the older demographic population in Ireland which does not yet have a large representation of diverse ethnicities [43]. Nevertheless, greater diversity in terms of Shed membership should be encouraged to foster richer learning experiences and to prevent Shedders from older age cohorts or from culturally diverse backgrounds feeling stigmatised or labelled [9].

Results from objective health and lifestyles measures suggest that the majority of Shedders fall into at-risk categories for chronic disease, including hypertension, high risk BMI and waist circumference, family history of heart disease, diabetes and stroke, inactivity, and inadequate intake of fruit and vegetables. Moreover, an overwhelming majority of Shedders were referred to their GP based on concern(s) raised from the health check results. Similar at-risk health characteristics were reported from a community-based physical activity program in Ireland that also adopted a gender sensitive approach to engage a HTR cohort of men [44]. These findings suggest that community settings – including Sheds – offer much potential to reach beyond the 'worried well', by using targeted approaches to engage those most at-risk in health promotion. A minority of Shedders (8.7%) identified themselves as current smokers which is a positive finding and noteworthy in the context of designing health initiatives in Sheds where significant investment in smoking cessation may not be warranted. Results suggest that 68.3% of Shedders consumed alcohol which is less than the national figures for adult males of 79% [31]. While overall alcohol consumption and frequency of binge drinking is higher in men than in women [45], less than 10% of Shedders reported drinking more than the recommended 17 standard drinks per week. Self-report bias may need to be considered here where Shedders may have opted for a more favourable response to provide a good impression, a finding consistent with other studies that seek to engage at-risk men [46]. Thus, the value of alcohol behaviour change initiatives in Sheds should not be discounted.

Despite the high prevalence of at-risk objective health measures, the majority of Shedders reported their health in positive terms. Moreover, subjective wellbeing was in fact positively correlated with age. Previous studies, involving participants both from Sheds and the general population, have posited that older people re-calibrate their self-rating of health relative to what they think is reasonable for their age [16, 47]. Curiously, findings from this study highlighted that the majority of health metrics (objective and subjective) were better in older than in younger Shedders. Older Shedders were also more likely to have higher SRH and over twice as likely to meet the PA guidelines in comparison to the general population of males the same age [31]. Conversely, younger Shedders had poorer SRH compared to age-matched general population data, indicating that younger Shedders may choose to attend Sheds because of

 doi:10.20944/preprints202203.0128.v1

underlying physical or mental health issues. Findings also raise the possibility that Sheds may be a facilitating factor in encouraging older men to be more active. More active Shedders enjoyed greater mental wellbeing, life satisfaction and self-efficacy, and experienced less loneliness. Physical activity interventions that utilise the social support within Sheds may be effective not only in building PA self-efficacy, but also in enhancing Shedders' subjective wellbeing. Healthy eating initiatives may also find value in utilising the social support in Sheds and should focus on knowledge and confidence building in terms of healthy eating and cooking skills.

It is worth considering what makes a Shedder consider himself 'subjectively' healthy and this consideration may have important implications for tailoring health promotion in Sheds. For instance, findings highlight a number of correlations between sense of connection (loneliness, belonging, trust) and Shedders' self-reported wellbeing and lifestyle measures (physical activity, diet). This suggests that Shedders may place more emphasis on subjective measures such as satisfaction with life, purpose and belonging when evaluating their health, with life satisfaction positively correlated with mental health and SRH. 'Happier' and 'healthier' Shedders also scored higher on measures of trust and social capital. Thus, behaviour change techniques that revolve around building self-efficacy and social support may act as an important catalyst in encouraging positive behaviour changes in areas such as physical activity, mental health, help seeking and diet, particularly for younger Shedders. Findings also highlight the utility of Sheds in combatting loneliness and this may also account for the high baseline of SRH. Similarly with regards to mental wellbeing, results suggest that men who have a good understanding of mental health and are comfortable having a conversation about mental health enjoy increased mental wellbeing. Therefore, mental wellbeing initiatives that focus on normalising conversations about mental wellbeing and enhancing understanding could have a valuable role in protecting the mental health of Shedders.

In terms of limitations to this study, it is important to acknowledge the self-report data which is subjective in nature and may be open to reporting bias. This may also be an indicator as to why older men perceive themselves as healthier, yet constructs of wellbeing and perceived health status are subjective in their own right and arguably one's perceptions and attitudes to wellbeing are predicative of good health. For pragmatic reasons, the sample was drawn from selected counties in Ireland therefore findings cannot purport to be representative of all Irish Shedders. The relationships observed are also derived from cross sectional analysis and longitudinal analysis from the SFL initiative which has recently concluded may provide more insight into the nature of these relationships.

6. Conclusion

While Sheds have been previously identified as suitable settings to engage HTR men with health promotion, this is the first study which captures the sociodemographic and health and wellbeing characteristics of a significant cohort of Shedders and which highlights a range of correlations that can assist in the design of tailored health promotion in Sheds. Moreover, it is important to identify whether health promotion initiatives such as SFL are successful in reaching beyond the 'worried well' as this has important indications for the effectiveness of the implementation of such initiatives as well as their suitability for scale-up. The results highlight that Sheds are effective in attracting men that are indeed 'HTR' in terms of their sociodemographic characteristics and 'at risk' in terms of their objective health measures and referrals to their GP. Findings provide a resounding endorsement of the effectiveness of the SFL recruitment strategies in terms of reach and engagement of this cohort. While Sheds are effective in reaching a cohort of HTR men, there are opportunities for Sheds to expand their reach in attracting more marginalised subpopulations of men (in terms of ethnicity, disability and those at risk of isolation) who may stand to gain from the health enhancing benefits of Sheds, including health promotion initiatives in Sheds. The fact that older cohorts of Shedders rate their health more positively and appear to be objectively healthier is a noteworthy finding. While this may be partly explained by a positive Shed effect, further research to explore the underlying factors to this anomaly is required. In particular it would be worth exploring whether the factors that prompt men to attend Sheds differs according to age and whether Sheds facilitate older Shedders to be more active.

The weight that participants in this study placed on belonging and purpose as contributing factors to their overall wellbeing, has important implications for the design and methodological approach of health promotion in Sheds. The findings make it clear that health promotion in Sheds should seek to normalise engagement with health through gender-specific approaches that consider health literacy and are age appropriate, particularly focusing on men with lower education, not married and/or living alone. Overall this study provides important insights into the health and wellbeing of Shedders and also what motivates Shedders to feel subjectively well. The findings also highlight important priority areas for health promotion in Sheds where a particular focus on physical activity, mental wellbeing and diet may be important for enhancing Shedder wellbeing. Equally, initiatives which enhance sense of purpose and belonging may be particularly important for sustaining the engagement of Shedders as well as being health enhancing in their own right.

Competing Interests: The authors declare that they have no competing interests.
Funding: The first author was supported through an Irish Research Council Doctoral Award (Project ID EBPPG/2018/256). The funders were not involved in the design of the study, manuscript writing or collection of data and the funders will not be involved in data analysis or in manuscript writing in the future.

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Appendices

Appendix 1: Descriptives for individual cooking and food preparation confidence constructs correlated with education levels

Confidence constructs cooking and food preparation (N%) ***				Correlated with Education
Cooking Using Raw Ingredients				
Not at all confident (50) 13.1%	Somewhat confident (91) 21.2%	Confident (88) 23.0%	Very confident (163) 42.7%	0.163**
Following a simple recipe				
Not at all confident (50) 13.1%	Somewhat confident (85) 22.3%	Confident (109) 28.5%	Very confident (182) 36.1%	0.236**
Planning meals before shopping				
Not at all confident (95) 24.9%	Somewhat confident (56)22.5%	Confident (96)52.1%	Very confident (105) 27.5%	0.208**
Shopping for food on a budget				
Not at all confident (77) 20.3%	Somewhat confident (82) 21.6%	Confident (107) 28.2%	Very confident (114) 30.0%	0.227**
Shopping for healthier food to eat				
Not at all confident	Somewhat confident	Confident	Very confident	0.259**

(65) 17.0%	(94) 24.6%	(110) 28.8%	(113) 29.6%	
		Cooking new foods		
Not at all confident	Somewhat confident	Confident	Very confident	0.281**
(119) 31.2%	(85) 22.3%	(77) 20.2%	(101) 26.4%	
		Cooking healthier foods		
Not at all confident	Somewhat confident	Confident	Very confident	0.243**
(64) 16.8%	(93) 24.4%	(113) 29.7%	(111) 29.1%	
		Storing food safely		
Not at all confident	Somewhat confident	Confident	Very confident	0.162**
(35)9.2%	(63) 16.5%	(125) 32.7%	(159) 41.6%	
		Using leftovers to cook other meals		
Not at all confident	Somewhat confident	Confident	Very confident	0.169**
(86) 22.6%	(88) 23.1%	(99) 26.0%	(108) 28.3%	
		Cooking whole raw chicken from scratch		
Not at all confident	Somewhat confident	Confident	Very confident	0.179**
(86) 22.5%	(63) 16.5%	(83) 21.7%	(150) 39.3%	
		Reading food labels		
Not at all confident	Somewhat confident	Confident	Very confident	0.204**
(90) 23.6%	(82) 21.5%	(91) 23.8%	(119) 31.2%	
		Food Hygiene		
Not at all confident	Somewhat confident	Confident	Very confident	0.199**
(27) 7.1%	(56) 14.7%	(126) 33%	(173) 45.3%	

* Difference in confidence based on education levels: education is positively correlated to confidence

** Difference is significant at p<0.01

***12-item confidence constructs for preparation and cooking practices adapted from Garcia et al., (2017)