J of Nuclear Medicine Technology, first published online April 20, 2020 as doi:10.2967/jnmt.119.241505

Title: Health and Lifestyle Factors of Australian Medical Radiation Workers: A pilot study using Nuclear Medicine Technologists

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Disclaimer: No conflict of interest relevant to this article. We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere. It has been approved for publication by all authors.

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Word count: 5253

Financial statement: Nil financial support received, no conflict of interest to report.

Short running title: Health and Lifestyle Factors of NMTs

Health and Lifestyle Factors of Australian Medical Radiation Workers: A pilot study using Nuclear Medicine Technologists

ABSTRACT

Rationale: Health effects of chronic low dose radiation exposure are a subject of worldwide debate. It is difficult to assess as all low dose exposure mechanisms must be accounted for including background exposure, personal medical examinations and environmental exposure such as aviation, as well as lifestyle choices contributing to disease. Current literature recommends the investigation into lifestyle factors to fill in these gaps. The aim of the study was to pilot test a survey developed to assess the health and lifestyle factors of Australian medical radiation workers. **Methods**: A cohort of nuclear medicine technologists (NMTs) were selected to test the survey. The survey consisting of 53 questions contained questions relating to demographics, employment, lifestyle and health. Data from the 2017-2018 Australian National Health Survey was used to compare the lifestyle choices and health of participants with the Australian general population. **Results:** A total of 101 participant's pilot tested the survey. Overall Australian nuclear medicine technologists make better lifestyle choices (more exercise, vegetable intake, lower rates of smoking and alcohol consumption) resulting in lower rates of obesity than the Australian general population. NMTs had higher reported health status than the Australian population, with lower levels of psychological distress. Given the low age of NMT participating in the study, the cancer incident rate may be higher than that reported in the Australian general population however a larger sample size is required to provide more definitive results. **Conclusion:** This pilot study demonstrated feasibility in the conduction of a widespread survey to assess the health and lifestyle factors of the Australian medical radiation worker cohort. Comparison of survey results with the Australian population have highlighted the potential to increase the number of lifestyle questions.

KEYWORDS: low dose radiation, lifestyle factors, health, nuclear medicine technologists, medical radiation scientists

INTRODUCTION

Occupational dose limits for medical radiation personnel are set to ensure that stochastic effects of radiation exposure are minimalised and deterministic effects are not manifested (*1*). The current recommended limit on occupational radiation exposure in medical imaging in Australia is 20mSv per year, averaged over five years and is governed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) (*2*). The basis of this limit comes from the International Committee of Radiological Protection (ICRP) and is based on studies of the atomic bomb survivors of Hiroshima and Nagasaki. The atomic bomb life span study showed that moderate to high doses of radiation (above 150mSv) can cause leukemia and many types of solid cancers including thyroid, breast and lung (*1*). Health effects at dosages below 100mSv in this study were reported as unclear and then virtually unknown below 20mSv. This uncertainty can be attributed to the difficulties assessing factual dosages due to the evacuation of survivors following the exposure (leading to lower assessment and follow-up), variation in exposure to unrelated radiation sources such as background radiation or previous medical examinations, and inherent variation amongst individuals related to lifestyle risk factors and genetics (*3*). The atomic bomb survivors received acute exposures to high levels of radiation, unlike medical radiation workers who receive low level chronic dosages (*4*).

There is much worldwide debate on the safety of chronic low dose radiation exposure. Radiation induced cancer is widely but not universally believed to occur from exposure to low doses of ionizing radiation used in medical imaging (*5*). The linear non-threshold (LNT) model proposes there are no safe levels of radiation exposure and there is an increased risk of cancer with increasing dose (*4*). This risk model is currently accepted by many international authorities including the International Committee for Radiological Protection (*4*) and the Committee on Health Effects to Low Levels of Ionizing Radiation (*6*). This model has been derived from direct extrapolation of the Life Span Study data and states that a single radiation particle hitting a single DNA molecule in the human body can initiate cancer; the more radiation

received, the higher the probability of a hit and therefore an increased risk (*7*). One of the many arguments against the LNT model is that the human body has a natural defense mechanism consisting of DNA repair enzymes to prevent the vast majority of DNA damage turning into cancer, that is, there is a threshold at which the body can protect itself (*7*). Another theory is that of radiation hormesis which advocates that small amounts of radiation may have beneficial rather than harmful biological effects. There have been a number of cellular and molecular studies that indicate low level exposure to radiation can cause an adaptive response, enabling protection from subsequent radiation (*8*). Another argument is the bystander response model. This postulates that low levels of radiation exposure may be even more damaging than the predicted LNT model. Bystander effects describe the effect of extracellular mediators from irradiated cells on neighbouring non irradiated cells resulting in radiation effects seen in those non irradiated cells. This cell to cell communication is thought to enhance the effect of low radiation doses (*9*).

Worldwide literature on the health effects of low dose radiation exposure in humans is sparse, with only four major scientific reports being published and or updated in the last 15 years mentioning occupational exposures. These reports place importance on all low dose exposure mechanisms including background exposure, medical examination exposures to patients and other environmental exposures such as aviation. However, it is noted there is a significant gap in knowledge on health effects for occupationally exposed persons who continuously receive low exposures every day conducting their work duties. To address this, in 2016 the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) called upon every member of the UN to report on their occupational radiation exposures with the aim of evaluating health risks of chronic low dose radiation and the impact new technologies have had on occupational dosages received (*5*).

In the field of medical imaging, the U.S radiologic technologist study (USRT) is a major research investigation that has been ongoing since 1982. The aim is to investigate the health effects of low dose occupational radiation exposure in radiologic technologists and is the largest study ever undertaken on

this topic (*10*). Major findings of this study conclude that there was an increased cancer incidence amongst the 90,305 radiologic technologists surveyed between 1983-1998. This cohort performed either nuclear medicine or diagnostic radiography procedures or both. Female technologists showed an increased risk for solid tumours, breast cancer and thyroid cancer. Male technologists showed an increased risk for melanoma and thyroid cancer. The researchers propose the increased breast cancer risk is directly caused by working with low dose ionizing radiation. They also propose the increased prevalence of other types of cancer could be caused by an increased awareness and vigilance by the health worker who has easier access to health care checks. The USRT has recommended a longitudinal study and investigation into lifestyle choices (*11*).

Based on the significant gaps in the research on low dose radiation, there is a need to investigate individual lifestyle choices when reporting on health data. The aim of this study was to pilot test a survey developed to assess the health and lifestyle factors of Australian medical radiation workers (diagnostic radiographers, nuclear medicine technologists and radiation therapists).

METHODS

The study has been approved by the University of Newcastle Human Research Ethics Committee (approval number H-2018-0087), and the need for written informed consent was waived dur to the low risk and anonymous nature of the research.

PARTICIPANTS

A cohort of nuclear medicine technologists (NMTs) were selected to test the survey. NMTs registered with the Australian Health Practitioner Regulation Agency (AHPRA) were invited to participate via an advertisement placed in the AHPRA monthly newsletter. Eligibility criteria stated participants must have current AHPRA registration as a nuclear medicine technologist or provisional nuclear medicine technologist.

Pilot testing involves formally testing a survey with a small representative sample of participants to identify

any problems, such as survey format (closed, semi-closed or open) and completeness of questions. The exact number of participants needed to pilot a survey is seen to vary in the literature, though the most cited numbers are between 10 and 30 participants (*12,13*). A sample size of 100 participants was considered for pilot testing the current survey.

SURVEY DESIGN

The survey was designed based on the European Health Interview Survey and the National Statistics Office of Malta Lifestyle survey (*14,15*). The European Health Interview Survey conducted across 17 countries contained 130 questions on demographics, health status and perceived health status, health care and health determinants (*14*). The National Statistics Office of Malta lifestyle survey was more targeted and asked 39 questions relating to smoking, alcohol consumption, health, fruit and vegetable intake and height and weight (*15*).

The current survey consisted of 53 questions divided into 4 sections, gathering data on demographics (3 questions), lifestyle (11 questions), employment (26 questions) and health (13 questions). While mainly employing closed response questions, some semi-closed questions were used to gather a range of likely responses to be used as closed response questions in the main survey. The survey was administered online via SurveyMonkey from July to October 2018.

DATA ANALYSIS

Quantitative data analysis was performed using descriptive statistics such as counts and frequencies. Data from the 2017-2018 Australian National Health Survey (*16*) was used to compare the lifestyle choices and health of NMTs with the Australian general population. Given the pilot nature of this research and small number of participants statistical differences were not assessed.

RESULTS

PARTICIPANT SIZE

A total of 101 nuclear medicine technologist's pilot tested the survey.

DEMOGRAPHICS AND EMPLOYMENT

Summary demographics are presented in Table 1. Of particular note was the relatively young age of the participant group (65% under 35 years old) who had worked in medical radiation science for less than 10 years.

LIFESTYLE FACTORS

Exercise: Very few participants (3%) reported that they did not exercise weekly (Figure 1), with most participants exercising between one and six hours per week.

Smoking: Eighty-six percent of participants reported to have never smoked with 3% of participants being current smokers (Table 2). For the ex-smokers the majority (64%) quit smoking more than 5 years previously.

DIETARY INTAKE

Alcohol Intake: Over half (61%) of participants reported having less than 4 standard alcoholic drinks per week, with male participants consuming more than female participants (Figure 2). Consumption of 11+ standard drinks per week was indicated by 11% of males and 5% of females.

Fruit and Vegetable Intake: Participants were asked how often they eat on average 2 servings of fruit per day (recommended daily intake). One piece of fruit or half a cup of canned fruit was defined as one serving. Around one in ten participants reported doing so less than once per week. The majority of respondents (43%) indicated they met the recommended daily intake 2-4 times per week. (Figure 3). A similar percentage of females (14%) and males (17%) eat 2 servings of fruit every day.

Participants were asked how often they eat on average 5 servings of vegetables per day (recommended daily intake). A serving was defined as one half a cup cooked vegetables or one cup of raw vegetables. Only a small number of participants (9%) reported doing so less than once per week. The majority of respondents (40%) indicated they met the recommended daily intake 2-4 times per week (Figure 3). Over twice the percentage of females (15%) compared to males (7%) eat 5 servings of vegetables every day.

HEALTH FACTORS

Body Mass Index: The mean height of participants was 1.73m with a range of 1.5m – 2.0m. The mean weight of participants was 78kg with a range of 48kg – 150kg. BMI of participants was calculated using the Australian Heart Foundation formula (weight/height^2), where weight is measured in kilograms and height

in meters (*17*). Participants were then classified as being underweight, healthy, overweight or obese using the National Health and Medical Research Council BMI classification (*18*). Whilst half of the participants were considered to be in the healthy BMI range 49% were classified as overweight or obese (Table 3).

Mental Health and Stress: Almost half the number of respondents (47%) report feeling stressed on average at least 2-4 times per week, with 8% report feeling stressed every day (Figure 4). Participants were asked what techniques they use to try and relieve the feeling of stress. Exercise was the most popular choice (63.16%) (Table 4).

Overall Health: Participants were asked how they rate their overall health; 39% reported it as very good and 6% reported excellent (Figure 5). Participants were also asked if they had been told by a doctor if they had any medical conditions. The results are shown in Table 5. The most reported conditions are mental health (13%) and fertility problems (7%). Participants were asked to provide further details if they selected yes to any of the conditions. Anxiety (77%) and depression (62%) were the most reported mental health conditions. Polycystic ovarian syndrome (29%), endometriosis (14%) and structural abnormalities (14%) were reported as the highest cause of infertility (Table 5).

Cancer Incidence: Very few (3%) participants reported an incidence of cancer, with 1 participant reporting a previous breast cancer, another rectal carcinoma with the third being unspecified.

DISCUSSION

The Australian Institute of Health and Welfare reports that the number one risk factor contributing to disease burden in Australia is smoking followed by obesity, alcohol use, low levels of physical exercise and high blood pressure (*19*). It has been suggested that healthcare workers make better choices as they have greater health literacy, education and patient experience to draw on (*20*). Helfand and Mukamal (2013) surveyed 260,558 US participants, 21,380 of those were health care practitioners (HCPs). The results showed no significant difference in lifestyle choices, mainly smoking, obesity and alcohol consumption in HCPs compared to the general population (*21*). Dayoub and Jena (2015) compared trends in the U.S

National Health Survey from 2002, 2005, 2007, 2010 & 2013. The sample contained 147,129 respondents, 3,869 of those were HCPs. The results showed HCPs did more physical activity than the general population, had lower rates of smoking, obesity and high blood pressure, but higher rates of excessive alcohol consumption (*20*).

LIFESTYLE FACTORS

Exercise: Leading an inactive lifestyle can cause cardiovascular disease and increase the risk of type 2 diabetes. Sufficient physical activity is seen as 150-300 minutes of moderate intensity exercise each week in adults aged 18-64 according to the Australian Department of Health (*22*). In the 2017/2018 National Health Survey (*16*) 55% of Australians reported undertaking 150 minutes or more exercise in the last week. The results of this study showed that NMTs to be slightly more active with only 41% of participants being inactive or having sufficient levels of activity. This would suggest that NMTs should have lower rates of cardiovascular disease and type 2 diabetes than the general population as they are more active. Cardiovascular disease accounted for 14% of the Australian disease burden in 2015 and 2.2% for type 2 diabetes (*16*). In the current study, 2% of participants reported being diagnosed with cardiovascular disease and 1% with a diagnosis of type 2 diabetes.

Smoking: Smoking is the most preventable cause of death in Australia (*23*). It is responsible for more cancer deaths in Australia than any other, with each cigarette containing over 70 carcinogenic chemicals. Current smokers are estimated to die an average of 10 years earlier than non-smokers (*24*). According to the Australian 2017/2018 National Health Survey, 1 in 6 (17.5%) Australians over 18 years of age smoke cigarettes daily (*16*). Based on these results we would expect NMTs to have much lower cancer rates as the rate of current smokers was just 3%.

DIETARY INTAKE

Alcohol: According to the Foundation for Alcohol Research and Education more than 144,000 Australians are hospitalised every year for alcoholic related disease (*25*). It causes approximately 6,000 deaths,

making it the second most serious preventable health challenge behind smoking (*19*). The 2009 National Health and Medical Research Council (NHMRC) guidelines for reducing health risks associated with the consumption state that 'drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury' (*26*). The 2019 Foundation for Alcohol Research Education alcohol survey reported that 82% of the 1,820 Australian participants consume alcohol weekly with more males (85%) consuming alcohol than females (79%). A quarter (24%) of people responding to the survey drink three or more days per week and 12% drink 6-10 standard drinks on a typical occasion (*25*). The Australian 2017/2018 National Health Survey reported that one in six (16.1%) participants over the age of 18 years consumed more than two standard drinks per day (*16*). The results of this study showed 76% of NMTs consume at least one standard alcoholic drink per week, slightly below the national average as a whole. While twice as many male than female NMTs are more likely to exceed 11 standard drinks in a week, on average NMTs are less likely to exceed the NHMRC lifetime guidelines. Long term alcohol use can lead to chronic conditions such as hypertension, cardiovascular disease, liver cirrhosis, dementia, mental health problems and some cancers (*16*). We would expect to see a decrease in these conditions in the NMT population.

Fruit and Vegetable Intake: Diets rich in fruit and vegetables can lower blood pressure, reduce the risk of cardiovascular disease, stroke, eye disease and digestive problems (*19*). In the 2017/18 Australian National Health Survey just over half (51.3%) of Australians reported that they consumed two or more serves of fruit per day as per the recommended daily intake. Just one in thirteen (7.5%) reported they consumed the five servings of recommended daily vegetable intake (*16*). The results of this study show only 15% of NMTs consume the recommended two servings of fruit each day. However, 13% consume five serves of vegetables every day which is nearly double the national average. There has been a lot of international discussion on the dietary benefits versus effects of certain foods in the media over the last couple of years (*27*). Due to the increased promotion of high protein, no sugar diets many people believe fruit contains

excessive sugar and instead focus on a high intake of vegetables and meats (*27, 28*). To explain NMTs consuming lower amounts of fruit and higher amounts of vegetables it could be that, as suggested by Dayoub and Jena (*20*), NMTs have greater access to health literacy and are making conscious health decisions based on current trends.

HEALTH FACTORS

Body Mass Index: Obesity is the biggest risk factor for cardiac disease, type 2 diabetes, some musculoskeletal conditions and cancers. As body mass index increases, so does the risks (*23*). In 2017/2018 National Health Survey more than two in three of Australian adults were reported as being in the overweight (35.6%) or obese category (31.3%) (*16*). In this study just 49% of respondents fell into the overweight and obese category, well below the national average. This places NMTs in better health than the general population, which should result in lower levels of cardiovascular disease, diabetes, cancer and mental health.

Mental Health and Stress: The Australian Government (*29*) estimates 20% of Australians suffer from mental health disease including depression, anxiety, dysthymia, bipolar disorder, panic disorder, agoraphobia, obsessive compulsive disorder, post-traumatic stress disorder and substance abuse disorders. Stress from occupational causes is quickly becoming the greatest cause of occupational induced disease (*30*). Chronic exposure to stressful situations has been linked to negative health outcomes such as depression, anxiety, cardiovascular disease, exhaustion and immune disorders (*31*). Nearly half of respondents in this current study reported feeling work related stress 2-4 times per week. In the 2017/2018 National Health Survey, 13% of Australian adults reported experiencing high or very high levels of psychological distress and 60.8% reported low levels of distress (*16*). In this study, 13% of respondents identified as having a mental health condition; these were divided as 77% anxiety and 62% depression. Stressful working conditions are known to have an impact on employee lifestyle choices by limiting their ability to make positive changes and eliminate unhealthy behaviours (*32*). It is unknown what effect these

feelings are having on individual health choices and occupational productivity.

Overall Health: Self-assessed overall health status reflects a person's perception of their own health and is commonly used to provide a broad picture of a populations overall health. In the 2017/2018 National Health Survey, 56.4% of Australians reported their health to be excellent or very good (*16*), compared to only 45% of NMTs. While 14.7% of adult Australians reported being in fair or poor health, NMTs fared better with only 5% falling into these lower categories.

Cancer Incidence: According to the Australian Institute of Health and Welfare (*33*) the cancer incidence rate in Australia (CIR) is 1 in 3 up to the age of 75 years (33,333 per 100,000 persons), with mean age of cancer diagnosis being 66.3 years. This includes diagnosis for breast, prostate, lung, colon, lymphoma, head and neck, leukemia, malignant neoplasms, kidney, thyroid cancer and melanoma of the skin but does not include basal cell carcinoma or squamous cell carcinoma of the skin as these are not notifiable diseases in Australia. A small number of participants in this study reported incidence of cancer (3/101) which if extrapolated (3,000 per 100,000) indicates a much lower cancer incidence rate that Australians up to the age of 75 years. However, the greatest risk factor for most cancers is age and the Australian CIR for persons up to 35 years old is 302 per 100,000 (*33*), which is ten times lower than the CIR of participants in this study. This may be a concern considering that the majority of participants (65%) in this study identified as 35 years of age or younger, however participants who identified as having cancer reported to be within age bands "41 – 45 years", "46-50 years" and "over 60 years". Lifestyle factors also have a large effect on cancer rates, and the pilot survey has identified NMTs to have healthier lifestyles (less smoking, less alcohol consumption, more exercise, lower levels of obesity) than the Australian population, meaning they should have lower rates of cancer induction. While there may be an indication of a higher CIR amongst the NMTs than the Australian public linked to profession (and chronic exposure to radiation) and not lifestyle, this should be considered with caution given the very small sample size. A study with a much larger sample size is required to confirm this.

RECOMMENDATIONS FOR LARGER STUDY

There are approximately 18,000 medical radiation workers in Australia, with the majority being diagnostic radiographers. It will be important to recruit as many of these as possible to enable realistic comparisons to be made to the health (especially the cancer incidence rates) and lifestyle factors of the Australian population. Advertising of the larger study will therefore extend outside the APRHA monthly newsletter and will include social media (Twitter, Facebook), state organisations, national conferences and the researcher's own networks. Recruitment will also involve snowballing to capture medical radiation workers who have left the profession.

Section 3 of the pilot survey contained a lot of NMT work specific questions, which in retrospect were irrelevant to the aims of this study. The larger survey will therefore greatly reduce the number of questions in this section. The survey will be expanded to provide more lifestyle questions around smoking, exercise and the consumption of alcohol and more specific disease sub-groups as closed questions, as a large number of participants did not provide this detailed information.

CONCLUSION

This pilot survey demonstrated feasibility in the conduction of a widespread survey to assess the health and lifestyle factors of the Australian medical radiation worker cohort. The results show that overall Australian nuclear medicine technologists make better lifestyle choices (more exercise, vegetable consumption, lower rates of smoking and alcohol consumption) resulting in lower rates of obesity than seen in the Australian population. Most health issues are comparable to the general Australian population, though it would be expected that the health amongst NMTs who participated in this study would have been better than the general population. The results appear to suggest a higher incidence of cancer in the participant group which needs to be confirmed with a larger study (sample size).

DISCLOSURE

No conflict of interest relevant to this article.

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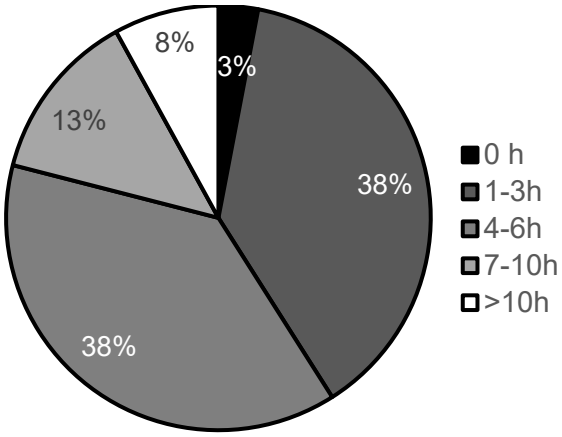

Figure 1: Distribution of average weekly exercise (hours) undertaken by participants

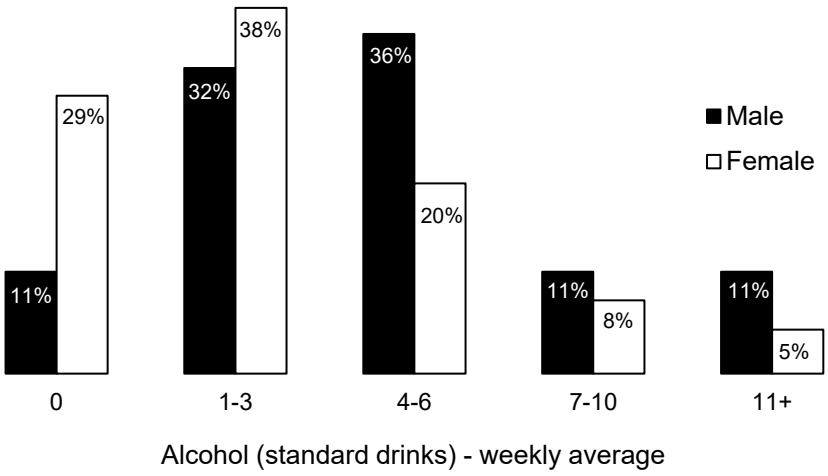

Figure 2: Distribution of average weekly alcohol consumption by male and female participants

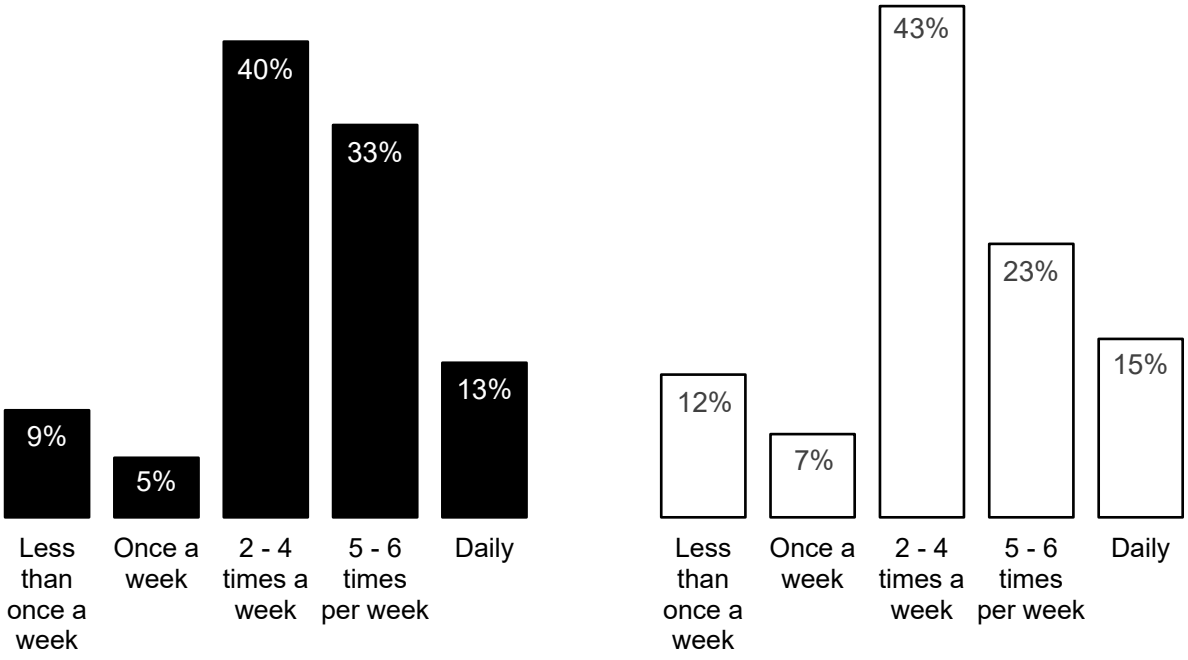

Figure 3: Distribution of average daily servings of fruits & vegetables consumed by participants

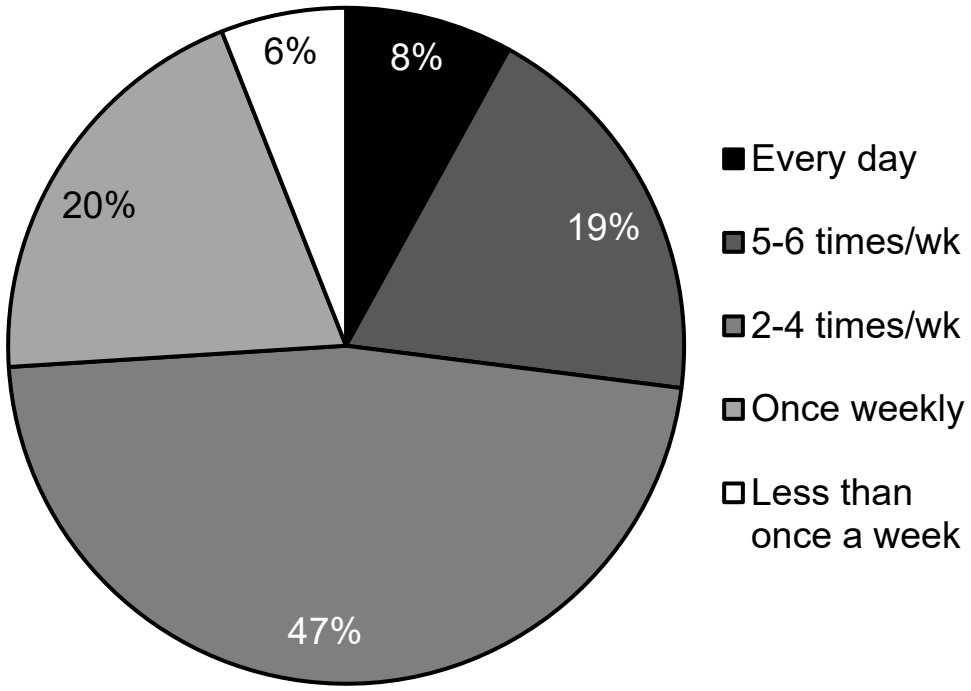

Figure 4: Distribution of the number of times participants experience stress on average per week

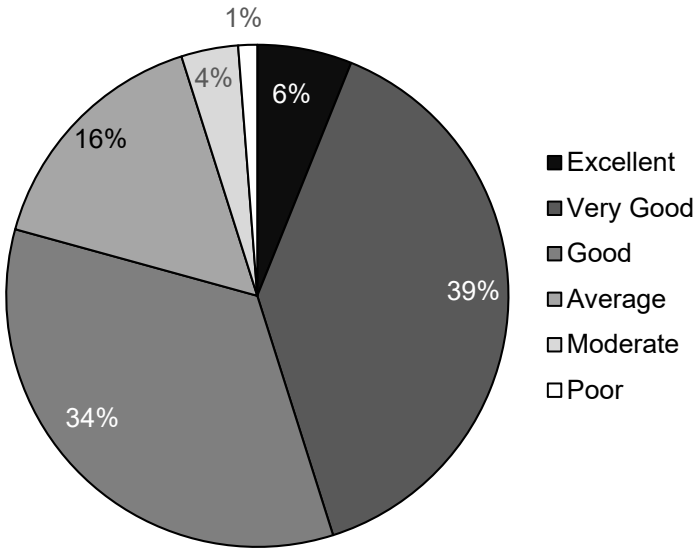

Figure 5: Distribution of self-reported personal health rating

Table 1: Summary Demographics of Participants

Demographic	Percentage
Age Group	
20-25	21%
26-30	28%
31-35	16%
36-40	9%
41-45	10%
46-50	8%
51-55	5.%
56-60	0%
60+	3%
Ethnicity	
Caucasian	93%
Aboriginal / Torres Strait Islander	0%
Asian	2%
Other- Lebanese, Indian, European	5%
Gender	
Male	32%
Female	68%
Employment Status	
Full time	70%
Part time	30%
Casual	0%
Type of Practice	
Public	35%
Private	65%
Years Working with Medical Radiation	
< 1	6%
1-5	28%
5-10	26%
11-15	17%
16-20	5%
20+	18%

Table 2: Smoking Habits of Participants

Smoking status			Percentage per category	Total Percent of respondents
Never smoked				**86%**
Ex-smoker	Number of cigarette(s) per day	1 – 5	55%	**11%**
		5 – 10	36%	
		More than 10	9%	
	How long since quitting	< 6 months	0%	
		6 – 12 months	9%	
		1 – 2 year(s)	27%	
		3 – 5 years	0%	
		> 5 years	64%	
Current smoker	Number of cigarette(s) per day	1 – 5	67%	**3%**
		5 – 10	33%	
		More than 10	0%	
	How many year(s) of smoking	< 1 year	0%	
		1 – 5 year(s)	33%	
		5 – 10 years	67%	
		> 10 years	0%	

Table 3: Distribution of Body Mass Index of participants

BMI	Category	% of respondents
Less than 18.5	Underweight	1%
18.5-24.9	Healthy	50%
25-29.9	Overweight	27%
30 and over	Obese	22%

Table 4: Self-reported techniques used by participants to reduce feelings of stress

Techniques Used to Relieve Stress	**(% of total responses)**
***Note some responses included multiple selections e.g. meditation and exercise*	
No Action	27%
Exercise	63%
Meditation	28%
Other	25%
Music	2%
Rest	1%
Aromatherapy	1%
Counselling	1%
Massage	2%
Talking	2%
Breathing	1%
Reading	2%
Eating	1%
Float tanks	2%
Socialising	1%
Colouring	1%
Photography	1%
Sleeping	1%
Yoga	1%
Psychotherapy	1%
Painting	1%
Deal with issue causing stress	1%
Mindfulness	1%
Complete stressful task	1%
Time management	1%
Alcohol consumption	1%
Hiking	1%
Other 'self-care' activities	1%

Table 5: Medical conditions reported within participant group

Medical Condition	(% of total responses)	Sub-Type	
***Note some responses included multiple selections e.g. Thyroid and Liver conditions*			
No Medical Condition	32%		
Cancer / malignant tumours	3%	Breast cancer	33%
		Rectal Carcinoma	33%
		No type given	33%
Benign tumours	6%	Lipoma	16%
		FNH	16%
		Cystadenoma	33%
		Gynecomastica	16%
		Pleomorphic Adenoma	16%
Thyroid conditions	5%	Multi-nodular goitre	40%
		Hyperthyroidism	40%
		No type given	20%
Cardiovascular conditions	2%	Pericarditis	50%
		No type given	50%
Liver conditions	1%	Obstetric cholestasis	100%
Diabetes	1%	Type 2 Diabetes	100%
Osteoarthritis	3%	No type given	33%
		Osteoarthritis	67%
Rheumatoid arthritis	1%	Rheumatoid arthritis	100%
Autoimmune disease	2%	Psoriatic arthritis	50%
		No type given	50%
Mental health conditions	13%	Anxiety	77%
		Depression	62%
		No type given	15%
Fertility problems	7%	PCOS	29%
		Structural	14%
		Endometriosis	14%
		No type given	43%
Stroke; Cataracts; Osteoporosis; Parkinson's Disease; Renal Disease	0%	No incidence reported	