

Smoking Status and Quality of Life: Preliminary Results from a Sample of Adult Smokers who called Quitline

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ABSTRACT

Smoking is one of the leading causes of morbidity and mortality in most countries. Between 1987 and 2005, smoking prevalence in Australia decreased in all SES groups. Most smokers wanted to cease smoking, and many had tried unsuccessfully to stop on one or more occasions. This study uses several quality of life instruments (AQoL-8D, EQ-5D, SWLS) to measure the quality of life of people in various stages of quitting.

Respondents were recruited from a phone-in service, called Quitline, operated by the Cancer Council of Victoria (CCV). The study protocol included three follow-up questionnaires over a 12 month period.

This paper reports on an initial analysis of the first 292 baseline respondents. The data collection was conducted online and by post. The baseline was posted to 626, and emailed to 190 participants. 201 and 91 responded respectively, response rates of 48% online and 32% by post. More females (61%) than males (39%) responded to the questionnaires.

Age, gender, and educational characteristics were compared with the Australian standard. Participants' SES figures, income and occupational status are also given. Figures are given on BMI, drinking levels and current health.

37% of the females and 25% of the males were 'smoking daily' (more than half (54%) were post-graduate or degree holders), 58% of the females and 64% of the males were in the 'now quit' category.

Comparing smokers and ex-smokers, a higher percentage of ex-smokers were found to be overweight (39% compared to 25% for smokers) and obese (29% compared to 21%). Ex-smokers reported better current health. 32% of ex-smokers reported excellent or very good health compared to 24% for smokers. Likewise, 39% reported good health compared to 31% for smokers. More smokers reported poorer health (15% compared to 6% for ex-smokers).

Part-time and self-employed reported the highest level of current health; unemployed or those seeking work reported the lowest. The highest percentage of overweight was amongst graduates and postgraduates. The highest percentage of obese was amongst people who had not studied beyond high school.

The great majority of those who reported close to full health on the EQ-5D reported poorer health with AQoL-8D. Using the EQ-5D, 85 out of 287 respondents had full health and another 76 people had close to full health. The numbers for AQoL-8D were 2 and 43 respectively.

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Smoking status and quality of life: Preliminary results from a sample of adult smokers who called Quitline

Introduction

Smoking is one of the leading causes of morbidity and mortality in most countries. It is the largest cause of premature death in developed countries (World Health Organisation (WHO) 2002), It reduces the Health Related Quality of Life (HR-QoL) of smokers who have tried to quit and subsequently failed. Numerous studies have demonstrated various ill effects of smoking on health. Among men, smoking has been shown to shorten life by 7 to 10 years (Doll et al. 2004; Brønnum-Hansen and Juel, 2001; Martel et al. 2000; Roger and Powell-Griner, 1991). The life expectancy of women is reduced by 6 to 8 years. Studies from the United States, New Zealand and European countries suggest that smoking has been greater among lower socio economic status (SES) groups, widening the SES differences (Harper and Lynch 2007; Hill et al. 2005; Huisman et al. 2005; Kanjilal et al. 2006). Smoking is linked to factors that may affect the quality of life, such as poorer nutrition (Dallongeville et al. 1998) and may be linked to a lowering of a person's socio-economic status (Jarvis and Wardle, 1999). In other studies it has been reported that between 20 to 50 % of the inverse social gradient in male mortality has been attributed to smoking (Blakely and Wilson, 2005; Emberson et al. 2004; Jha et al. 2006; Siahpush et al. 2006). One of the benefits of reduced smoking is a possible reduction in social inequalities in mortality particularly among lower socio-economic (SES) groups.

In Australia, Victoria et al. (2008) reveal that between 1987 and 2005 smoking prevalence decreased in all SES groups. Tobacco control activity was found to be associated with changes in smoking prevalence and consistent changes across SES groups.

The start of young people's smoking may be influenced by several factors. Clark and McCann (2008) have reviewed the literature and found that peers and friends were an important influence on the decision to start smoking by undergraduate nursing students in Australia. Most smokers wanted to cease smoking, and many had tried unsuccessfully to stop on one or more occasions (Clark and McCann 2008). Studies from many countries including Canada (Seguire and Chambers, 2000), Sweden (Stjerna et al. 2004), Japan (Suzuki et al. 2005), Iran (Nasrabadi et al. 2004), England (Calnan and Williams 1991) suggest that peers and friends have an important influence on the decision to commence smoking. In most countries it is generally believed that the offering of cigarettes to others is regarded as a sign of friendship and hospitality. White and Haymen (2006) found that 41% of adolescents in Australia who smoked usually obtained their cigarettes from friends. Findings from these studies suggest that smoking plays an important part in building and maintaining social networks and relationships.

The effect of smoking on HR-QoL has been examined in cross-sectional studies of the general population (Tillmann et al. 1997; Lyons et al. 1994; Mody and Smith, 2006; Wilson et al. 1999) and some shorter follow-up studies have been conducted for multiple diseases, showing the

benefits of non-smoking in these subgroups (Taira et al. 2000; Turner et al. 2001; Garces et al. 2004). Few follow up studies have examined the HR-QoL of ex-smokers (Croghan et al. 2005; Mitra et al. 2004).

Objectives of the study

The overall aim of this project is to investigate the quality of life of the general public who go through the process of quitting. The study presents data and basic tabulations from the first 292 respondents to a survey carried out by the Centre for Health Economics (CHE) at Monash University and the Cancer Council of Victoria (CCV). Tabulations include the prevalence of smoking by social and demographic characteristics and selected responses to the questionnaire. The focus is upon the quality of life and four separate measures of this were included. These were the AQoL-8D (PsyQoL), EQ-5D, Satisfaction with Life Scale (SWLS) and the Personal Wellbeing Index (PWI). Because of their importance in the project the paper includes a comparison of the two Multi-Attribute Utility (MAU) instruments used for economic evaluation, the EQ-5D and AQoL-8D.

Methods: The baseline survey

The CCV has for some years operated the Quitline, a confidential telephone service providing information, support and individualised advice for people who want to quit smoking. Callers over 18 were given preliminary information by the Quitline advisor and asked if they were interested in taking part in a quality of life survey being conducted by researchers at Monash University. They were informed that their decision would not affect their relationship with Quitline or the Cancer Council and that they could withdraw from the study at any time.

Upon agreement people were contacted by Monash researchers. Those with internet were sent a link to the online survey; those without internet were sent paper copies and reply paid envelopes. The Explanatory Statement and Consent Form can be found in Appendix 1 and the questionnaire is in Appendix 2.

The questionnaire was developed jointly by the CHE and CCV. The various sections of the questionnaire are summarised in Box 1.

Box 1. The QuitQoL Questionnaire

The QuitQoL Questionnaire
<ul style="list-style-type: none">• Personal Wellbeing Index (PWI)• Satisfaction with Life Scale (SWLS)• AQoL-8D (Mental Health)• EQ-5D• Socio demographics• QuitQoL specific questions

The specific questions of the Quitline survey included a large number of questions relating to smoking behaviour and personal characteristics.

The Multi Attribute instruments, AQoL-8D and the EQ-5D, measure quality of life on a scale of '0 to 1' where 0 represents death and 1 represents full health. They have utility scores generated from representative samples of the Australian and UK general populations¹ respectively. Both may be used to measure and evaluate the health related quality of life (HRQOL) of the general public with or without the use of utility weights. With utility weights they may be used in economic analyses to produce the utility scores needed for the calculation of Quality Adjusted Life Years (QALYs) which are the unit of output in Cost Utility Analysis (CUA) (Torrance 1986). The validity and sensitivity of alternative instruments has not, to date, been carefully compared (see Hawthorne and Richardson (2001) for the only 5 instrument comparison). The new AQoL-8D was selected as it is the largest psychometric MAU instrument and will have Australian weights (see Richardson, Khan et al 2009). The analysis and use of these two instruments will allow a comparison between the two instruments.

The EQ-5D was included as it is the most widely used instrument and has been mandated for use by National Institute for Clinical Excellence (NICE) in the UK. It is a standardised instrument which was developed by a multi-disciplinary group of researchers from seven centres across five countries for use as a measure of health outcome (The Euroqol group, 1990). It has five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety. Each dimension has three possible levels which together define 243 health states. Respondents were asked to choose the level that reflected their 'own health state today' for each of the five dimension.

The AQoL-8D (Mental Health) was developed as the fourth of the AQoL instruments at the Centre for Health Economics. Along with the AQoL-4D (Basic), -6D (Standard) and -7D (Vision), it is described in detail on the CHE website.

<http://www.buseco.monash.edu.au/centres/che/aqol/contents/instruments/>

The 8 dimensions and constituent items of the AQoL-8D instrument are summarised in Box 2.

Box 2. AQoL-8D Instrument

<p>Independent Living: household tasks, mobility outside the home, walking and self-care;</p> <p>Life Satisfaction: contentment, enthusiasm, degree of feeling happiness, and pleasure;</p> <p>Mental Health: feelings of depression, trouble sleeping, feeling angry, self-harm, feeling despair, worry, sadness, tranquillity/agitation;</p> <p>Coping: energy, control and coping with problems;</p> <p>Relationships: enjoying relationship with family and friends, close relationship with family and friends, social isolation, social exclusion, intimate relationship, family role and community role;</p> <p>Self-worth: feeling burden, worthless, and confidence;</p> <p>Pain: experience of serious pain, the degree of pain and the interference with usual activities caused by pain;</p> <p>Senses: vision, hearing and communication.</p>
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¹ At August 2009 AQoL-8D utility scores were being completed.

It is important to note that in the analysis reported in this paper unweighted (psychometric rather than utility) scores were employed.

For both AQoL-8D and EQ-5D unweighted scores were initially obtained from the item responses from the participants using the following formula:

$$Score = 1 - \left(\frac{X - X_{\min}}{X_{\max} - X_{\min}} \right) \quad (1)$$

Where x = Individual's total score from summing the response category rank; x_{\min} = Instrument's total minimum score; x_{\max} = Instrument's total maximum score. This simple algorithm results in values which vary between 1.0 and 0.0. Subsequent analyses will use utility weights when these become available for the AQoL-8D.

In addition to the above two instruments, the baseline survey data also used the Body Mass Index (BMI) to estimate individuals total body fat and its relationship to QoL of individuals. BMI is calculated by dividing weight in kilograms by height in metres squared:

$$BMI = \text{Weight (Kg)} / \text{Height}^2 \text{ (Metres}^2\text{)} \quad (2)$$

The Australian Government Department of Health and Ageing (2008) use the following range of BMI scores to determine the weight level:

- Underweight: Below 20
- Normal: 20 to 24.99
- Overweight: 25 to 29.99
- Obese: 30 and above

The Statistical Package for Social Sciences (SPSS 16.0 for Windows) was used for data analysis to accommodate the sample. The reliability (internal consistency) of different scales in the questionnaire was examined using a Cronbach alpha (coefficients more than .85 are considered to reflect good internal consistency of the scales). Bivariate ANOVA was also used to determine whether smoking prevalence within each age, gender and Socio Economic Indexes for Areas (SEIFA) group was significantly different from the average, The relationship between the quality of life (AQoL-8D, EQ-5D scores) and a group of variables including current smoking status, education, gender, age and BMI was also investigated using these techniques.

Results

The baseline QuitQoL questionnaire survey was posted to 626 participants on the lists that CCV provided and on email link to 190 others. At the time of writing responses had been attained from 201 and 91 people in the two groups respectively. The overall response rate was therefore 36%: online 48% and postal 32%. This paper analyses data from all 292 respondents.

Participants' demographics and smoking status

Participants' demographic and social characteristics according to current smoking status are reported in Table 1. There were more females (60.8%) than males (39.2%) in the study. About 65% of the respondents reported that they live with their family including husband/wife/partner/children and only 22% live by themselves (n = 198). About 32% reported that they were 'smoking daily' and 8% 'occasionally'. The vast majority (60%) of participants indicated that they had quit. There were more female smokers than male and fewer females had quit smoking than males. Comparing males and females the percentages smoking daily were 25 and 37 percent respectively, smoking occasionally 12 and 6 percent respectively; 64 and 58 percent respectively indicated that they had quit.

The age distribution was more or less uniform: 16% were age 25 to 34 years, 23% were 35 to 44, 26% were 45 to 54; and 19% were aged between 55 and 64 age groups. These four age groups constituted about 84% of participants. About 12% were aged over 65 years old and less than 5% were below 25. With regards to smoking status, the highest rate (64%) of quitters was found among the 45 to 64 age groups and the highest rate (43%) of smoking daily was among the 65 years and above group. However, within the ex-smokers (now quit), 45 to 54 age group had the highest proportion (27%) of quitters compared to 23% in 35 to 44, 20% in 55 to 54, 16% in 25 to 24, and 10% in 65 years+ age groups.

The smoking behaviour of the people was also analysed according to the level of educational achievement. Table 1 shows 55 percent had high school or less qualifications, 18% had graduate or postgraduate degrees (only 5% had a postgraduate degree), 20% obtained the certificate level, 7% had advanced diploma or TAFE qualifications. Among the participants who smoke daily or occasionally (n = 113), 21% had graduate or higher educational qualifications, 53% had high school or less qualifications and 26% had certificate/advanced diploma or TAFE qualifications. The highest rates of daily smokers and quitters were found among the people who had undergraduate qualifications. Within the postgraduates, 54% were daily smokers 31% ex-smokers and 15% were occasional smokers.

SEIFA groups were defined by the socio-economic status (SES) of the respondents' postcode. The geographical distribution is well represented. About 53% were from the SEIFA groups of 3 and 4 and 18% from group 1 (lowest), 15% from group 2 and 14% from the highest SEIFA group 5. People who live in the lower SES groups (SEIFA 1 to 3) had more daily smokers (33 to 39%) and the highest SES group (4 and 5) people quitted more (63%+) compared to other groups. About 72% of people who smoke daily or occasionally had Anglo-Saxon and European cultural backgrounds. Most of the participants (84%) were born in Australia, 5% were born in UK and 12% were born in other countries. Australian born people had the highest rate of quitters (Table 1).

With regards to employment and income, 36% were employed full time, 12% part time, 28% unemployed and 18% were not in the labour force. About 40% had income less than \$350 pw and 16% had income more than \$1400 pw. The highest rates of daily smokers were found among the people who were unemployed and not in the labour force and had income less than \$350 pw. In contrast people who were employed (full-time or part-time) and had income more than \$350 pw were the most quitters of smoking (Table 1)

Table 1 Demographics, social characteristics and smoking status of the QuitQoL participants

Variables	Description	Current smoking status			Total		Aust standard %
		Smoking daily (%)	Smoking occasionally (%)	Now quit (%)	n	%	
Gender	Male	24.8	11.5	63.7	113	39.2	48.9
	Female	36.6	5.7	57.7	175	60.8	51.1
	Total	31.9	8	60.1	288	100.0	
Age	15 to 19 Years	0	33.3	66.7	3	1.0	8.5
	20 to 24 years	30	20	50	10	3.5	8.4
	25 to 34 Years	31.1	8.9	60	45	15.7	16.8
	35 to 44 Years	31.8	7.6	60.6	66	23.1	18.5
	45 to 54 Years	33.8	2.7	63.5	74	25.9	17.4
	55 to 64 Years	24.5	11.3	64.2	53	18.5	13.8
	65 Years +	42.9	8.6	48.6	35	12.2	16.6
	Total	31.8	8	60.1	286	100.0	
Education	Primary/High School Certificate	29.1	8.9	62	158	55.4	31.8
	Advanced diploma/ TAFE	31.6	7	61.4	57	20.0	13.5
	Bachelor/University/ College	26.3	10.5	63.2	19	6.7	22
	Postgraduate/diploma degree	36.8	2.6	60.5	38	13.3	7.6
	Total	53.8	15.4	30.8	13	4.6	
	Total	31.6	8.1	60.4	285	100.0	
SEIFA	1	33.3	14.6	52.1	48	17.4	
	2	32.6	7	60.5	43	15.6	
	3	38.5	4.6	56.9	65	23.6	
	4	30	5	65	80	29.0	
	5	25	12.5	62.5	40	14.5	
	Total	32.2	8	59.8	276	100.0	
Cultural origin	Aboriginal/ Torres Strait Islander	40	0	60	5	2.2	
	Anglo-Saxon	37.1	5.2	57.8	116	50.2	
	Asian	100	0	0	1	0.4	
	European	31.3	10.4	58.3	48	20.8	
	Pacific Islander	22.5	12.5	65	40	17.3	
	Latin American	29.4	23.5	47.1	17	7.4	
	Maori	0	0	100	1	0.4	
	Middle Eastern	33.3	0	66.7	3	1.3	
Total	32.9	8.7	58.4	231	100.0		
Employment	Full-time: self employed or employee	21.2	11.5	67.3	104	36.4	
	Part-time or casual/self-employed	36.4	0	63.6	33	11.5	
	Unemployed, seeking work	41.3	10	48.8	80	28.0	
	Not in the labour force	39.2	3.9	56.9	51	17.8	
	Other	22.2	5.6	72.2	18	6.3	
	Total	31.8	8	60.1	286	100.0	
Income	Below \$150pw	50	7.4	42.6	54	20.3	
	\$150 - \$349pw	33.3	9.3	57.4	54	20.3	
	\$350 - \$649pw	26.5	10.2	63.3	49	18.4	
	\$650 - \$1399pw	25.8	6.1	68.2	66	24.8	
	\$1400 - \$1999pw	32	4	64	25	9.4	
	Above \$2000pw	22.2	16.7	61.1	18	6.8	
	Total	32.7	8.3	59	266	100.0	
Country of birth	Australia	31.4	8.4	60.3	239	83.3	70.9
	Other	35.4	6.3	58.3	48	16.7	29.1
	Total	32.1	8	59.9	287	100.0	

Smoking behaviour and smoking status

Participants' smoking intensity or behaviour varied according to smoking status. Among smokers 33% smoke 10 or less cigarettes a day (44% of males' vs 27% of females), 37% smoke 11 to 20 cigarettes (33% of males' vs 40% of females) and 23% smoke 21 to 30 cigarettes (19% of males' vs 26% of females) and 7% smoke 31 or more cigarettes per day (5% of males vs 8% of females). The frequency of smoking among females was much higher than males particularly amongst heavy smokers.

Table 2 Smoking behaviour and smoking status of the respondents

Question	Response	Current smoking status (%)		Total (n=115)	
		Smoking daily (n = 92)	Smoking occasionally (n=23)	n	%
On average, how many cigarettes do you smoke a day?	1-10 cigarettes per day	48.7	51.3	39	33.9
	11-20 cigarettes per day	93.0	7.0	43	37.4
	21-30 cigarettes per day	100.0	0.0	25	21.7
	31 or more cigarettes per day	100.0	0.0	8	7.0
How soon after waking do you usually have your first smoke?	More than 60 minutes	32.1	67.9	28	24.3
	31-60 minutes	94.7	5.3	19	16.5
	6-30 minutes	92.7	7.3	41	35.7
	5 minutes or less	100.0	0.0	27	23.5
When, if ever, did you make your last quit attempt?	Within the past month	60.7	39.3	28	24.3
	Between 1 to 3 months	88.6	11.4	44	38.3
	Between 4 to 6 months	85.7	14.3	7	6.1
	Between 6 months to 1 year	80.0	20.0	5	4.3
	Between 1 to 2 year	90.9	9.1	11	9.6
	More than 2 years ago	75.0	25.0	16	13.9
	Never tried	100.0	0.0	4	3.5
How long were you quit for on your last quit attempt?	Less than 1 week	97.4	2.6	39	35.5
	Between 1 week to 1 month	66.7	33.3	39	35.5
	Between 1 to 6 months	65.0	35.0	20	18.2
	More than 6 months	83.3	16.7	12	10.9
If you decided to give up smoking completely in the next 6 months, how sure are you that you would succeed?	Not at all sure	91.7	8.3	36	31.3
	Slightly sure	84.2	15.8	19	16.5
	Moderately sure	76.9	23.1	39	33.9
	Very sure	56.3	43.8	16	13.9
	Extremely sure	80.0	20.0	5	4.3

The smokers (smoking daily or occasionally) were further analysed according to prevalence of their smoking and quit attempts. Table 2 shows the smoking behavior and smoking status of the respondents. There were more daily smokers (n=92) than occasional smokers (n=23). The average consumption of cigarettes, first cigarette of the day and quit attempt vary considerably among the smokers. The number of cigarettes smoked per day also varies: 71% smoke less than 20 and 29% smoke more than 20 cigarettes per day (7% smoke more than 30 cigarettes per day). The rate of cigarette consumption also varies among 'daily' and 'occasional' smokers. There were more occasional smokers than daily smokers who smoke less than 10 cigarettes per day (51% vs 49%). In contrast on average daily smokers had more cigarettes (11 or more cigarettes per day) than occasional smokers.

Table 2 reports that of the total 115 smokers about 24% had their first cigarette within 5 minutes after waking, 36% had within 6 to 30 minutes and 40% had a first cigarette 31 minutes or later. Most of the daily smokers had their first cigarette within the first hour after waking. Of those who had their first cigarette more than 60 minutes after waking, 68% were occasional smokers and 32% were daily smokers. About 63% of all smokers had their quit attempt within the last three months (24.3% within the past month and 38.3% between 1 to 3 months). In general a much higher proportion of daily smokers had more quitting attempts than the occasional smokers. About 36% of the respondents indicated that their quit attempt lasted less than one week and for another 36% it had lasted for 1 week to 1 month and for 18% the quit attempt lasted for 1 to 6 months. About 11% reported that their last quit attempt lasted more than 6 months. When asked how sure of success they would be about a decision to give up smoking in the next 6 months, only 4% reported they were extremely sure, 14% were very sure and 34% were moderately sure. About 31% indicated that they were not at all sure and about 17% were slightly sure.

The ex-smokers were also analysed in relation to quit smoking, number of cigarettes smoked a day, the age when last smoked a whole cigarette and the confidence to remain a non-smoker (Table 3). More than 95% indicated that they had stopped smoking recently: 37% within the past month and 58% within the past 3 months. The table shows that about 52% indicated that on average they had smoked more than 21 cigarettes per day while they were still smoking. About 69% had their first cigarette within 30 minutes of waking (26% had their first cigarette within 5 minutes after waking). The majority (51%) of ex-smokers had their last cigarettes at the age of 35 to 44 (22%) and 45 to 54 (29%) years. Less than 5% had their last cigarette before the age of 25 years and 26% had their last cigarette after the age of 55 years. The vast majority of the respondents (64%) indicated that they were either 'very sure' or 'extremely sure' to remain a non-smokers.

In answer to 'At what age did you first smoke a whole cigarette?' 269 people responded to this question and the age of first smoking varied considerably. Figure 1 shows the frequency distribution of the age at which the first cigarette was smoked according to the current smoking status of the respondents. The minimum and maximum age when first started smoking a whole cigarette was found to be 6 and 34 years respectively. While some people started smoking before they reached the age of 12 years, most commenced as teenagers. About 73% of both male and female respondents started smoking between 13 and 19 years old. Sixteen percent of participants started smoking at the age of 12 or earlier. Ex-smokers had the highest number of teenagers compared to daily smokers and occasional smokers (Figure 1).

Table 3 Pattern of quit smoking, number of cigarettes smoke and the confidence of ex-smokers to remain a non-smoker

Question	Response	Number	%
How long ago did you quit smoking?	Within the past month	64	37.4
	Within the past 3 months	99	57.9
	Within the past 6 months	8	4.7
	Total	171	100
On average when you were still smoking, how many cigarettes did you smoke a day?	1-10 cigarettes per day	19	11
	11-20 cigarettes per day	63	36.6
	21-30 cigarettes per day	61	35.5
	31 or more cigarettes per day	29	16.9
	Total	172	100
While you were still smoking, how soon after waking did you usually have your first smoke?	More than 60 minutes	18	10.5
	31-60 minutes	35	20.3
	6-30 minutes	74	43
	5 minutes or less	45	26.2
	Total	172	100
At what age did you last smoke a whole cigarette?	15 to 19	2	1.2
	20 to 24	6	3.5
	25 to 34	32	18.8
	35 to 44	37	21.8
	45 to 54	49	28.8
	55 to 64	31	18.2
	65 years +	13	7.6
	Total	170	100
How confident are you that you will remain a non-smoker?	Not at all sure	4	2.4
	Slightly sure	8	4.9
	Moderately sure	47	28.7
	Very sure	70	42.7
	Extremely sure	35	21.3
	Total	164	100

Figure 1 Frequency distribution of age of first smoke a whole cigarette according to current smoking status of the respondents

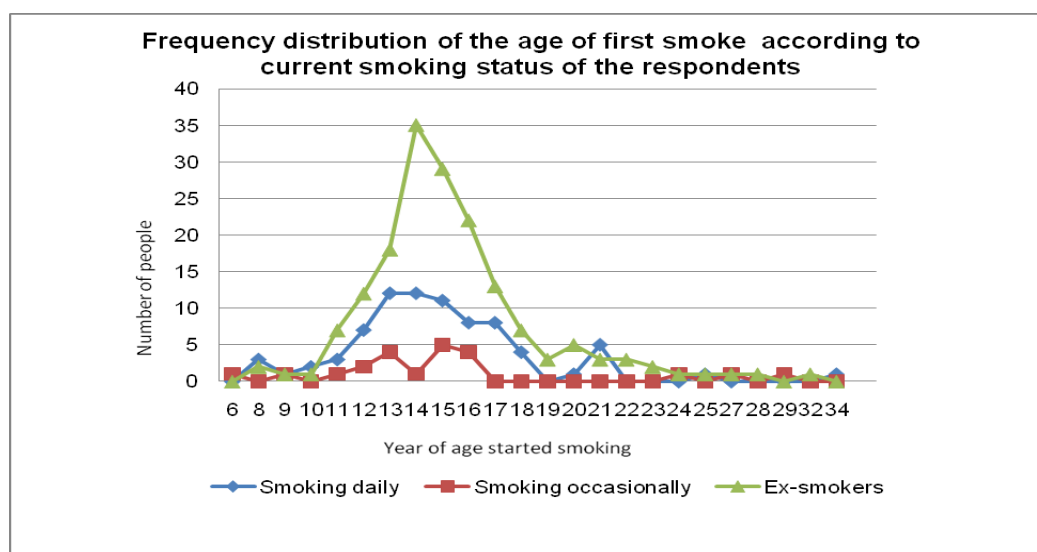


Table 4 Demographic characteristics, BMI, drinking and current health

Categories	BMI Category (%)				Total	Average number of glasses drunk on a typical day (%)				Total	Self-reported current level of health (%)				Total
	Underweight Less than 20.0	Normal 20 to 24.99	Overweight 25.0 to 29.99	Obese 30.0 +		1 or 2	3 or 4	5 or 6	7 or More		V Good/excellent	Good	Fair	V Poor/poor	
EDUCATION															
Primary/high school	4.6	32.1	32.8	30.5	131	32.8	28.2	24.4	14.5	131	26.9	35.6	29.4	8.1	160
Trade/TAFE	5.9	36.8	33.8	23.5	68	33.3	27.3	24.2	15.2	66	30.3	40.8	18.4	10.5	76
Grad/Post grad	17.0	19.1	38.3	25.5	47	50.0	27.5	10.0	12.5	40	31.4	29.4	23.5	15.7	51
Total	7.3	30.9	34.1	27.6	246	35.9	27.8	21.9	14.3	237	28.6	35.9	25.4	10.1	287
EMPLOYMENT															
Full time	7.6	21.7	41.3	29.3	92	31.5	29.2	22.5	16.9	89	27.9	47.1	17.3	7.7	104
Part time	10.3	41.4	20.7	27.6	29	37.9	27.6	27.6	6.9	29	59.4	21.9	15.6	3.1	32
Unemployed	7.7	35.4	30.8	26.2	65	43.9	22.7	21.2	12.1	66	21.7	32.5	33.7	12.0	83
Other	4.9	36.1	32.8	26.2	61	31.5	31.5	20.4	16.7	54	23.2	30.4	31.9	14.5	69
Total	7.3	31.2	34.0	27.5	247	35.7	27.7	22.3	14.3	238	28.5	36.1	25.3	10.1	288
INCOME															
Less than \$350 pw	6.7	33.3	30.0	30.0	90	40.7	24.4	18.6	16.3	86	22.7	30.0	32.7	14.5	110
\$350-\$649 pw	13.3	35.6	35.6	15.6	45	30.0	25.0	35.0	10.0	40	36.0	36.0	26.0	2.0	50
\$650-\$1399 pw	6.6	31.1	32.8	29.5	61	29.8	26.3	28.1	15.8	57	31.8	37.9	18.2	12.1	66
\$1400 +	4.9	22.0	39.0	34.1	41	35.7	35.7	16.7	11.9	42	27.9	46.5	18.6	7.0	43
Total	7.6	31.2	33.3	27.8	237	35.1	27.1	23.6	14.2	225	28.3	35.7	25.7	10.4	269

Table 5 Smoking, BMI category, average drinking and self-reported current health level

Smoking category	Gender	BMI Category (%)				Total	Average number of glasses drunk on a typical day (%)					Total	Self reported current level of health (%)						Total
		(Less than 20.0) Underweight	20 to 24.99 (Normal)	25.0 to 29.99 (Overweight)	30.0 + (Obese)		1 or 2	3 or 4	5 or 6	7 to 9	10 or more		Excellent	Very good	Good	Fair	Poor	Very poor	
Smokers	Male	0.0	48.5	33.3	18.2	33	31.4	20.0	20.0	20.0	8.6	35	2.4	22.0	36.6	24.4	14.6	0.0	41
	Female	12.7	34.9	20.6	31.7	63	48.3	21.7	20.0	5.0	5.0	60	5.4	18.9	28.4	31.1	13.5	2.7	74
	Total	8.3	39.6	25.0	27.1	96	42.1	21.1	20.0	10.5	6.3	95	4.3	20.0	31.3	28.7	13.9	1.7	115
Ex-Smokers	Male	4.8	15.9	54.0	25.4	63	20.7	39.7	24.1	8.6	6.9	58	2.8	26.8	40.8	21.1	8.5	0.0	71
	Female	8.0	32.2	28.7	31.0	87	36.9	27.4	25.0	7.1	3.6	84	11.0	22.0	37.0	25.0	5.0	0.0	100
	Total	6.7	25.3	39.3	28.7	150	30.3	32.4	24.6	7.7	4.9	142	7.6	24.0	38.6	23.4	6.4	0.0	171

Self-reported health and health related life style

When a participant was asked to rate their health, for someone of their age, 22% responded 'very good'; 36% reported 'good', 26% said 'fair'. Only 6% reported that they had 'excellent' health; 9% and 1% 'poor' and 'very poor' health respectively. The self assessment of females was slightly better than males. Within the gender group males and females had a similar health level. About 54% had either 'good' or 'very good' and about 35% had 'fair' or 'poor' health. Eight percent of females had 'excellent' health level compared to 3% of males.

Lifestyle of the participants was also analysed according to level of education, employment status and income. Lifestyle includes Body Mass Index (BMI), average drinking per day and self-reported health of the participants. Results are reported in Table 4. The data shows that respondents with the highest level of education, employed full time and income of more than \$1400 pw were more overweight compared to other groups. The latter two groups and the people with primary/high school education were also found to be more obese than others. The data also indicates that certificate/diploma holders and the people who were either employed full time or not in the labour force and had lower end of income level drank more (7 or more) on a typical day. With regards to self-reported current health graduates, part-time employed and mid level income group people possessed a higher proportion of 'very good' and 'excellent' level of health compared to other groups (Table 4).

Health related lifestyle of respondents was further analysed according to smoking group. Table 5 shows the lifestyle of smokers and ex-smokers according to BMI category, average drinking and self-reported current health level. The data shows that ex-smokers reported more overweight and obese, more medium drinker than smokers. The ex-smoker group also reported higher proportion of good to excellent health compared to smokers.

Table 6 Satisfaction with Life Scale (SWLS) - Descriptive statistics and mean response to questions on a scale from 1=strongly disagree to 5=strongly agree

SWLS -questions	Groups	n	Mean	SE	95% CI for Mean		Min	Max	Sig. Between groups
					LB	UB			
In most ways my life is close to my ideal.	Smokers	108	3.19	.112	2.96	3.41	1	5	.506
	Ex-Smokers	164	3.28	.090	3.10	3.46	1	5	
	Total	272	3.24	.070	3.11	3.38	1	5	
The conditions of my life are excellent.	Smokers	108	3.15	.115	2.92	3.38	1	5	.172
	Ex-Smokers	165	3.34	.084	3.17	3.51	1	5	
	Total	273	3.26	.068	3.13	3.40	1	5	
I am satisfied with my life.	Smokers	112	3.38	.101	3.18	3.58	1	5	.274
	Ex-Smokers	168	3.52	.080	3.37	3.68	1	5	
	Total	280	3.47	.063	3.34	3.59	1	5	
So far I have gotten the important things I want in life.	Smokers	108	3.60	.112	3.38	3.82	1	5	.905
	Ex-Smokers	164	3.59	.084	3.42	3.75	1	5	
	Total	272	3.59	.067	3.46	3.72	1	5	
If I could live my life over, I would change almost nothing.	Smokers	108	2.84	.131	2.58	3.10	1	5	.260
	Ex-Smokers	165	3.03	.104	2.83	3.24	1	5	
	Total	273	2.96	.081	2.80	3.12	1	5	

Table 7 Personal Wellbeing Index- Descriptive statistics and mean response

How satisfied are you with (0 = completely dissatisfied; 5 = neutral; 10 = completely satisfied)	Groups	N	Mean	SE	95% CI for Mean		Min	Max	Sig. Between groups
					LB	UB			
					your life as a whole?	Smokers Ex-Smokers Total			
your health?	Smokers Ex-Smokers Total	111 170 281	4.59 5.55 5.17	.263 .200 .161	4.06 5.15 4.85	5.11 5.94 5.49	0 0 0	10 10 10	.003
what you are achieving in life?	Smokers Ex-Smokers Total	113 170 283	5.58 6.12 5.90	.253 .185 .151	5.07 5.75 5.60	6.08 6.48 6.20	0 0 0	10 10 10	.078
your personal relationships?	Smokers Ex-Smokers Total	113 170 283	6.58 6.82 6.72	.270 .208 .165	6.04 6.41 6.40	7.11 7.23 7.05	0 0 0	10 10 10	.462
how safe you feel?	Smokers Ex-Smokers Total	112 170 282	6.79 7.33 7.11	.269 .171 .149	6.25 6.99 6.82	7.32 7.67 7.41	0 0 0	10 10 10	.074
feeling part of your community?	Smokers Ex-Smokers Total	113 169 282	5.91 6.18 6.07	.259 .183 .151	5.40 5.82 5.77	6.42 6.54 6.37	0 0 0	10 10 10	.389
with your future security?	Smokers Ex-Smokers Total	113 168 281	5.21 5.90 5.63	.279 .203 .166	4.66 5.50 5.30	5.77 6.31 5.95	0 0 0	10 10 10	.041
your spirituality or religion?	Smokers Ex-Smokers Total	112 169 281	6.36 6.62 6.52	.291 .198 .166	5.78 6.23 6.19	6.93 7.01 6.84	0 0 0	10 10 10	.438
your standard of living?	Smokers Ex-Smokers Total	112 170 282	5.90 6.64 6.35	.257 .182 .151	5.39 6.28 6.05	6.41 7.00 6.65	0 0 0	10 10 10	.016

Participants' life satisfaction, personal wellbeing, self confidence, anxiety were also analysed according to smoking groups. Participants' mean responses for each item or health related statements are reported in Tables 6 to 9. Average rating (more than 3 out of 5) in most cases indicates that participants were satisfied with their life and achieved the important things they wanted. The highest mean score for the respondents was found in the items that they had gotten the important things they wanted in life. The only category in which respondents disagreed more than they agreed (mean score less than 3) was whether they would change anything if they had to live their lives over again (Table 6). Although the ex-smokers were more satisfied than smokers, no statistical significant difference was found between the two groups.

Average score in most of the items (more than 5 out of 10) of PWI indicates that participants were satisfied with statements of PWI. The strongest level of dissatisfaction was reserved by respondents for their own health and future security. The strongest level of satisfaction was for how safe people felt (Table 7). Again ex-smokers were found more satisfied than the smokers. There were statistically significant differences in mean score between two groups in the items of whole life, own health, future security and standard of living.

Mean score (less than 3) in self-confidence, work performance and overall quality of life questions reveals that participants had somewhat or a lot better than a year ago with self-confidence items. Confidence in relating to other people in social situation was scored lowest while the amounts of

energy participants get rated highest by the respondents (Table 8). Smokers had the worst, ex-smokers had the better outcomes (except relating to other people) in most items of self-confidence questions. Statistically significant difference in mean was found between two groups in four of seven items (Table 8).

Table 8 Descriptive statistics and mean response to confidence, ability, energy, physical health, work performance and overall quality of life questions on a scale from 1= a lot better than a year ago to 5= a lot worse than a year ago

Thinking about the past week, how would you rate the following compared to how things were about a year ago?	Groups	n	Mean	SE	95% CI for Mean		Min	Max	Sig. Between groups
					LB	UB			
Your confidence in relating to other people in social situations	Smokers	113	2.56	.081	2.40	2.72	1	5	.840
	Ex-Smokers	169	2.58	.072	2.44	2.72	1	5	
	Total	282	2.57	.054	2.46	2.68	1	5	
Your ability to concentrate	Smokers	113	2.88	.082	2.72	3.05	1	5	.514
	Ex-Smokers	170	2.82	.064	2.69	2.94	1	5	
	Total	283	2.84	.050	2.75	2.94	1	5	
Your ability to cope with stress	Smokers	113	2.97	.095	2.78	3.16	1	5	.141
	Ex-Smokers	170	2.81	.067	2.67	2.94	1	5	
	Total	283	2.87	.056	2.76	2.98	1	5	
the amount of energy you have	Smokers	113	3.27	.092	3.08	3.45	1	5	.000
	Ex-Smokers	170	2.70	.081	2.54	2.86	1	5	
	Total	283	2.93	.063	2.80	3.05	1	5	
Your physical health	Smokers	113	3.20	.086	3.03	3.37	1	5	.000
	Ex-Smokers	170	2.68	.079	2.52	2.83	1	5	
	Total	283	2.89	.061	2.77	3.01	1	5	
Your work performance	Smokers	108	2.93	.096	2.74	3.12	1	5	.038
	Ex-Smokers	165	2.67	.076	2.52	2.82	1	5	
	Total	273	2.77	.060	2.66	2.89	1	5	
Your overall quality of life	Smokers	113	2.93	.089	2.75	3.10	1	5	.001
	Ex-Smokers	170	2.54	.071	2.39	2.68	1	5	
	Total	283	2.69	.057	2.58	2.80	1	5	

Participants' anxiety was also analysed between smokers and ex-smokers. The mean score indicates that participants expressed their highest level of satisfaction (mean = 3.98) in solving their problems and strongest level of concern (mean =2.04) to get along with other people. Again ex-smokers had little of the time or none of the time anxiety in most of the items of anxiety questions and significant statistical difference was found in 6 items out of 11 items between two groups (Table 9).

Table 9 Descriptive statistics and mean response to anxiety questions on a scale from 1= all of the time to 5= none of the time

Anxiety questions – ‘How often in the past week ...’	Groups	n	Mean	SE	95% CI for Mean		Min	Max	Sig. Between groups
					LB	UB			
Were you irritable toward those around you?	Smokers	113	3.46	.087	3.29	3.63	1	5	.197
	Ex-Smokers	170	3.60	.066	3.47	3.73	1	5	
	Total	283	3.54	.053	3.44	3.65	1	5	
Did you get along well with other people?	Smokers	113	2.05	.074	1.91	2.20	1	5	.755
	Ex-Smokers	170	2.02	.060	1.91	2.14	1	5	
	Total	283	2.04	.046	1.94	2.13	1	5	
Did you have difficulty concentrating?	Smokers	113	3.44	.084	3.28	3.61	1	5	.024
	Ex-Smokers	170	3.70	.074	3.55	3.85	1	5	
	Total	283	3.60	.056	3.49	3.71	1	5	
Were you obsessed by thoughts of smoking?	Smokers	113	3.06	.121	2.82	3.30	1	5	.000
	Ex-Smokers	169	4.11	.072	3.96	4.25	1	5	
	Total	282	3.69	.072	3.55	3.83	1	5	
Did you have difficulty thinking and solving problems?	Smokers	113	3.72	.098	3.52	3.91	1	5	.000
	Ex-Smokers	170	4.15	.070	4.01	4.29	1	5	
	Total	283	3.98	.059	3.86	4.09	1	5	
Did you feel restless, unsettled or jittery?	Smokers	112	3.33	.102	3.13	3.53	1	5	.004
	Ex-Smokers	170	3.71	.079	3.55	3.86	1	5	
	Total	282	3.56	.064	3.43	3.68	1	5	
Did you have difficulty remembering things?	Smokers	113	3.50	.101	3.30	3.71	1	5	.001
	Ex-Smokers	169	3.91	.076	3.76	4.05	1	5	
	Total	282	3.74	.062	3.62	3.87	1	5	
Did you have trouble falling asleep?	Smokers	113	3.33	.129	3.07	3.58	1	5	.207
	Ex-Smokers	170	3.53	.098	3.34	3.72	1	5	
	Total	283	3.45	.078	3.29	3.60	1	5	
Did you awaken during the night and have trouble falling asleep again?	Smokers	113	3.37	.129	3.12	3.63	1	5	.703
	Ex-Smokers	170	3.31	.095	3.12	3.50	1	5	
	Total	283	3.34	.077	3.18	3.49	1	5	
Did you get the amount of sleep you needed?	Smokers	113	3.06	.106	2.85	3.27	1	5	.494
	Ex-Smokers	170	3.16	.091	2.98	3.34	1	5	
	Total	283	3.12	.069	2.98	3.26	1	5	
Did you feel anxious or worried?	Smokers	113	3.23	.117	3.00	3.46	1	5	.000
	Ex-Smokers	170	3.72	.077	3.57	3.88	1	5	
	Total	283	3.53	.067	3.39	3.66	1	5	

Comparisons of the instruments and quality of life

To explore the relationships between quality of life and the prevalence of smoking, a QoL score was calculated, as described earlier, using equation (1) for both the AQoL-8D and EQ-5D.

Figure 2 indicates that when using the EQ-5D, 85 out of 287 respondents had full health and another 76 people had close to full health. The numbers for AQoL-8D were 2 and 43 respectively. The great majority of those who report close to full health on the EQ-5D report poorer health with AQoL-8D. This is also reflected in Figure 2.

Further analysis of the scores indicates the sensitivity of these two instruments. Figures 3 to 5 show the frequency distribution of different levels of score when a particular instrument measures excellent or full health.

Figure 2 Comparison of AQoL-8D and EQ-5D scores by deciles

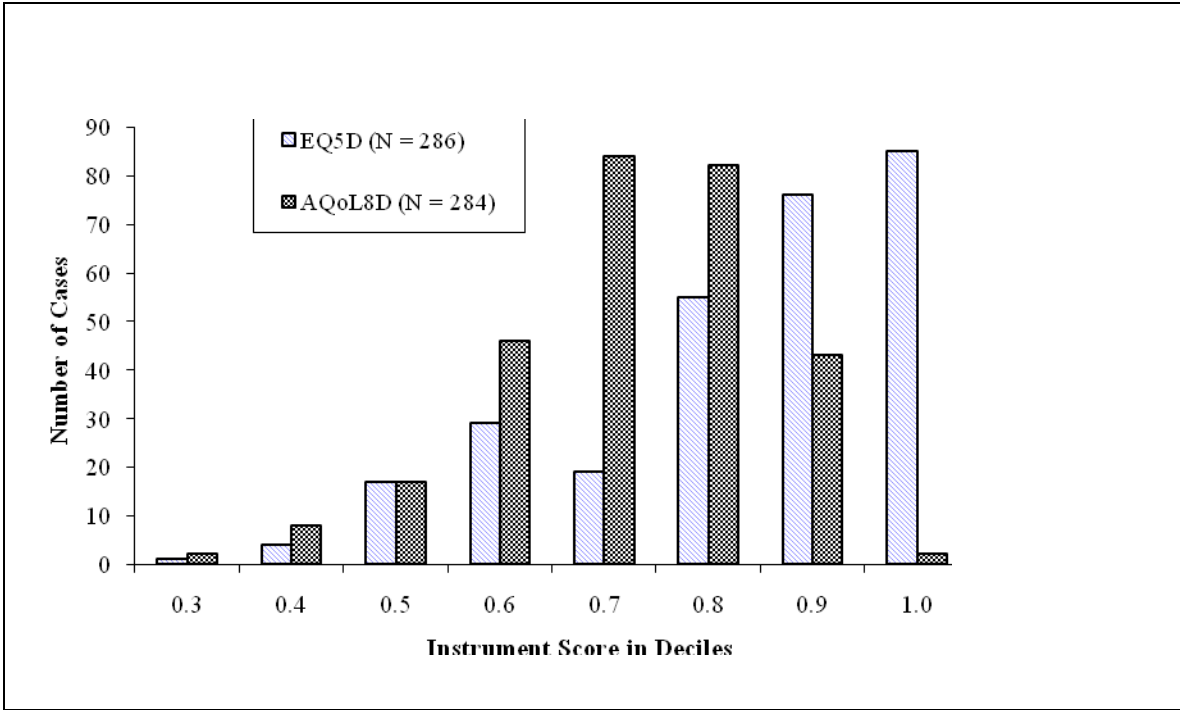


Figure 3 EQ-5D (n=127) Frequency distribution when the AqoL-8D score is 0.8 and above

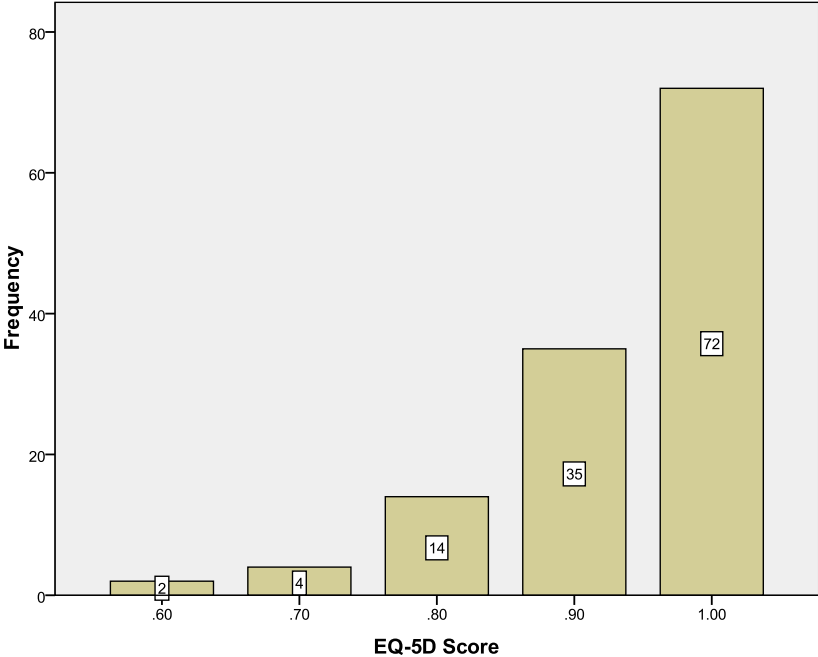


Figure 4 AqoL- 8D (n=216) Frequency distribution when the EQ-5D score is 0.8 and above

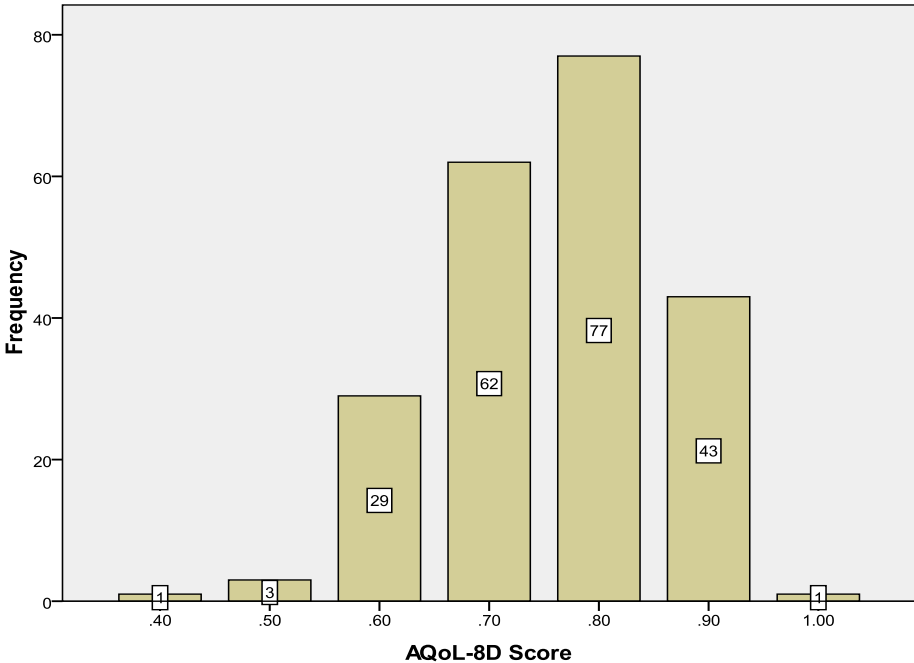
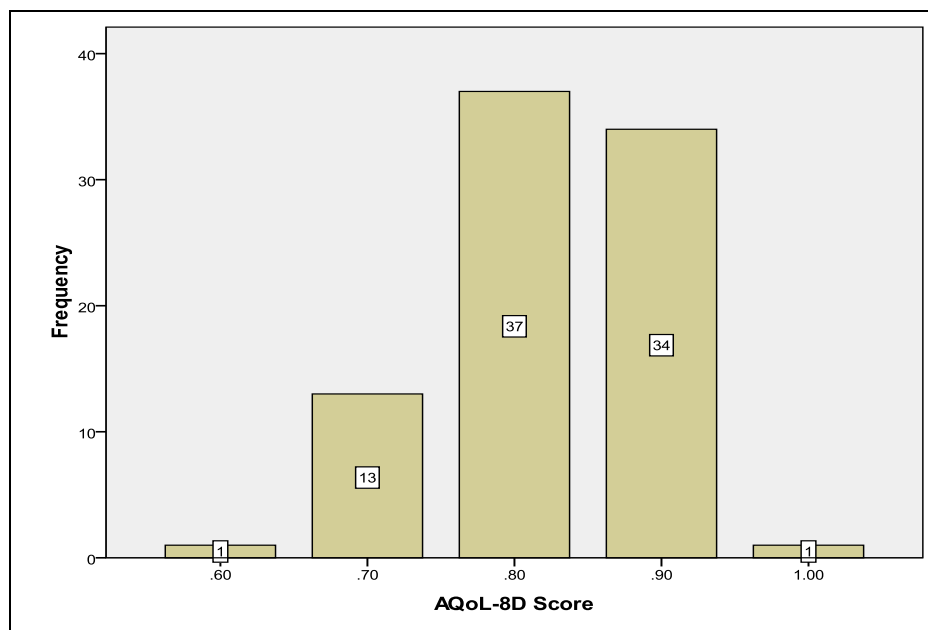


Figure 5 AQoL- 8D (n=86) Frequency Distribution when EQ-5D = 1



Bivariate correlation analysis was conducted (Table 10) to determine the correspondence between these two instruments, SWLS (questions in Table 6), and three of the other summary questions, namely questions 1 and 2 in Table 7 (satisfaction with life as a whole; with health) and the final question in Table 8 (overall, self rated QoL).

Table 10 Correlation between indices of QoL

Index	1	2	3	4	5	6
1. AQoL 8D	1.00					
2. EQ5D	.702	1.00				
3. PWI (life) (1)	.614	.290	1.00			
4. PWI (health) (2)	.503	.453	.532	1.00		
5. SWLS (3)	.543	.336	.675	.406	1.00	
6. Overall QoL (4)	.355	.342	.265	.311	2.86	1.00

Notes: (1) question 16 a; (2) question 16 b; (3) sum of rankings question 15; (4) question 17 g; (see Appendix 2)

One-way analyses of variance were also conducted to explore the relationship between smoking status, age and QoL instrument scores (Table 11).

While the ANOVA revealed a significant difference between the three smoking status groups the absolute difference in mean scores was quite small. Post-hoc comparison using the Tukey HSD test also indicated that the mean score for smoking daily was significantly different from the ex-smoker group. The 'smoking occasionally' group did not differ significantly from either smoking daily or ex-smoker groups.

Data were also analysed according to smoking intensity of the participants. The rate of smoking intensity for both smokers and ex-smokers was classified into three categories: (i) light smokers (1 to 10 cigarettes per day); (ii) moderate smokers (11 to 20 cigarettes per day); and (iii) heavy

smokers (21+ cigarettes per day). Comparisons of smoking intensity by current and past smokers are reported in Appendix 3 (Tables 14 and 15). ANOVA reveals statistically significant difference in three of the four measures of QoL.

The analysis of ages in the AQoL-8D and EQ-5D scores indicated no statistically significant difference between groups. The only significant difference (0.5 level) was between Group 3 (25 to 34 years) and Group 6 (55 to 64 years) using the EQ-5D scores.

Table 11 Statistics for QoL and smoking status of the participants (One way ANOVA)

QoL Instruments	Smoking Status	N	Mean	SE	95% Confidence Interval for Mean		Min	Max	F	Sig
					Lower Bound	Upper Bound				
AQoL-8D (Psychometric) Score	Smoking daily	89	.68	.02	.65	.71	.33	.96	5.94	0.003
	Smoking occasionally	22	.71	.02	.66	.76	.51	.87		
	Ex-smokers	171	.74	.01	.72	.75	.28	.94		
	Total	282	.72	.01	.70	.73	.28	.96		
EQ-5D Score	Smoking daily	92	.79	.02	.75	.83	.30	1.00	6.17	0.002
	Smoking occasionally	23	.83	.03	.76	.90	.50	1.00		
	Ex-smokers	172	.86	.01	.84	.88	.40	1.00		
	Total	287	.84	.01	.82	.86	.30	1.00		

In contrast a significant statistical difference was found between AQoL-8D and EQ-5D scores ($p = .001$) between smokers and ex-smokers. The mean for AQoL-8D was 0.68 and 0.18 for EQ-5D.

Effect of smoking on health

In order to further examine the relationship between smoking and quality of life participants were divided into two groups: (i) smokers (smoking daily or occasionally); and (ii) ex-smokers.

Health quality on each scale was divided into four categories: (i) very poor (0 to 0.40); (ii) poor (0.41 to 0.60); (iii) average (0.61 to 0.80); and (iv) very good (0.81 to 1.00).

Table 12 shows the relationship between these two scales. The two instruments produced distinct results. Using the AQoL-8D, 54% had average health and 26% had good health. In contrast, according to the EQ-5D, 25% of the participants were measured with average health, and 57% had excellent health. In the same sample, the EQ-5D measured twice the percentage in good health as was measured by the AQoL-8D and less than half the percentage in average health. This may be indicative of a poorer discriminatory power of the EQ-5D.

Table 12 Relationships between the prevalence of smoking and QoL according to AQoL-8D and EQ-5D

QoL instruments	Quality of Life Categories (Score from formula 1)	Smoking category		Total
		Smokers	Ex-smokers	%
		%	%	
AQoL8D	Very Poor Health (0 - 0.40)	3.6	2.3	2.8
	Poor Health (0.41 - 0.60)	28.8	9.4	17
	Average Health (0.61 - 0.80)	47.7	57.9	53.9
	Good Health (0.81 - 1.00)	19.8	30.4	26.2
	Total number	111	171	282
EQ5D	Very Poor Health (0 - 0.40)	3.5	0.6	1.7
	Poor Health (0.41 - 0.60)	24.3	10.5	16
	Average Health (0.61 - 0.80)	25.2	25	25.1
	Good Health (0.81 - 1.00)	47	64	57.1
	Total number	115	172	287

In general the 'ex-smoker' group had a higher QoL than current smokers. The EQ-5D indicated that the percentage with average health was the same for both categories (25%), whereas the AQoL-8D, measuring the same sample, showed 48% of smokers and 58% of ex-smokers had average health.

Both instruments measured more ex-smokers with good health than smokers. In the same sample, the EQ-5D showed that 64% of ex-smokers were in good health compared to 30% measured by the AQoL-8D. The percentage of smokers measured with good health by the EQ-5D seems rather high (47%). The AQoL-8D was developed to be particularly sensitive in the better health levels and shows that only 20% of the same sample enjoyed good health.

Self-reported current health level of participants indicate 24% of smokers and 32% of ex-smokers had good health (Table 13).

Table 13 Self reported current health level of the participants when asked how you would rate your current level of health for someone of your age

Self-reported current health level ('for someone your age')	Smoking category		Total
	Smokers (n=115)	Ex-smokers (n=171)	
	%	%	%
Good	24.3	31.6	28.7
Average	31.3	38.6	35.7
Poor	28.7	23.4	25.5
Very poor	15.6	6.4	10.1

Body Mass Index (BMI) and QoL score

Respondents were also classified on the basis of BMI score: underweight (below 20); Normal (20 to 24.99); overweight (25 to 29.99); and obese (30 and above). The data reveals that 61.5% of the participants were either overweight (33.5%) or obese (28%). About 32% were within the normal range and 7% were underweight. Females had lower BMI. Among females 34% were within the normal range of BMI (compared to 28% of males), 25.5% were overweight (45.3% of males) and 31.2% were obese (23.2% of males). About 9% of females and 3% of males were found to be underweight (Table 4).

No significant correlation was found between BMI and QoL scores.

Summary

This paper examines the quality of life of both smokers and ex-smokers. The study is based on QuitQoL baseline survey of 292 respondents – 61% female and 39% male. The data reveals that of the total respondents 60% were quitters, 32% daily smokers and 8% occasional smokers. There were more female daily smokers than males but more male quitters than females. People aged 45 to 64 years and with undergraduate qualifications were the most quitters (64%) and people with high school qualification and aged 65+ years were the most daily smokers. Lower SES people had higher proportion of daily smokers which is consistent with the findings of other studies (Harper and Lynch 2007; Hill et al. 2005; Huiman et al. 2005; Kanjilal et al. 2006).

The study reveals that about 73% of both male and female respondents started smoking as teenagers (13 to 19 years). Ex-smokers teenagers proportion was higher than daily or occasional smokers (Figure 1). Peers and friends had an important influence on the start of their smoking as teenagers. Smoking consumption and intensity was quite high among the respondents. About 33% smoke 10 or less a day, 37% smoke 11 to 20, 23% smoke 21 to 30 and 7% smoke 31 and more cigarettes. One quarter of all smokers had their first smoking within 5 minutes, 36 percent had within 6 to 30 minutes and 40% had 31 minutes or later of waking up. The average daily consumption of less number of cigarettes was higher among males but higher consumption was found among the females.

Most of the smokers (63%) had their quit attempt within the last three months. Quit attempts lasted from a minimum of less than a week to a maximum of more than 6 months: 36% lasted less than a week, 36% for 7 to 30 days for; 18% for 1 to 6 months; and 11% for more than 6 months. More than 95% of the ex-smokers indicated that they stopped smoking recently – within the last three months. More than half (52%) of the ex-smokers had 21 or more cigarettes per day while they were smoking. About 69% had their first cigarette within 30 minutes of waking up.

Analysis of self-reported health and health related lifestyle indicated that the vast majority of the respondents (64%) reported excellent, very good or good health. Females reported better health than males. Respondents with highest level of education, full time employment and income of more than \$1400 pw were more overweight. More people with high school qualifications along with full time employment and income of more than \$1400 were more obese. When analysed further ex-smokers were found more overweight and obese, had more medium drinkers, and were healthier than smokers. Males were more overweight than females. All these findings indicate that quitting cigarettes are closely associated with health related quality of life and play a significant role in improving quality of life of general public.

The analysis of respondents' life satisfaction, personal wellbeing, self-confidence and anxiety reveals that participants were reasonably satisfied with their life and had no serious anxiety in their life. In general ex-smokers had more satisfaction or less anxiety than smokers according to SWLS, PWI, self-confidence and anxiety MA instruments. The statistical analysis confirmed significant difference (except SWLS) of mean outcome and levels of satisfaction and anxiety between smokers and ex-smokers in most of the items of the above instruments. The analysis of smoking status and smoking intensity of the respondents indicates that all the instruments (including AQoL-8D and EQ-5D) were appropriate in indentifying and measuring smoking related quality of life. Bivariate correlation analysis reveals AQoL-8D had highest correlations with most of the measures or items (Table 10).

Comparison of two instruments indicates that the EQ-5D scored very good health (0.9-1.0) in many more cases than the AQoL-8D (Figure 2). The original AQoL-4D was found to lack sensitivity when measuring good health hence was not able to measure improvements to a better health state with much sensitivity. The AQoL-6D was designed to capture improvements to better health and to be sensitive when measuring good health. The AQoL-8D incorporates the AQoL-6D and demonstrates the upper sensitivity in Figures 3, 4 and 5.

When the AQoL-8D scores between 0.8 and 1.0 (n=127), EQ-5D generally scores full, or close to full, health (Figure 3). Figure 4 shows much lower and more distributed values achieved by AQoL-8D when the EQ-5D scores between 0.8 and 1.0. When the EQ-5D indicates full health (Figure 5), the AQoL-8D measures a widespread distribution of values down to 0.6, indicating a greater sensitivity range.

The relationships between these two instruments in examining the effect of smoking on health also produced similar results. The EQ-5D figure for excellent health (57%) was more than double the result from the AQoL-8D instrument reflecting poor discriminatory power of the EQ-5D. In general the ex-smoker group had a higher quality of life than current smokers. In the smoking group, a similar percentage (47%) was shown as very good health by AQoL-8D but as excellent health by EQ-5D (Table 12).

Ex-smokers showed a marked improvement to excellent health in both instruments. Again, the EQ-5D scored nearly two-thirds in excellent health, more than double the AQoL-8D number for excellent health and more than that for very good health according to the AQoL-8D.

Self-reported current health level of participants indicates 24% of smokers and 32% of ex-smokers had very good and excellent health (Table 13).

Conclusion

This research paper has reported the base data for the analysis of participants in the QUIT program. More respondents are to be added to the database and changes through time analysed. The results will be published at a future date.

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Appendix 1 Explanatory Statement and Consent Form



EXPLANATORY STATEMENT

Full Project Title:

“Benefit Measurement for Health Economic Evaluation and its Application to Priority Health Programs”

Monash University **CF08/1657-2008000813** **Version 5** **Dated 17 October 2008**

This study is being conducted by The Centre for Health Economics (CHE) at Monash University and the VicHealth Centre for Tobacco Control at the Cancer Council of Victoria (CCV).

The chief investigators are:

Prof Jeff Richardson, CHE (Tel: 99058344, Email: jeff.richardson@buseco.monash.edu.au)

Prof Ron Borland, CCV (Tel: 9635 5185, Email: Ron.borland@cancervic.org.au).

The aims of this study are to

- investigate quality of life and smoking behaviour particularly the process of quitting
- develop a questionnaire to collect information about quality of life and the experience with quitting, as well as demographic information (year of birth, education and employment status, etc)

It is expected that the outcome of the study will provide better understanding about the affect of smoking and quitting on people’s quality of life. It will also stimulate researchers to develop strategies to help smokers quit.

Participation will involve completing the same questionnaire 4 times: now and in 3, 6 and 12 months time. The questionnaire is simple and will take about **20 minutes to complete.**

You will be remunerated \$50 (as a voucher for a supermarket or hardware chain) **after completing the questionnaire 4 times.**

Participation in this study is voluntary and you may refuse to answer any questions or withdraw at any time. There are no risks associated with completing the questionnaire. All the information collected by the project will remain confidential and seen only by the researchers involved. Participants will not be identified in any publication.

It is expected the results of the study will be published in the form of reports and journal articles and will be available on the Monash Centre for Health Economics website at: <http://www.buseco.monash.edu.au/centres/che/> in late 2009.

If you have any complaints or concerns about the manner in which this research is being conducted, you may contact:

Ms Woody Macpherson, Research Management Unit, Cancer Council Victoria, (03)96355100.

Alternatively, you may contact: Executive Officer, Standing Committee on Ethics in Research Involving Humans (SCERH), Monash University, Tel: (03) 9905 2052 (**Project Number: 20008000813**)

If you agree to participate in the study, please sign the consent form and proceed to the questionnaire.

QuitQoL Version 5 Dated 17 October 2008



ID.....

CONSENT FORM

Monash University **CF08/1657-2008000813** *Version 5 Dated 17 October 2008*

Full Project Title:

"Benefit Measurement for Health Economic Evaluation and its Application to Priority Health Programs"

Chief Investigators: Prof Jeff Richardson, Prof Ron Borland

Aim of the Study; To investigate quality of life and smoking behaviour particularly the process of quitting and to develop a questionnaire to collect information about quality of life and the experience with quitting

Consent:

- I have read the Explanatory Statement and Consent Form **version 5 dated 17 October 2008**. I agree to take part in the Monash University research project specified. I understand that agreeing to take part means that I agree to answer questions about smoking behaviour and routine lifestyle.
- I understand that the questionnaire will need to be completed on 4 occasions over the next 12 months.
- I understand that my participation is voluntary, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.
- I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.
- I understand that data from this online interview/postal survey will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

I have had all my questions concerning my involvement in the project answered to my satisfaction, and if I have any questions in future I can contact one of the chief investigators mentioned in the Participant Information.

Please sign here

Participant name (printed).....

Signature **Date**

Researchers/Witness Name (printed)

Researchers/Witness Signature.....**Date**.....

Appendix 2 QuitQoL Questionnaire

QuitQoL Questionnaire

Please return to:

Prof Jeff Richardson

Centre for Health Economics

Monash University Clayton VIC 3800

Phone: (03) 9905 8413

(v8-241008)

Some questions about yourself

1. You are: Male Female
2. In what year were you born? 19_____
3. Where were you born? Australia Other.....
4. How well do you understand/speak English? *Please tick one box:*
- Very well Not Well Not at all
5. What is your postcode? _____
6. What is your current smoking status?
- smoking daily - *go to question 6a, 6b, 6c, 6d, 6e, 6j, 6l, 6m*
 - smoking occasionally - *go to question 6a, 6b, 6c, 6d, 6e, 6j, 6l, 6m*
 - now quit - *now answer questions 6f, 6g, 6h, 6i, 6j, 6l, 6m*
 - never smoked - *go to question 6k, 6l, 6m*
- 6a. On average, how many cigarettes do you smoke a day?
- [answer this question if you answered 'smoking daily' or 'smoking occasionally' to question '6']*
- 1-10 cigarettes per day
 - 11-20 cigarettes per day
 - 21-30 cigarettes per day
 - 31 or more cigarettes per day
- 6b. How soon after waking do you usually have your first smoke?
- [answer this question if you answered 'smoking daily' or 'smoking occasionally' to question '6']*
- more than 60 minutes
 - 31-60 minutes
 - 6-30 minutes
 - 5 minutes or less
- 6c. When, if ever, did you make your last quit attempt?
- [answer this question if you answered 'smoking daily' or 'smoking occasionally' to question '6']*
- within the past month
 - between 1 to 3 months
 - between 4 to 6 months
 - between 6 months to 1 year
 - between 1 to 2 years
 - more than 2 years ago
 - never tried
- 6d. How long were you quit for on your last quit attempt?
- [answer this question if you answered 'smoking daily' or 'smoking occasionally' to question '6']*
- less than 1 week
 - between 1 week to 1 month

-
- between 1 to 6 months
 - more than 6 months

6e. If you decided to give up smoking completely in the next 6 months, how sure are you that you would succeed? *[Only answer this question if you answered 'smoking daily' or 'smoking occasionally' to question '6']*

Please tick one box

- Not at all sure
- Slightly sure
- Moderately sure
- Very sure
- Extremely sure

6f. How long ago did you quit smoking?

[answer this question if you answered 'now quit' to question 6]

- within the past month
- within the past 3 months
- within the past 6 months
- more than one year ago

6g. On average when you were still smoking, how many cigarettes did you smoke a day?

[answer this question if you answered 'now quit' to question '6']

- 1-10 cigarettes per day
- 11-20 cigarettes per day
- 21-30 cigarettes per day
- 31 or more cigarettes per day

6h. While you were still smoking, how soon after waking did you usually have your first smoke?

[answer this question if you answered 'now quit' to question '6']

- more than 60 minutes
- 31-60 minutes
- 6-30 minutes
- 5 minutes or less

6i. At what age did you last smoke a whole cigarette? _____

[answer this question if you answered 'now quit' to question '6']

6j. At what age did you first smoke a whole cigarette? _____

6k. How confident are you that you will remain a non-smoker? *[Only answer this question if you answered 'now quit' or 'never smoked' to question '6'] Please tick one box*

- Not at all sure
- Slightly sure
- Moderately sure
- Very sure
- Extremely sure

6l. Are you currently using any stop-smoking medications? *Please choose all that apply to you*

- Nicotine gum
- nicotine patch
- Nicotine lozenges
- Nicotine (sublingual) tablets
- Nicotine inhaler
- Nicotine nasal spray
- Zyban (or bupropion)
- Wellbutrin
- Champix (varenicline)
- None
- Other -----

6m. In the last week, how often did you get strong urges to smoke? *Please tick one box*

- Never
- Less than daily
- Daily
- Several times a day
- Hourly or more often

7. How TRUE or FALSE is each of the following statements for you?

Please tick the box that is correct for you

a) I have very little willpower in regard to smoking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I am in control of whether I smoke or not.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I am worried that I will smoke in the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The urge to smoke overwhelms me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Currently what is the highest level of education you have reached (even if not completed)?

Please tick one box:

- Postgraduate Degree
- Graduate Diploma
- Bachelor --> specify course _____
- Advanced Diploma
- Certificate -->specify course _____
- Completed Year 12 or equivalent
- High school --> year completed _____
- Primary school

9. Which best describes your current work situation? *Please tick one box*

- Full time: self-employed or employee Not in the labour force/retired/pensioner
- Part time or casual: self-employed or employee Full-time carer
- Unemployed, seeking work Student
- Other --> please describe _____

10. Tick the box corresponding to your pre-tax or gross household income (include all sources)

- below \$150pw (less than \$7799pa)
- \$151 - 349pw (\$7,800-18,199pa)
- \$350 - 649pw (\$18,200-33,799pa)
- \$650 - 1399pw (\$33,800-72,799pa)
- \$1400-1999pw (\$72,800-103,999pa)
- above \$2000pw (above \$104,000pa)

11. Are you the main wage-earner in your household?

Yes No

12. How would you rate your current level of health, for someone of your age?

- Excellent Very good Good Fair Very poor

13. Do you currently have a significant illness?

- No
- Yes Name of illness: _____

14. Which of the following best describes you: *Please tick one box*

- I generally enjoy novelty and change
- I generally cope with change but don't really enjoy it
- I sometimes find adapting to change difficult
- I generally find adapting to change difficult

I try to avoid change wherever I can

15. For each item, tick the box that best describes your situation NOW

	Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a) a) In most ways my life is close to my ideal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) b) The conditions of my life are excellent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) c) I am satisfied with my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) d) So far I have gotten the important things I want in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) e) If I could live my life over, I would change almost nothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. The following questions ask how satisfied you feel On a scale from zero to 10. **Zero** means you feel completely dissatisfied. **10** means you feel completely satisfied. And the **middle of the scale is 5**, which means you feel neutral, neither satisfied nor dissatisfied.

[Please tick the box for each item that is correct for you]

	0	1	2	3	4	5	6	7	8	9
a) Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) How satisfied are you with your health?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) How satisfied are you with what you are achieving in life?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) How satisfied are you with your personal relationships ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) How satisfied are you with how safe you feel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) How satisfied are you with feeling part of your community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) How satisfied are you with your future security ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) How satisfied are you with your spirituality or religion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) How satisfied are you with your standard of living?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Thinking about the past week, how would you rate the following compared to how things were about a year ago?

[Please tick the box for each item that is correct for you]

	much better than a year ago	Somewhat better	Much the same	Somewhat worse	A lot worse than a year ago
a) Your confidence in relating to other people in social situations <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Your ability to concentrate <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Your ability to cope with stress <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) the amount of energy you have <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) your physical health <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

f) your work performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) your overall quality of life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18 How often in the past week...

[Please tick the answer that is correct for you]

		All of the time	Most of the time	Some of the time	A little of the time	None of the time
a) were you irritable towards those around you?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) did you get along well with other people?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) did you have difficulty concentrating?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) were you obsessed by thoughts of smoking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) did you have difficulty thinking and solving problems?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) did you feel restless, unsettled or jittery?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) did you have difficulty remembering things?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) did you have trouble falling asleep?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) did you awaken during the night and have trouble falling asleep again?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) did you get the amount of sleep you needed?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) did you feel anxious or worried?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tick the box in each group below, that best describes your own health state today

19. Mobility

- I have no problem in walking about
- I have some problem in walking about
- I am confined to bed

20. Self - care

- I have no problem with self-care.
- have some problems with washing and dressing myself
- I am unable to wash and dress myself.

21. Usual Activities

- I have no problem with performing my usual activities.
- have some problem with performing my usual activities.
- I am unable to perform my usual activities.

22. Pain/Discomfort

- I have no pain or discomfort.
- I have moderate pain or discomfort.
- I have extreme pain or discomfort.

23. Anxiety/Depression

- I am not anxious or depressed.
- I am moderately anxious or depressed.
- I am extremely anxious or depressed.

Tick the box that best describes your situation as it has been over the past week

24. Thinking about the past week, how much of your time has been taken up dealing with things that are not part of your normal routine?

- Nearly all the time - everything has been different
- Most of the time
- Some of the time
- A little

33. Thinking about how often you experience serious pain, you experience it:

- Very rarely
- Less than once a week
- Three to four times a week
- Most of the time
- Cannot do any

34. How much confidence do you have in yourself?

- Complete confidence
- A lot
- A moderate amount
- A little
- None at all

35. When you think about whether you are calm and tranquil or agitated, are you:

- Always calm and tranquil
- Usually calm and tranquil
- Sometimes calm and tranquil, sometimes agitated
- Usually agitated
- Always agitated

36. Thinking about your health and your relationship with your family:

- My role in my family is unaffected by my health
- There are some parts of my family role I cannot carry out
- There are many parts of my family role I cannot carry out
- I cannot carry out any part of my family role

37. Your close relationships (family and friends) are:

- Very satisfying
- Satisfying
- Neither satisfying nor dissatisfying
- Dissatisfying
- Unpleasant
- Very unpleasant

38. When you communicate with others, e.g. by talking, listening, writing or signing:

- I have no trouble speaking to them or understanding what they are saying
- I have some difficulty being understood by people who do not know me. I have no trouble understanding what others are saying to me
- I am understood only by people who know me well. I have great trouble understanding what others are saying to me
- I cannot adequately communicate with others

Tick the box that best describes your situation as it has been *over the past week*

39. How often do you have trouble sleeping?

- Never
- Almost never
- Sometimes
- Often
- All the time

40. How often do you feel worthless?

- Never
- Almost never
- Sometimes
- Usually

-
- Always

41. How often do you feel angry?

- Never
- Almost never
- Sometimes
- Often
- All the time

42. Thinking about how well you can walk:

- I find walking or running very easy
- I have no real difficulty with walking or running
- I find walking or running slightly difficult. I cannot run to catch a tram or train, I find walking uphill difficult
- Walking is difficult for me. I walk short distances only, I have difficulty walking up stairs
- I have great difficulty walking. I cannot walk without a walking stick or frame, or someone to help me.
- I am bedridden

43. Do you ever feel like hurting yourself?

- Never
- Rarely
- Sometimes
- Often
- All the time

44. How enthusiastic do you feel?

- Extremely
- Very
- Somewhat
- Not much
- Not at all

45. And still thinking about the last seven days: how often did you feel worried:

- Never
- Occasionally
- Sometimes
- Often
- All the time

46. Thinking about washing yourself, toileting, dressing, eating or looking after your appearance:

- These tasks are very easy for me
- I have no real difficulty in carrying out these tasks
- I find some of these tasks difficult, but I manage to do them on my own
- Many of these tasks are difficult, and I need help to do them
- I cannot do these tasks by myself at all

47. How often do you feel happy?

- All the time
- Mostly
- Sometimes
- Almost never
- Never

Tick the box that best describes your situation as it has been *over the past week*

48. How much do you feel you can cope with life's problems?

- Completely
- Mostly
- Partly
- Very little

-
- Not at all

49. How much pain or discomfort do you experience?

- None at all
 I have moderate pain
 I suffer from severe pain
 I suffer unbearable pain

50. How much do you enjoy your close relationships (family and friends)?

- Immensely
 A lot
 A little
 Not much
 I hate it

51. How often does pain interfere with your usual activities?

- Never
 Almost never
 Sometimes
 Often
 Always

52. How often do you feel pleasure?

- Always
 Usually
 Sometimes
 Almost never
 Never

53. How much of a burden do you feel you are to other people?

- Not at all
 A little
 A moderate amount
 A lot
 Totally

54. How content are you with your life?

- Extremely
 Mainly
 Moderately
 Slightly
 Not at all

55. Thinking about your vision (using your glasses or contact lenses if needed):

- I have excellent sight
 I see normally
 I have some difficulty focusing on things, or I do not see them sharply (e.g. small print, a newspaper or seeing objects in the distance)
 I have a lot of difficulty seeing things. My vision is blurred. I can see just enough to get by with.
 I only see general shapes. I need a guide to move around
 I am completely blind

56. How often do you feel in control of your life?

- Always
 Mostly
 Sometimes
 Only occasionally
 Never

Tick the box that best describes your situation as it has been *over the past week*

57. How much help do you need with tasks around the house (eg preparing food, cleaning the house or gardening):

- I can do all these tasks very quickly and efficiently without any help
- I can do these tasks relatively easily without help
- I can do all these tasks only very slowly without help
- I cannot do most of these tasks unless I have help
- I can do none of these tasks by myself

58. How often do you feel socially isolated?

- Never
- Rarely
- Sometimes
- Often
- Always

59. Thinking about your hearing (using your hearing aid if needed):

- I have excellent hearing
- I hear normally
- I have some difficulty hearing or I do not hear clearly. I have trouble hearing softly-spoken people or when there is background noise
- I have difficulty hearing things clearly. Often I do not understand what is said. I usually do not take part in conversations because I cannot hear what is said
- I hear very little indeed. I cannot fully understand loud voices speaking directly to me
- I am completely deaf

60. How often do you feel depressed?

- Never
- Almost never
- Sometimes
- Often
- Very often
- All the time

61. Your close and intimate relationships (including any sexual relationships) make you feel:

- Very happy
- Generally happy
- Neither happy nor unhappy
- Generally unhappy
- Very unhappy

62. How often did you feel in despair over the last seven days?

- Never
- Occasionally
- Sometimes
- Often
- All the time

63. Could you please estimate your height and weight?

Height -----in centimetre; Weight -----in kilogram

64. What is your background? *Please tick one box*

- | | |
|---|---|
| <input type="checkbox"/> Aboriginal / Torres Strait Islander | <input type="checkbox"/> Anglo-Saxon |
| <input type="checkbox"/> Asian | <input type="checkbox"/> European |
| <input type="checkbox"/> Pacific Islander | <input type="checkbox"/> Latin American |
| <input type="checkbox"/> Maori | <input type="checkbox"/> African |
| <input type="checkbox"/> South Asian (India, Bangladesh, Pakistan, Sri Lanka etc) | <input type="checkbox"/> Middle eastern |

65. How often do you have a drink containing alcohol? *Please tick one box*

- Never
- Monthly or less
- 2-4 times a month
- 2-4 times a week
- 4 or more times a week

66. How many drinks containing alcohol do you have on a typical day when you are drinking?

- 1 or 2 3 or 4 5 or 6 7 to 9 10 or more

67. At what age did you first drink? -----

- Yes No

68. Do either of your parents drink alcohol? *[Please tick one box]*

- Yes No

69. Could you raise \$2000 within 2 days in an emergency if necessary (including accessing own savings, borrowing money or using a credit card/bank card)? *[Please tick one box]*

- Yes No Don't Know

70. Do you and your family feel financial stress? *[Please tick one box]*

- No, I/we are financially comfortable
- A little, we watch our budget
- A lot, we find it difficult paying all our bills
- Extremely, we really struggle to get by

71. Do you believe that, on average, social security payments in Australia (unemployed, age/invalid/disability pensions, single parent, family or carer payments) should be: *[Please tick one box]*

- significantly increased
- marginally increased
- left at the present level
- marginally decreased
- significantly decreased

72. Are you Married or living with a partner
 Single: never married Single: widowed Single: divorced or separated

73. Who are you currently living with?

- | | |
|---|---|
| <input type="checkbox"/> By myself | <input type="checkbox"/> Family including husband/wife/partner/children |
| <input type="checkbox"/> Friends/shared accommodation | <input type="checkbox"/> Other (specify)..... |

Thank you for completing the questionnaire

Appendix 3 Smoking Intensity and QoL

Table 14 Analysis of smokers by SWLS, PWI, Question 17, Anxiety, AQoL-8D and EQ-5D

Variables	Smokers Category (cigarettes per day)	N	Mean	SE	95% Confidence Interval for Mean		Min	Max	Sig.
					LB	UB			
SWLS Total Score (Possible individual score: Min. 0, Max. 20)	Light Smokers (1-10)	38	13.03	.61	11.80	14.26	5	20	.004
	Moderate Smokers (11 -20)	38	10.79	.73	9.32	12.26	0	19	
	Heavy smokers (21 +)	32	9.41	.95	7.46	11.35	0	20	
	Total	108	11.17	.46	10.26	12.07	0	20	
PWI Total Score (Possible individual score: Min. 0, Max. 90)	Light Smokers (1-10)	38	56.82	2.68	51.38	62.25	20	90	.087
	Moderate Smokers (11 -20)	42	52.76	2.62	47.47	58.05	16	78	
	Heavy smokers (21 +)	33	47.58	3.27	40.92	54.23	0	90	
	Total	113	52.61	1.66	49.33	55.89	0	90	
Question 17 Total Score (Possible individual score: Min. 7, Max. 35)	Light Smokers (1-10)	38	18.89	.76	17.36	20.43	8	25	.020
	Moderate Smokers (11 -20)	42	21.12	.66	19.79	22.45	12	30	
	Heavy smokers (21 +)	33	21.94	.92	20.06	23.82	7	32	
	Total	113	20.61	.46	19.71	21.52	7	32	
Question 18 (Anxiety) Score (Possible individual score: Min. 11, Max. 55)	Light Smokers (1-10)	38	36.68	1.03	34.61	38.76	18	51	.235
	Moderate Smokers (11 -20)	42	35.69	.99	33.69	37.69	21	48	
	Heavy smokers (21 +)	33	34.00	1.26	31.44	36.56	21	49	
	Total	113	35.53	.63	34.29	36.77	18	51	
AQoL8D Utility Score	Light Smokers (1-10)	37	.71	.02	.67	.75	.51	.91	.195
	Moderate Smokers (11 -20)	43	.68	.02	.64	.73	.33	.96	
	Heavy smokers (21 +)	31	.65	.03	.60	.71	.38	.89	
	Total	111	.68	.01	.66	.71	.33	.96	
EQ-5D Utility Score	Light Smokers (1-10)	39	.82	.03	.77	.88	.50	1.00	.041
	Moderate Smokers (11 -20)	43	.83	.02	.78	.88	.40	1.00	
	Heavy smokers (21 +)	33	.73	.04	.65	.81	.30	1.00	
	Total	115	.80	.02	.76	.83	.30	1.00	

Table 15 Analysis of ex-smokers by SWLS, PWI, Question 17, Anxiety, AQoL-8D and EQ-5D

Variables	Ex-Smokers Category	N	Mean	SE	95% Confidence Interval for Mean		Min	Max	Sig.
					LB	UB			
SWLS Total Score (Possible individual score: Min. 0, Max. 20)	Light Smokers (1-10)	18	11.83	1.144	9.42	14.25	0	19	.157
	Moderate Smokers (11 -20)	63	12.56	.573	11.41	13.70	0	20	
	Heavy smokers (21 +)	84	11.08	.494	10.10	12.07	0	20	
	Total	165	11.73	.358	11.02	12.43	0	20	
PWI Total Score (Possible individual score: Min. 0, Max. 90)	Light Smokers (1-10)	19	59.32	3.575	51.81	66.83	17	82	.048
	Moderate Smokers (11 -20)	64	61.09	1.713	57.67	64.52	17	89	
	Heavy smokers (21 +)	88	54.88	1.782	51.33	58.42	19	90	
	Total	171	57.70	1.202	55.32	60.07	17	90	
Question 17 Total Score (Possible individual score: Min. 7, Max. 35)	Light Smokers (1-10)	19	16.00	1.247	13.38	18.62	7	24	.000
	Moderate Smokers (11 -20)	64	17.19	.593	16.00	18.37	7	28	
	Heavy smokers (21 +)	88	20.39	.516	19.36	21.41	8	31	
	Total	171	18.70	.394	17.92	19.48	7	31	
Question 18 (Anxiety) Score (Possible individual score: Min. 11, Max. 55)	Light Smokers (1-10)	19	39.74	1.182	37.25	42.22	30	47	.269
	Moderate Smokers (11 -20)	64	39.55	.712	38.12	40.97	23	51	
	Heavy smokers (21 +)	88	38.19	.605	36.99	39.40	23	50	
	Total	171	38.87	.431	38.02	39.72	23	51	
AQoL-8D Score	Light Smokers (1-10)	18	.78	.022	.73	.82	.56	.91	.018
	Moderate Smokers (11 -20)	64	.78	.015	.73	.79	.28	.93	
	Heavy smokers (21 +)	90	.718	.013	.69	.74	.36	.94	
	Total	172	.738	.009	.72	.75	.28	.94	
EQ-5D Score	Light Smokers (1-10)	19	.908	.029	.84	.96	.60	1.00	.004
	Moderate Smokers (11 -20)	64	.908	.016	.87	.93	.40	1.00	
	Heavy smokers (21 +)	90	.828	.017	.80	.86	.50	1.00	
	Total	173	.868	.012	.84	.88	.40	1.00	