

**Comparison of subjective wellbeing in substance users and the parents or partners of  
substance users**

**Running title:** Subjective wellbeing

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## **Abstract**

**Introduction & Aims.** There is growing interest in the impact of substance use on both the individual consumer's subjective wellbeing (SWB), and the reduced SWB of those closely connected to him or her. The study aimed to compare SWB among substance users ("consumers") and the parents or partners affected by another's substance use, and to evaluate the effect of counselling on changed SWB to six months.

**Design & Method.** The study used longitudinal data from a Perth (Australia) based not-for-profit treatment service. Subjective wellbeing was assessed with the Personal Wellbeing Index (PWI) at baseline and six months. Data were compared to national norms (mean 75.97) with one sample *t* tests. Change in PWI scores was assessed with generalised linear mixed models, controlling for age, gender, group (consumers *versus* parents or partners), psychological distress (Kessler-10) and social connectedness (Lubben).

**Results.** Of 220 participants, 136 (62%) were consumers and 84 (38%) were parents or partners. At six months 123 (56%) were re-interviewed. At baseline, both consumers (mean 53.7) and parents or partners (mean 66.1) had significantly lower PWI scores than national norms. At six months, only the substance users' PWI scores remained significantly lower (mean 67.8). Subjective wellbeing significantly increased with time ( $\beta=5.52$  95% CI 3.15, 7.90), with no significant time by group interaction.

**Discussion & Conclusions.** Both groups showed significant decrements in SWB compared with the general population but with improvements over the study period. However, the lack of a control group prevents definitive assertions on causality for improved SWB.

## **Keywords**

Subjective wellbeing, alcohol, illicit, treatment, parents or partners

## **Introduction**

Until recently there was little research on the quality of life of substance using individuals, especially among those who inject drugs [1, 2]. Unsurprisingly, their quality of life and subjective wellbeing (SWB) have been reported as being lower than those of the general population. In an Australian sample of 881 people who injected drugs, the mean Personal Wellbeing Index (PWI) score was 55.4, compared with that year's general population norm of 75.3 [1]. Similarly, among 201 substance users in treatment that included those who did and did not inject drugs, the mean PWI was 49.1 [3].

Substance use can also impact on people other than the consumer. There is increasing interest in quantifying the extent of this impact, with recognition that costs are also borne by family members [4]. A Swedish study found a substantial reduction in quality of life for people living with or having a close relative who was a heavy drinker [5]. In contrast, an Australian survey found that living with a heavy drinker did not significantly reduce SWB. However, exposure to heavy drinkers outside the family did result in significant decrements in SWB [6].

The limited data on the effect of substance use on another's SWB is a deficit in the field and it may be an important benefit of intervention, if amenable to change. The primary aim of this report was to compare the SWB of substance using clients ("consumers") and the parents/partners of a substance user attending a treatment service. The secondary aim was to assess the change in SWB for both groups six months after entering counselling programs. Given the association between wellbeing, social support and mental health, these were also included in the analysis [7].

## **Method**

### *Sample*

New clients and those starting a new episode of treatment were eligible. The 220 participants included both consumers (136, 62%) and parents/partners (84, 38%) of consumers. More of the consumers than parents/partners were male (71% *versus* 37%:  $\chi^2=40.4(1) p<.001$ ) and they were

also significantly younger (35.1 *versus* 49.2 years:  $t=7.8(136) p<.001$ ). To protect privacy, information was not linked between consumers and parents/partners.

### *Procedure*

Participants were recruited at one Holyoake site in Perth, Western Australia. Clinic staff approached potential participants and obtained permission to provide information to research staff. Paper-based surveys were completed prior to the first counselling session. Research staff collected follow-up data at six months by telephone, for which participants received \$20. The study received ethical approval at Curtin University.

### *Measures*

SWB was assessed with the Personal Wellbeing Index (see Table 1) which was developed and validated in Australia [8]. Items are rated on an eleven point scale (0-10) with seven of the eight items summed and transformed to a score out of 100. In 2015, the overall mean PWI score in Australia was 75.97 (SD 12.25) [9]. The PWI can also be considered as seven subscales reflecting the key elements of subjective wellbeing [8]. The Kessler K-10 was used as a measure of global psychological distress [10]: it has a range of 10-50 and generally interpreted as 20-24=mild, 25-29=moderate, 30-50=severe distress [11]. The Lubben social network scale was used to evaluate social support and social networks [12]. Scores range from 0-30 and values of less than 12 are interpreted as indicative of social isolation. We assessed substance use by the consumers with the alcohol, smoking and substance involvement screening test (ASSIST) [13]. We quantified change via the recent use score (the last three months: ASSIST questions 2-5.) Alcohol use was assessed with a 7-day drinking diary [14] in standard drinks.

### *Treatment*

The study did not involve any manipulation of the treatment provided. The service uses both individual and / or group treatment sessions and draws on a range of therapeutic approaches including motivational interviewing, cognitive behaviour therapy, social learning theory, systems theory, uses a person-centred approach and adopts a harm minimisation perspective [15].

## *Analysis*

The initial analyses used *t* tests together with descriptive statistics. The PWI data were compared with national norms (mean 75.97) via one sample *t* tests. Univariate change in SWB was assessed with a generalised linear mixed model (GLMM) which controls for clustering of variance within individuals over repeated measures [16]. In assessing PWI scores, a normal distribution and identity link was used with an unstructured correlation matrix (Table 2). A multivariate GLMM model of SWB controlled for group (consumer *versus* parents/partners), age, gender, K-10 and Lubben scores. On continuous measures, the coefficient shows the expected change in PWI score for each unit change on the variable's scale.

## **Results**

### *Baseline characteristics*

The consumers had significantly worse mental health (K-10 mean 26.8 *versus* 21.6) and were more socially isolated than the parents/partners (Lubben mean 13.1 *versus* 16.6). The consumers' primary drugs of concern were: alcohol (56, 41%) meth/amphetamine (36, 27%) cannabis (20, 15%) heroin (7, 5%) poly-drug (11, 8%) and other (7, 5%).

### *Baseline PWI*

The parents/partners had significantly higher PWI scores than the consumers but the scores for both the parents/partners (mean 67.8  $t=4.9(83)$   $p<.001$ ) and consumers (mean 53.7  $t=13.1(131)$   $p<.001$ ) were significantly lower than the national norm. Forty-one (30%) consumers reported that they had ever injected drugs: their PWI scores were not significantly different to those who had never injected (mean 51.1 *versus* 54.4). On five of the seven sub-scales, consumers had significantly lower PWI scores than parents/partners. The two exceptions were the scales relating to personal relationships and feeling safe (Table 1).

### *Table 1*

### *Follow-up*

At six months, 123 (56%) people were interviewed (consumers 61 *versus* parents/partners 62:  $\chi^2=17.6(1) p < .001$ ). The mean wellbeing scores for parents/partners were no longer significantly different to national norms. However, the scores for consumers were significantly lower than national norms ( $t=3.5(58) p=.001$ ) and significantly lower than the parents/partners (Table 2). SWB and all the other measures showed significant improvement over time in the univariate analyses.

*Table 2*

#### *Change in SWB*

Neither age, gender nor group were related to changed SWB in the multivariate analysis. SWB was predicted by K-10 scores with each point increase on the K-10 associated with a 1.08 point reduction in SWB ( $\beta=-1.08$ , 95% confidence interval (95%CI) -1.27, -0.89) and by social connectedness with each one point increase on the Lubben associated with increased SWB ( $\beta=0.79$ , 95%CI 0.54, 1.05). Relative to baseline, SWB increased by more than five points ( $\beta=5.28$ , 95%CI 2.82, 7.73). There was no significant group by time interaction, so the term was not included.

#### **Discussion**

To the author's knowledge, this is the first study assessing the subjective wellbeing of people attending treatment for the substance use of others. The study replicated data from Sweden to the extent that there was impaired wellbeing for those either living with or closely connected to a substance user [5]. Similarly, reduced SWB was found among those who were themselves substance users, consistent with existing Australian data on the low SWB among those who use drugs [1, 3, 17]. The important role of mental health (K-10) was also consistent with previous findings where the mental but not physical components of the SF-8 predicted PWI scores [3].

However, the findings of an Australian community survey, where those exposed to but not those living with heavy drinkers had lower SWB, were not replicated [6]. The current cohort could

represent more severe cases, given that they were in a treatment setting rather than a community survey and included both alcohol and other drug users. Furthermore, the current analysis did not separate data by residential status.

At baseline both groups scored below national norms, with the consumers also significantly lower than the parents/partners. This latter finding also generalised to most of the PWI subscales. However, the personal relationships and safety subscales did not differ between the groups. Discordant alcohol or illicit drug use between partners is likely to be a source of relationship difficulties and breakdown [18] and could explain the lack of difference on this subscale.

### *Limitations*

The study did not include a control group. Thus, improvements in SWB could represent regression to the mean rather than resulting from treatment received or the tendency of SWB to return to a relatively stable “set-point” [8]. Change in SWB for parents/partners cannot be attributed to change in substance use by their significant other, as the records were not linked. In addition, it was not necessary for the significant other to be receiving treatment for the parent/partner to be attending the service: even if records had been linked, not all cases would have formed dyads. Results for parents/partners were analysed together as data were not available on residential status with the consumer through the study period.

### *Conclusions*

Just considering alcohol, more than 2.7 million adults and 1 million children are affected each year by another person’s drinking in Australia [19]. The cost in terms of reduced wellbeing is estimated at AU\$8.5 billion [4]. Therefore, the wellbeing of those affected by the substance use of others is a significant economic and social concern. Further evaluation is required to determine if intervention can improve SWB in the absence of changed substance use by the significant other.

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**Conflict of interest**

The author has no conflicting interests to declare with respect to this paper.

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Table 1 Personal wellbeing index (PWI) sub-scales at baseline

<b>Sub scales How satisfied are you with...</b>	<b>Substance users (n= 132<sup>b</sup>)</b>	<b>Parents/partners (n=84)</b>	<b><i>t</i> statistic</b>
..your standard of living?	5.8 (2.5)	7.4 (2.1)	4.9 (196 <sup>a</sup> ) <i>p</i> <.001
..your health?	5.7 (2.2)	6.6 (2.2)	4.6 (213) <i>p</i> <.001
..what you are currently achieving in life?	4.7 (2.5)	6.2 (2.4)	4.4 (213) <i>p</i> <.001
..your personal relationships?	5.0 (2.6)	5.4 (2.6)	0.9 (212) <i>p</i> =.36
..how safe you feel?	6.7 (2.5)	7.2 (2.5)	1.6 (212) <i>p</i> =.12
..feeling part of the community?	5.3 (2.8)	6.8 (2.3)	4.4 (201 <sup>a</sup> ) <i>p</i> <.001
..your future security?	5.1 (2.8)	6.8 (2.4)	4.6 (213) <i>p</i> <.001

<sup>a</sup> Levene's correction for unequal variances: <sup>b</sup> Four people did not report their PWI

Table 2: Outcome measures at baseline and 6 months (statistics show univariate change since baseline and Cohen's *d* shows between group effect size at baseline and six months)

Variable		Baseline			Six months			Change over time (univariate analysis) <i>F</i> (DF)
		Substance users (n=136)	Parents/ partners (n = 84)	Cohen's <i>d</i>	Substance users (n=61)	Parents/ partners (n = 62)	Cohen's <i>d</i>	
SWB	mean (SD)	53.7 <sup>a, b</sup> (19.6)	66.1 <sup>a, c</sup> (18.5)	0.63	67.8 <sup>a</sup> (18.0)	76.2 (13.5) <sup>d</sup>	0.53	102.0 (1,334) <i>p</i> <.001
Kessler-10	mean (SD)	26.8 (8.3)	21.6 <sup>c</sup> (7.8)	0.63	20.9 (9.1)	17.0 (6.7) <sup>e</sup>	0.50	64.5 (1,336) <i>p</i> <.001
Lubben	mean (SD)	13.1 (6.2)	16.6 <sup>c</sup> (5.0)	0.59	15.5 (7.6)	17.1 (5.3)	0.25	9.2 (1,336) <i>p</i> =.003
7-day drinking	median (IQR)	14 (0.0-37.0)	-		3.0 (0.0-18.0)	-		7.3 (1,115) <i>p</i> =.008 <sup>f</sup>
ASSIST recent	mean (SD)	43.8 (28.2)	-		20.4 (15.7)	-		65.0 (1,191) <i>p</i> <.001

ASSIST = Alcohol, smoking and substance involvement screening test: 7-day drinking in standard (10g) drinks: DF = degrees of freedom: IQR = Inter quartile range: SWB =

Subjective wellbeing: <sup>a</sup> significantly lower than the national norm 75.97: <sup>b</sup> 4 people did not report their wellbeing: <sup>c</sup> significant difference between substance users and partners/parents at baseline *p*<.001: <sup>d</sup> significant difference between substance users and partners/parents at 6 months *p*=.005: <sup>e</sup> significant difference between substance users and partners/parents at 6 months *p*=.008: <sup>f</sup> Gamma distribution with Log link function used due to positive skewed data