Outcome of treatment seeking rural gamblers attending a nurse-led cognitive-behaviour therapy service: A pilot study

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ABSTRACT

Objectives: Little is known about the differences between urban and rural gamblers in Australia, in terms of comorbidity and treatment outcome. Health disparities exist between urban and rural areas in terms of accessibility, availability, and acceptability of treatment programs for problem gamblers. However, evidence supporting cognitive-behaviour therapy as the main treatment for problem gamblers is strong. This pilot study aimed to assess the outcome of a Cognitive-Behavioural Therapy (CBT) treatment program offered to urban and rural treatment-seeking gamblers.

Methods: People who presented for treatment at a nurse-led Cognitive-Behavioural Therapy (CBT) gambling treatment service were invited to take part in this study. A standardised clinical assessment and treatment service was provided to all participants. A series of validated questionnaires were given to all participants at (a) assessment, (b) discharge, (c) at a one-month, and (d) at a 3-month follow-up visit.

Results: Differences emerged between urban and rural treatment-seeking gamblers. While overall treatment outcomes were much the same at three months after treatment, rural gamblers appeared to respond more rapidly and to have sustained improvements over time.

Conclusion: This study suggests that rural problem gamblers experience different levels of co-morbid anxiety and depression from their urban counterparts, but once in treatment appear to respond quicker. ACBT approach was found to be effective in treating rural gamblers and outcomes were maintained. Ensuring better availability and access to such treatment in rural areas is important. Nurses are in a position as the majority health professional in rural areas to provide such help.

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1. Introduction

There are inequities in health and a health divide between urban and rural areas, reflecting the social determinants of health. There are also less health services available and outcomes after treatment are lower in rural than urban areas [1]. This is also true for people experiencing problems with gambling in rural areas where gambling is often linked to sociodemographic variables such as poverty, poor housing, and unemployment [2]. With recent improvement in mobile and internet technologies in rural settings in Australia, there are more opportunities for people to access gambling services [3]. However, little has been reported on the success of such treatment [4]. Increased access to technology also introduces more gambling in the form of online casinos, bingo and lotteries which is rated by participants as more addictive than offline gambling and may lead to more gambling problems in rural areas [5].

Problem gambling affects approximately 2% of Australians with an estimated international prevalence between 0.5 and 9.0% [6–9]. While a great deal of research has taken place to attempt to understand the impact of gambling on the individual, their families and the wider community, far less research has been conducted into the specific issue of rural gamblers. Given the increase in opportunities for rural residents to gamble using smart technologies and mobile gaming, more research is needed.

A wide range of treatments are available to help combat gambling problems. However, despite a growing history of such treatments, there is little clear empirical evidence to support any particular approach. Cognitive-Behavioural Therapy (CBT) and psycho-pharmacological therapies are two treatment options that have shown some significant results in terms of reducing problem gambling behaviour [10–12]. Two approaches to CBT have been shown to be effective: exposure therapy with response prevention [13]; and cognitive restructuring to gambling specific erroneous beliefs [14].

In many gambling studies, therapists from various disciplines offer treatment to problem gamblers. For example, in two studies of exposure therapy the therapists were mental health social workers, mental health nurses, clinical psychologists and counsellors [15,16]. While little has been reported on nurses treating problem gamblers, there are a number of examples as to how they may be able to help with other conditions including mental health [17] and addictions [18] in rural settings. It was noted, rural mental health nurses were required to occupy broader and more complex roles often treating patients outside of their scope of practice such as gambling [19]. In addition a number of studies have noted a severe lack of mental health nurses in rural areas despite a demand for their services [20,21].

This study was designed to evaluate the routine clinical outcomes from a nurse-led and nursing delivered CBT treatment program for problem gamblers in South Australia [22]. There have been few studies examining specific differences between rural and urban treatment outcomes of gamblers. This study provides a clear indication of the potential problems facing rural gamblers and how such issues can be addressed. The inclusion of nurses in such treatment especially in rural areas may be one way to address this as they typically represent the largest rural health professional group.

2. Materials and methods

2.1. Participants

A convenience sampling method was used to recruit participants from an out-patient gambling treatment service attached to a large teaching hospital in Adelaide, South Australia [22]. As a result, all participants were seeking treatment for problem gambling. In order to be included in the study, participants needed to give consent for the assessment and treatment outcome data to be collected and used for research purposes. As this was a naturalistic clinic population there were no exclusion criteria.

2.2. Procedures

Ethics approval for the study was granted by Flinders Medical Centre and Flinders University joint ethics committee. All participants were initially assessed and demographic data was recorded. They were invited to complete several measures, as described in Section 2.4. Having been determined as suitable for the treatment program, participants were offered between 6 and 12 sessions with a Masters prepared CB therapist using a guided treatment manual [23].

2.3. Interventions

Therapists were all nurses with Masters level qualifications who had been trained as CBT therapists [24]. A standardised treatment was used, that has been described in detail elsewhere [22,23,25,26]. In essence, all clients completed four steps: 1) stimulus control methods to bring about immediate control of gambling; 2) imaginal and live exposure with response prevention to gambling specific triggers; 3) cognitive restructuring and behavioural experiments to further support the urge reduction obtained through exposure; and 4) standard client focussed relapse prevention.

2.4. Measurements

Participants were asked to complete a series of measures at the initial assessment, at discharge, at a 1 month follow-up session (1MFU) and at a 3 month follow-up session (3MFU). Data was also collected at a 6-month and 12-month follow-up session, but has not been included in this report due to the low number of rural participants attending the follow-up sessions.

The measures used included an anxiety inventory, a depression inventory, a work and social adjustment questionnaire, a simple gambling severity tool and an assessment of their suitability for CBT therapy. This assessment included an overview of their main gambling problem, psychiatric assessment, mental state examination and a risk assessment.

The *Beck Anxiety Inventory (BAI)* is a 20-item measure of state anxiety that has been shown to be valid and reliable

[27–29]. The *Beck Depression Inventory (BDI)* is a 20-item measure of current depression that has been shown to be valid and reliable in clinical populations [30–32]. The *Work & Social Adjustment Scale (WSAS)* is a 5-item measure of disability associated with a clinical problem (work, social leisure, private leisure, home management and relationships). This measure has been shown to be valid and reliable in a number of clinical populations including gambling [33–38]. Finally all participants completed a specific statement of their *gambling problem* measured on a scale from zero (no problem) to eight (severe problem). This measure of an individual's problems has been used in a number of clinical settings although has never been formally tested for reliability or validity [39,40]. In addition all gamblers completed the Victorian Gambling Screen, a simple 15 item measure of at risk and problem gambling as well as a Diagnostic and Statistical Manual for Mental Diseases [41] diagnosis of pathological gambling. This tool has been extensively validated in the general population [42–44], clinical practice [45] and with adolescents [46].

2.5. Statistical analysis

The data was analysed using the SPSS version 22. Group differences on demographic were analysed using 'chi squared test and fishers exact test'. Changes over time on all continuous measures were determine using one way ANOVA and paired *t*-tests. Within and between group analyses were performed.

3. Results

3.1. Gambler characteristics

There were more female gamblers in the rural than the urban sample (rural = 64.0% vs. urban = 57.0%; NS) and rural gamblers were generally younger than urban gamblers (rural < 35 years = 50.0% vs. urban < 35 years = 25.7%; NS). Rural gamblers played less on Electronic Gaming Machines (EGMs) i.e. slot machines than urban gamblers (rural 92.0% vs. urban 79.0% vs.; χ^2 (4, n = 136) = 388.20, P < 0.001). A similar percentage of rural and urban gamblers failed to complete the treatment program. However, once rural gamblers had commenced treatment they were more likely than urban gamblers to return for post-treatment follow-up (rural 50.00% vs. urban 28.7%; NS). The general characteristics of urban and rural gamblers are presented in Table 1.

3.2. Gambling severity

There were no differences between urban and rural gamblers on any gambling measure. Rural and urban gamblers experienced similar improvement over time, up to 3 months after completing treatment. However, rural gamblers spent more hours gambling in any given month than urban gamblers (rural 79 h vs. urban 64 h; $U(137)$ = 372.00, NS).

3.3. Work & social adjustment scale (WSAS)

Rural gamblers showed a larger positive change than urban gamblers in relation to work and social adjustment during the active period of treatment, although this difference diminished at follow-up (Fig. 1). When comparing each of the five items of the WSAS, there were no significant differences between rural and urban gamblers. However, at the initial assessment rural gamblers experienced more problems than urban gamblers in their work and social adjustment in particular their social leisure (rural: M = 6.00 vs. urban: M = 4.28; NS). This may reflect the nature of rural social behaviour where the local pub or hotel is often the main source of socialising, as well as the main gambling outlet.

3.4. Beck anxiety inventory (BAI)

There were similar changes in anxiety between rural and urban gamblers during the active period of treatment. While not statistically significant, rural gamblers had greater improvements in their levels of anxiety post-treatment (Fig. 2). When comparing rural and urban gamblers, in terms of risk of anxiety, there were slightly more rural gamblers in the mild/moderate anxiety category than urban gamblers (rural 54% vs. urban 47%; NS). There were no differences at the assessment stage between rural and urban gamblers in relation to the sub-clinical and severe anxiety categories.

Female rural gamblers were significantly more anxious that male rural gamblers at the assessment stage, while experiencing similar levels of anxiety to all urban gamblers ($t(12)$ = 4.96, P < .001). There was a significant difference between changes in anxiety over time, with female rural gamblers showing greater improvement than male rural gamblers at 1-month follow-up, which was maintained at three months ($\chi^2(1, n = 16)$ = 8.50, P < 0.01).

3.5. Beck depression inventory (BDI)

Both rural and urban gamblers showed a similar improvement in terms of depression post-treatment. Rural gamblers began with slightly higher depression levels than urban gamblers, but these levels improved more slowly over time (Fig. 3). Male rural gamblers were significantly more depressed than female rural gamblers at assessment and were similar to all urban gamblers ($t(13)$ = 7.28, P < 0.001).

Table 1 – General characteristics of urban/rural gamblers (weighted by gender).

			Male		Female	
			n	(%)	n	(%)
Urban	<35	Gaming machines	12	(75.00)	8	(80.00)
		Other	4	(25.00)	2	(20.00)
	>36	Gaming machines	18	(90.00)	78	(97.50)
		Other	2	(10.00)	2	(2.50)
Rural	<35	Gaming machines	1	(50.00)	6	(60.00)
		Other	1	(50.00)	4	(40.00)
	>36	Gaming machines	3	(100.00)	8	(100.00)
		Other	0	(0.00)	0	(0.00)

Error bars: 95% CI
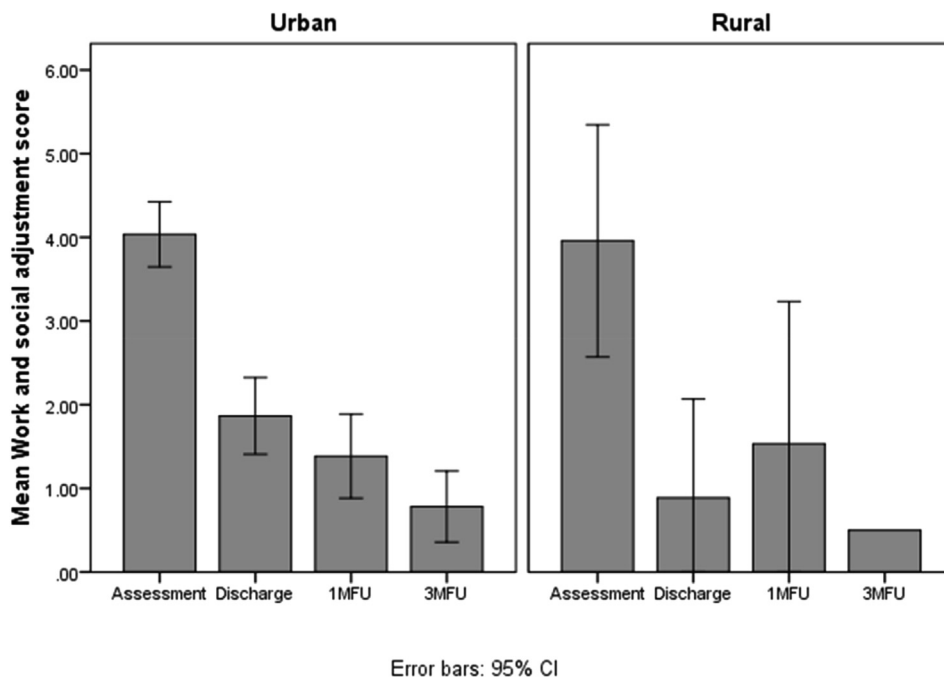
Fig. 1 – Changes in work & social adjustment.

Error bars: 95% CI
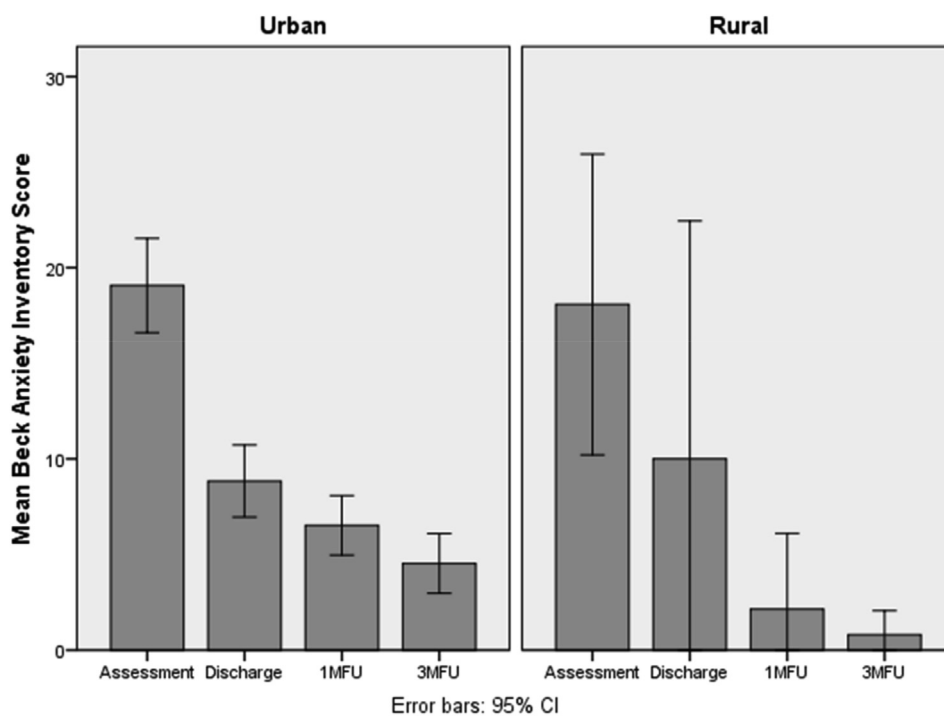
Note: 1MFU - $U = 119.50, P = 0.031$

Fig. 2 – Changes in Beck anxiety inventory (BAI).

4.   Discussion

4.1.   Sample of rural treatment-seeking gamblers

This paper offers some initial insight into the impact of gambling on people living in rural areas. It appears, in this small sample, that treatment-seeking rural gamblers are more likely to be female, younger and to play EGMs. This data was drawn from a routine clinic population and so those reported are not a representative sample. In fact they are clearly a skewed group. There is evidence that males gamble more and are at greater risk of developing problems than females in both rural and urban areas [47]. It is possible that rural females
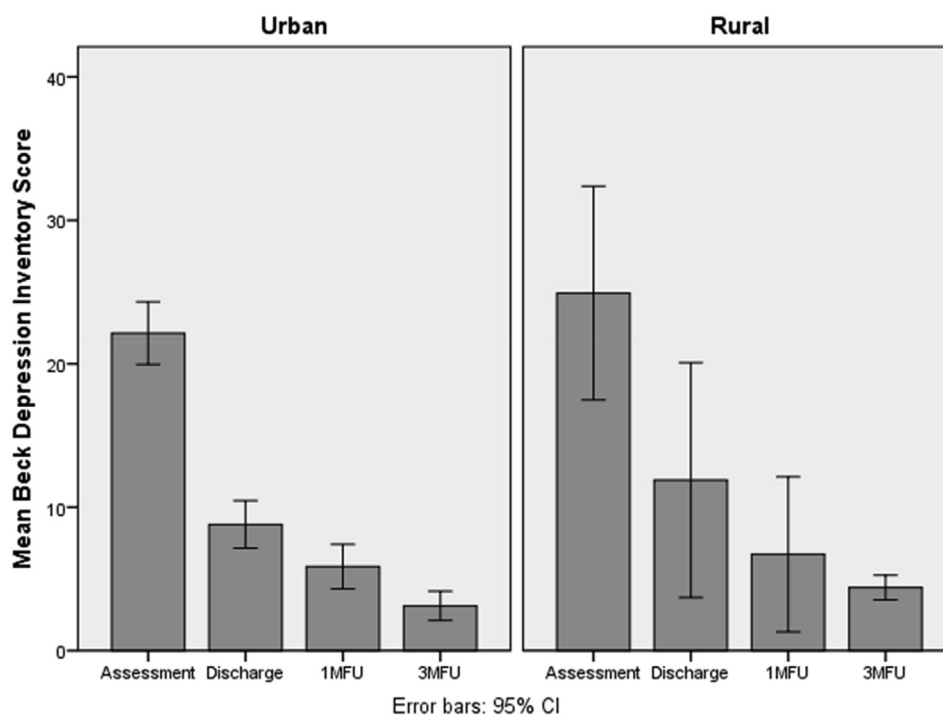
Fig. 3 — **Changes in Beck depression inventory (BDI).**

are more inclined to seek help than their male counterparts and that, in rural areas; this is further compounded by the fact that less help is available [48]. This dynamic may be reflected in the sample. It may also be relevant that treatment seeking rural gamblers had to travel to a metropolitan area for treatment, and this may have been easier for younger people and for rural women rather than rural men.

4.2. Rural versus urban treatment-seeking gamblers

Rural gamblers presented with more severe gambling problems than urban gamblers, and they experienced higher levels of psychological distress and lower work and social adjustment than urban gamblers. Female rural gamblers experienced higher levels of anxiety and male rural gamblers experienced higher levels of depression. Once in treatment, rural gamblers experienced rapid and sustainable improvements compared with urban gamblers. While female rural gamblers experienced higher levels of anxiety pre-treatment, the improvements that they made during treatment were similar to male rural gamblers at the 3-month follow-up. This was also the case with male rural gamblers who experienced higher levels of depression, but improved in a similar manner to female rural gamblers. It is possible that, although there were considerable barriers to treatment in rural areas, once a rural gambler has accepted that he or she needs treatment and decided to travel in order to receive such treatment, they can achieve sustained improvements to their mental health.

4.3. Need for gambling screening in rural areas

Future research is needed to determine whether early detection of anxiety or depression in rural residents may help reduce the need for someone to gamble or help to identify when their gambling has becoming a problem. Simple assessments of alcohol and other behavioural addictions are already in place in rural Australian primary care services [49]. The introduction of brief gambling screening items may help to reduce the burden of gambling problems in rural settings. Such tools have been developed and need to be adopted more widely [35]. With nurses representing the majority health worker in Australian rural areas, having knowledge of and some clinical skills in helping gamblers may reduce the long term impact of the problem. Nurses encounter rural residents with anxiety, depression and suicidal ideation and determining if gambling is contributing to this would potentially be beneficial.

4.4. Effectiveness and accessibility of CBT gambling treatment

This paper reports the use of a combined behavioural and cognitive approach to helping problem gamblers [16,22,50,51]. While such treatment is shown to be effective, accessibility to such services remains an issue. Attempts have been made to increase availability through tele-health [15], internet treatment [3] and, residential care [26], although more locally based training and provision is still needed. Recent developments in the United Kingdom (UK), using a stepped care approach to primary health care, may help provide better rural care [52]. This nurse-led clinic operated under similar protocols to the UK model and further trial sites are underway in Australia based on this approach with a proposed specific adaption of the program for use in rural areas [53].

4.5. *Limitations of the study*

This was a non-randomised naturalistic study reporting data on self-selecting treatment seeking gamblers. Clearly many factors may have accounted for the changes observed. In order to ensure that these findings are replicable, more research is required using larger sample sizes that are matched by rural and urban populations, as well as by demographic variables. While the approach to treatment was consistent across all participants, alternative methods of delivery were not tested and co-joint therapies were not accounted for, including medication use. Again, this would need to be controlled for in future research.

Conflict of interest statement

The authors declare no conflict of interest.

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