# Alcohol Caused Mental Disorders in Western Australia With Reference to the Indigenous Population: 1981-1992

## Introduction

This study provides the results of an analysis of trends in hospitalisation due to alcoholic psychoses in Western Australia (WA) over the period 1981 to 1992. The prevalence of this mental disorder in the Indigenous population will also be compared with the non-Indigenous population to understand strategies for the appropriate management of those incarcerated or detained in police custody with this disabling mental illness.

Alcohol abuse poses a major threat to Indigenous communities as a principal causative factor of serious social and health problems in significant numbers of persons amongst the drinking population. As those who abuse alcohol over an extended period of time frequently develop serious medical and health problems and often require expensive inpatient treatment, there is also a concomitant burden imposed on the health system.

Alcohol has been a powerful symbol of human rights for Indigenous people since prohibition was introduced. Prohibition made alcohol a central issue in relations between Indigenous people and police and despite the repeal of restrictive legislation (on 1 July 1971 for WA), Indigenous people remain the most frequently arrested and incarcerated group in Australia, often for minor alcohol related offences.

In August 1988 Indigenous persons were being detained nationally at a rate 20 times that of non-Indigenous persons, almost a third of these were due to drunkenness - three times the proportion for such arrests for the non-Indigenous population. In WA the arrest rate was 43 times greater than for non-Indigenous persons, with Halls Creek and Fitzroy Crossing accounting for a third of all detentions in the State during 1988 to 1989.[1]

A study in the Kimberley reported that a substantial proportion of the Indigenous population, especially males, expected to be imprisoned at some point in their life.[2] Approximately half the males under 50 years of age had been in prison, 92% of these within the last year and nearly 20% within the last month. The risk of incarceration was found to increase steadily with frequency of drinking. The odds ratio for a constant drinker being incarcerated in a police lockup was 183 times greater than for a life-time abstainer.

The Royal Commission Into Aboriginal Deaths in Custody (RCIADIC), set up because of the sudden increase in suicides of young Indigenous males in 1987, identified that the excess of Indigenous deaths in custody is largely explained by the massive over representation of this group among those incarcerated. Increases in suicide and deaths from other non-natural causes in the urban non-incarcerated Indigenous population have also occurred, while suicide appears to be rare among tradition oriented groups.[3]

Further evidence that Indigenous drinkers are at greater risk of arrest comes from a Kimberley study which showed that peaks in the number of confinements corresponded to payment of social security cheques when more money is available to buy alcohol.[4] Hunter interviewed 100 Indigenous persons detained mainly for alcohol related offences in the lockup in Broome. About a quarter had previously had experiences of disordered ideation or perception associated with alcohol, one third had a history of self harm or suicidal ideation and 15% had made previous suicide attempts.

Alcohol is associated with each of the four interrelated issues involved in Indigenous deaths in custody - incarceration in police cells, alcoholism and acute intoxication, alcohol caused disorders of ideation and perception and suicide.[5]

The general characteristics of Indigenous persons who die in custody is their young age (about half were under 28 years of age), being male, being intoxicated and in custody for having committed minor offences. Hanging is the most common method of suicide used by Indigenous persons in custody.

Particularly vulnerable are those with a history of suicidal ideation and attempts, disorders of ideation and perception or panic reactions in response to alcohol and those who have suffered a recent loss or disruption to a relationship. Intoxication associated with agitation or despondency at the time of confinement, particularly in the younger males are further danger signs.[6]

Inappropriate policing approaches to dealing with drunkenness result in young Indigenous persons being locked up in unsuitable police cells where they cannot be properly cared for and where their lives are at risk. The

1 Hunter E. *Aboriginal health and history. Power and prejudice in remote Australia*. Oxford, Cambridge University Press, 1993.
2 Ibid.

**This paper was written by Greg Swensen from an unpublished study completed in 1996**

3 Kahn MW, Hunter E, Heather N & Tebbutt J. 'Australian Aborigines and alcohol: a review.' (1990) 10 *Drug & Alcohol Review* 351-366; Hunter E. 'Out of sight, out of mind - 1. Emergent patterns of self-harm among Aborigines of remote Australia.' (1991) 33 *Social Science & Medicine* 655-659; Hunter E. 'Out of sight, out of mind - 2. Social and historical contexts of self-harmful behaviours among Aborigines of remote Australia.' (1991) 33 *Social Science & Medicine* 661-671.
4 Hunter E. 'Aboriginal suicides in custody: a view from the Kimberley.' (1988) 22 *Australian & New Zealand Journal of Psychiatry* 273-282.
5 Hunter E. 'On Gordian knots and nooses: Aboriginal suicide in the Kimberley.' (1988) 22 *Australian & New Zealand Journal of Psychiatry* 264-271.
6 Hunter E. 'Aboriginal suicides in custody: a view from the Kimberley.' (1988) 22 *Australian & New Zealand Journal of Psychiatry* 273-282.

interim report of the RCIADIC, published in 1988, recommended that public drunkenness should be decriminalised in jurisdictions where this had not already occurred and alternative facilities be established for the care of intoxicated people. This recommendation resulted in the *Acts Amendment* (*Detention of Drunken Persons) Act 1989*, which was proclaimed on 27 April 1990 and which meant that public drunkenness was no longer an offence in WA under the *Police Act 1892*.

As alcohol is one of the major reasons for the detention of Indigenous persons and as the disturbed behaviour associated with delirium tremens (DTs) or hallucinosis may place an affected individual at greater risk of arrest, it is important to know if lockups are acting as concentrators of those at risk of suicide.

These problems arise because of underlying differences in the pattern of alcohol consumption between Indigenous and non-Indigenous populations, for whereas a larger proportion of the Indigenous population are non-drinkers compared to the non-Indigenous population, of those Indigenous persons that do drink, there is a greater proportion of those who do so at levels considered to be hazardous or harmful to health.[7]

In the current study inpatient admissions to a public or private general or teaching hospital or to psychiatric unit or psychiatric hospital in WA between 1981 and 1992 that had an underlying diagnosis of alcoholic psychosis were analysed to the fourth digit sub code of the ICD9-CM 291 alcoholic psychoses diagnostic group.

The underlying (ie principal) diagnosis, the condition that best characterised the reason for the hospital stay when the patient leaves hospital, is recorded as the year separation by the hospital morbidity data system (HMDS). The eight sub diagnostic groups identified at the fourth digit level were then grouped into four broad related diagnostic groups viz:

- 'alcohol withdrawal' - DTs (ICD9=291.0) and other alcohol withdrawal (ICD9=291.8);
- 'brain damage' - Korsakov's psychosis (ICD9=291.1) and alcoholic dementia (ICD9=291.2);
- 'functional psychoses' - alcoholic hallucinosis (ICD9=291.3) and morbid jealousy (ICD9=291.5); and
- 'other alcoholic psychoses' - pathological drunkenness (ICD9=291.4) and unspecified (ICD9=291.9)

7 Unwin E, Thomson N, Gracey M. *The impact of tobacco and alcohol consumption on Aboriginal mortality and hospitalisation in Western Australia, 1983-1991. Occasional Paper No. 60.* Perth, Epidemiology Branch, Health Department of WA, 1994.

**Table 1**
**Number of hospital admissions for alcoholic psychoses by indigenous status & sex, 1981 - 1992**

| | Indigenous | Non-Indigenous | Total |
|---|---|---|---|
| Males | 792 | 1,728 | 2,520 |
| Females | 139 | 353 | 492 |
| **Persons** | **931** | **2,081** | **3,012** |

# Major findings

## Number of admissions

In WA over the 12 year period 1981 to 1992 there was a total of 3,012 hospital admissions due to alcoholic psychoses (ie ICD9 291), an average of 251 admissions per year. Of the total number of admissions, 931 (31%) involved Indigenous persons and 2,081 (69%) involved non-Indigenous persons (Table 1).

The majority of cases of alcoholic psychoses occurred in males and there was little difference between the proportions of males, with 792 admissions (85%) of Indigenous males compared to 1,728 (83%) admissions of non-Indigenous males (Table 1).

Analysing the data by race for each category of alcoholic psychosis (Table 2; Appendix Table A1) showed that overall Indigenous admissions accounted for nearly half the functional psychoses group, nearly half the other alcoholic psychosis group, 30% of the alcohol withdrawal group and 15% of the brain damage group.

The proportions of Indigenous admissions for the most recent year, 1992, were greater for all categories of alcoholic psychoses compared with the combined 12 year period. For all alcoholic psychoses the proportion of Aboriginal admissions rose by 10%, from an average of 31% for the 12 year period to 41% for 1992. (Table 3, page 3).

## Age specific rates

The age specific rates were much higher for Indigenous persons and peaked at younger ages, with the following features identified. (Figure 1, page 3 and Figure 2, page 4.)

***Alcohol withdrawal:*** Indigenous rates peaked in the 30-34 age group (409 admissions per 100,000 person years) compared with the 45-54 age group (22 admissions per 100,000) in non-Indigenous persons.

***Brain damage:*** Indigenous rates peaked in the 55-59 age group (177 admissions per 100,000) compared with the 70-74 age group (13 admissions per 100,000) in non-Indigenous persons.

**Table 2**
**Number & proportion of hospital admissions for alcoholic psychoses by indigenous status & type of psychosis, 1981 - 1992**

| | Indigenous | | Non-Indigenous | | Total |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Alcohol withdrawal | 676 | 30 | 1,545 | 70 | 2,221 |
| Brain damage | 59 | 15 | 327 | 85 | 386 |
| Functional psychoses | 149 | 48 | 160 | 52 | 309 |
| Other | 47 | 49 | 49 | 51 | 96 |
| **Total** | **931** | **31** | **2,081** | **69** | **3,012** |

**Table 3**
**Number & proportion of hospital admissions for alcoholic psychoses by indigenous status & type of psychosis, 1992**

| | Indigenous | | Non-Indigenous | | Total |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Alcohol withdrawal | 96 | 40 | 145 | 60 | 241 |
| Brain damage | 5 | 16 | 27 | 84 | 32 |
| Functional psychoses | 25 | 56 | 20 | 44 | 45 |
| Other | 7 | 78 | 2 | 22 | 9 |
| **Total** | **133** | **41** | **194** | **59** | **327** |

***Functional psychoses:*** Indigenous rates peaked in the 30-34 age group (122 admissions per 100,000) compared with the 45-49 age group (2.3 admissions per 100,000) in non-Indigenous persons.

***Other alcoholic psychoses:*** Indigenous rates peaked in the 50-54 age group (30 admissions per 100,000) compared with a steady rate over all age groups of less than 1 per 100,000 in non-Indigenous persons.

## Age standardised rates

The age standardised rates (ASRs) for alcoholic psychoses were higher for Indigenous persons than non-Indigenous persons for all categories of alcoholic psychoses and for all years was higher for males compared with females (Table 4, page 4; Figure 3, page 5; Figure 4, page 6; Figure 5, page 6 and Appendix Table A2).

The ASRs for Indigenous males ranged from 263 admissions per 100,000 to 662 admissions per 100,000 - 16 to 39 times the rates of non-Indigenous males. For Indigenous females the ASRs ranged between 42 and 147 admissions per 100,000 - 13 to 63 times those of non-Indigenous females.

There were several statistically significant changes in the ASRs for alcoholic psychoses over the 12 year period (Table 5, page 5 and Appendix Table A3):

- the rate for alcohol withdrawal decreased (by 4.2% per year in Indigenous persons and by 3.0% per year in non-Indigenous persons);
- there was a decrease in the rate for brain damage in non-Indigenous persons (5.8% per year); and
- the rate due to functional psychoses increased among Indigenous persons (by 10.8% per year).

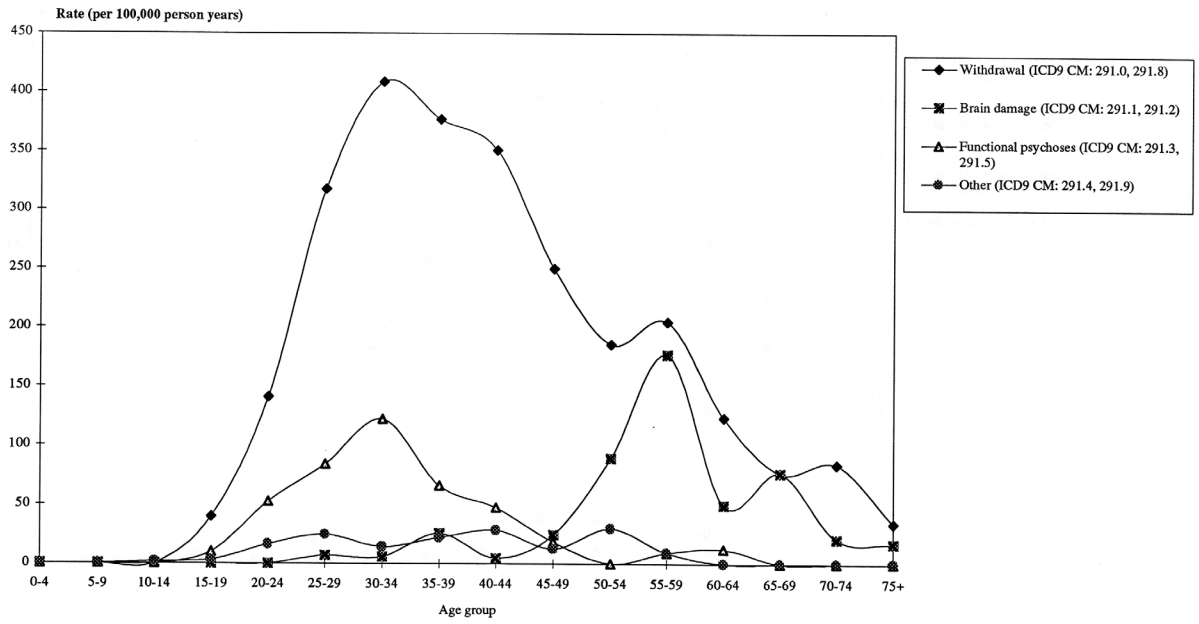
There were several significant changes in the age standardised hospitalisation rates for alcoholic psychoses by sex and Indigenous status over the 12 year period (Table 6, page 5), with male non-Indigenous rates decreasing by 3.7% per year, female Indigenous rates decreasing by 4.7% per year and non-Indigenous rates decreasing by 2.8% per year.

## Alcohol withdrawal

There were 2,221 hospital admissions (Indigenous 676 and non-Indigenous 1,545) due to alcohol withdrawal, an average of 185 per year. The highest number of cases occurred in 1992 for Indigenous persons (96 admissions) and in 1983 for non-Indigenous persons (150 admissions).

The ASR for alcohol withdrawal for the whole period was 151 admissions per 100,000 for Indigenous persons and 8 per 100,000 for non-Indigenous persons - in both groups rates decreased significantly between 1981 and 1992 (Indigenous: - 4.2% per year and non-Indigenous: - 3.0% per year). The Indigenous:non-Indigenous rate ratio for alcohol withdrawal over the period was 18.

**Figure 1**
**Age specific rates of hospitalisation by type of alcoholic psychoses, Indigenous persons 1981 - 1992**



## Brain damage

There were 386 hospital admissions (Indigenous 59 and non-Indigenous 327) due to brain damage, an average of 32 per year. The highest number of cases occurred in 1989 for Indigenous persons (10 admissions) and in 1984 for non-Indigenous persons (46 admissions).

The ASR for brain damage for the whole period was 21 admissions per 100,000 for Indigenous persons and 2 per 100,000 for non-Indigenous persons. Rates for non-Indigenous persons decreased significantly between 1981 and 1992 by 5.8% per year, but there was no significant change in Indigenous rates. The Indigenous:non-Indigenous rate ratio for brain damage over the period was 12.

## Functional psychoses

There were 309 hospital admissions (Indigenous 149 and non-Indigenous 160) due to functional psychoses, an average of 26 per year. The highest number of cases occurred in 1991 (35 Indigenous admissions vs 21 non-Indigenous admissions) with the number of cases among Indigenous persons increasing markedly from 1988 onwards.

The ASR for functional psychoses for the whole period was 28 admissions per 100,000 for Indigenous persons and 1 per 100,000 for non-Indigenous persons. Rates for Indigenous persons increased significantly between 1981 and 1992 by 10.8% per year but there was no significant change in rates for non-Indigenous persons. The Indigenous:non-Indigenous rate ratio for functional psychoses over the period was 35.

## Other alcoholic psychoses

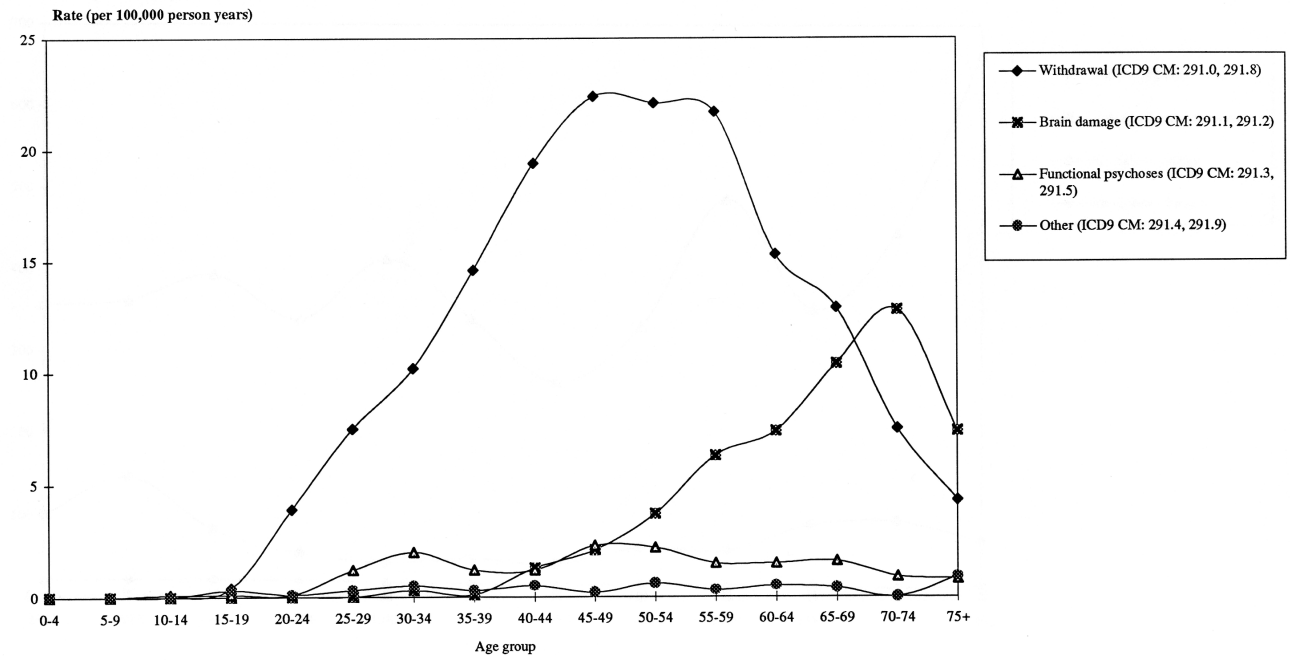
There were 96 hospital admissions (Indigenous 47 and non- Indigenous 49) due to other alcoholic psychoses, an average of 8 per year. The highest number of cases occurred in 1991 (8 Indigenous admissions and 9 non-Indigenous admissions).

The ASRs for other alcoholic psychoses for the whole period were 10 admissions per 100,000 for Indigenous

**Table 4**
**Age standardised rates & rate ratio ratios for hospital admissions for alcoholic psychoses by indigenous status, sex & type of psychoses, 1981 - 1992**

| | Indigenous | Non-Indigenous | Indigenous: Non-Indigenous rate ratio |
|---|---|---|---|
| **Sex** | | | |
| Males | 363 | 18 | 20 |
| Females | 66 | 4 | 18 |
| **Psychosis** | | | |
| Withdrawal | 151 | 8 | 18 |
| Brain damage | 21 | 2 | 12 |
| Functional psychoses | 28 | 1 | 35 |
| Other | 10 | 0 | - |
| **Total** | **209** | **11** | **19** |

**Figure 2**
**Age specific rates of hospitalisation by type of alcoholic psychoses, non-Indigenous persons 1981 - 1992**



persons and negligible rate for non-Indigenous persons. There were no significant changes in rates between 1981 and 1992.

## Conclusion

This data shows that rates of hospital admissions for alcoholic psychoses are higher for Indigenous than non-Indigenous persons and that there are higher rates for males compared to females. Alcoholic psychoses also affect Indigenous persons at a younger age than non-Indigenous persons.

From 1981 to 1992 the rate of functional psychoses in Indigenous persons increased significantly by 10.8%. Similar findings were obtained from a Northern Territory study.[8] Although alcohol related hospitalisation rates for Indigenous males and females did not change substantially between 1977 and 1982, the rates for Indigenous males with a diagnosis of alcoholic psychoses, which comprised a quarter of all alcohol related separations among Indigenous males, increased by six times.

Such an increase was not seen for Indigenous females or non-Indigenous persons. The Indigenous males diagnosed with alcoholic psychoses were younger than diagnosed non-Indigenous males (the modal age groups were 25-44 years for Indigenous males and 45-64 years for non-Indigenous males).

There are two possible reasons for the higher incidence of alcoholic psychoses in Indigenous persons and the younger age at which it occurs. The first is that Indigenous persons start drinking earlier than non-Indigenous persons and consume more alcohol. The second is that Indigenous persons may have a different susceptibility to alcohol.

8 Kahn MW, Hunter E, Heather N, Tebbutt J. "Australian Aborigines and alcohol: a review". *Drug & Alcohol Review*; 1990, 10, 351-366.

**Figure 3**
**Age standarised rates of hospitalisation for alcoholic psychoses by indigenous status & sex, 1981 - 1992**

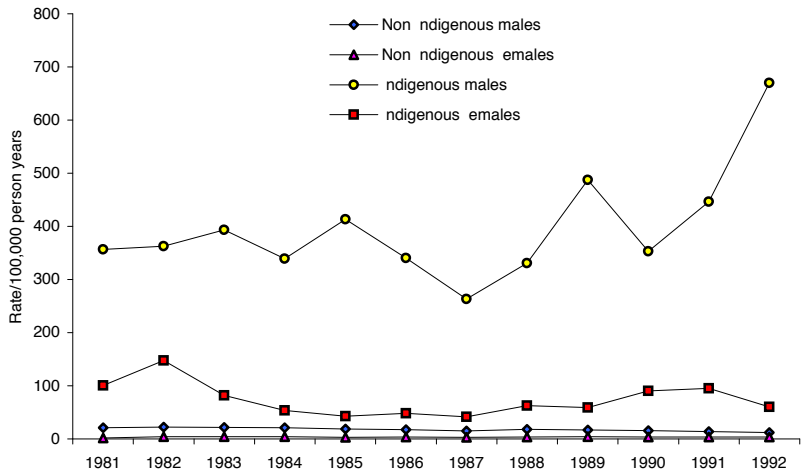



**Table 5**
**Mean annual changes in age standardised hospitalisation rates for alcoholic psychoses by indigenous status, 1981 - 1992**

| | Indigenous | | Non-Indigenous | |
|---|---|---|---|---|
| | % | Significance | % | Significance |
| Alcohol withdrawal | -4.2 | s | -3.0 | s |
| Brain damage | 1.9 | ns | -5.8 | s |
| Functional psychoses | 10.8 | s | 4.5 | ns |
| Other | -1.0 | ns | 1.7 | ns |

**Table 6**
**Mean annual changes in age standardised hospitalisation rates for all alcoholic psychoses by indigenous status & sex, 1981 - 1992**

| | Indigenous | | Non-Indigenous | | Total | |
|---|---|---|---|---|---|---|
| | % | Significance | % | Significance | % | Significance |
| Males | -0.9 | ns | -3.7 | s | -1.0 | ns |
| Females | -4.7 | s | 2.1 | ns | 1.6 | ns |
| **Total** | **-1.5** | **ns** | **-2.8** | **s** | **0.0** | **ns** |

The pattern of differing alcohol consumption between Indigenous and non-Indigenous populations were highlighted by a comprehensive health survey in the Kimberley region published in 1991, which found a larger proportion of the Indigenous population abstained from alcohol compared to the non-Indigenous population.[9]

However the 1991 study found of those Indigenous persons who drink, that a greater proportion drink at levels considered hazardous and harmful to health. This research also found severe psychological reactions to alcohol, ie severe panic, auditory hallucinations, visual hallucinations and paranoid ideation were not uncommon.[10]

Occurrence of these reactions increased with the frequency of alcohol consumption and was related to the quantity of alcohol consumed per drinking day. Males reported the occurrence of these psychological reactions most frequently between the ages of 31 and 40 years, falling thereafter with age.

This research also collected information on 'culturally informed paranormal experiences,' such as having 'seen' a dead relative in clear consciousness, having extra-corporeal experiences in the course of performing healing activities and similar experiences or visions in the context of religious ceremonies. The proportion of Indigenous persons experiencing such phenomena increased from the age of 41 - the inverse of those experiencing severe psychological reactions. See Figure 6, page 7.

One theory to explain this apparent inverse relationship is that *"consciousness emerged as a consequence of the social forces of 'civilisation' suppressing an earlier state in which the individual's subjectivity was embedded in a culturally informed hallucinatory state, interpreted as the mediation of the supernatural - the gods."*[11]

9 Hunter E, Hall W, Spargo R. *The distribution and correlates of alcohol consumption in a remote Aboriginal population.* Sydney, National Drug and Alcohol Research Centre, University of NSW, 1991.

10 Ibid.

11 Jaynes J. *The origin of consciousness in the breakdown of the bicameral mind*. Boston, Houghton Mifflin, 1976.

**Figure 4**
**Age standardised rates for hospital admissions by type of alcoholic psychoses - Indigenous persons, 1981 - 1992**

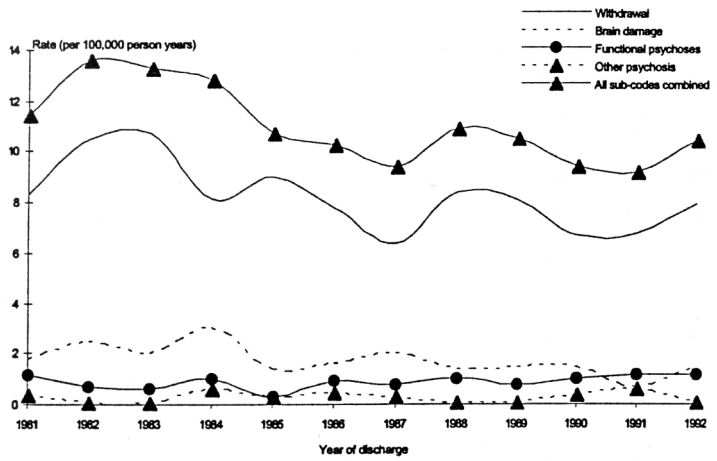



**Figure 5**
**Age standardised rates for hospital admissions by type of alcoholic psychoses - non-Indigenous persons, 1981 - 1992**

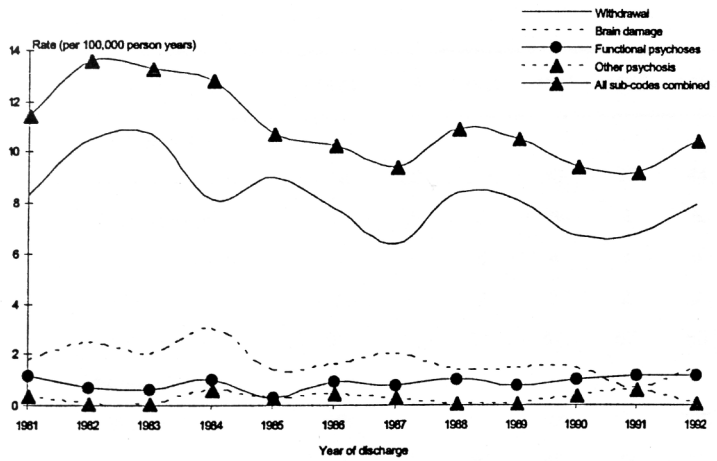
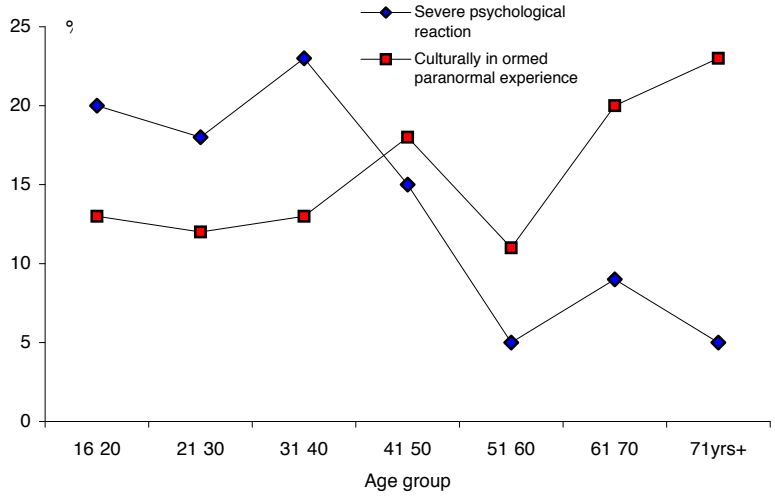


**Figure 6**
**Severe psychological reactions & culturally informed paranormal experiences among Indigenous persons in the Kimberley**




Adapted from Hunter E. *Aboriginal health and history. Power and prejudice in remote Australia*. Oxford, Cambridge University Press, 1993.

While this is highly speculative, many older Indigenous persons had clearly experienced such culturally meaningful phenomena. These were less common among younger Aboriginals for whom there was an increase in culturally meaningless and frightening ego-alien experiences.

The apparent increase in 'psychotic' experiences among Aboriginal youth may be due to their diminishing capacity to integrate experiences that were previously meaningful and which, as a consequence, are projected and experienced as threatening and ego-alien. Their inability to integrate these experiences may be due to social pressures, compounded by alcohol, undermining traditional practices and explanations.

There is a suggestion from the United States that in the Afro-American population very low levels of self-esteem exist, which is associated with recurrent themes of loss, will especially cause many social problems if the social fabric has been fractured.[12] This literature highlights the significance of environmental factors in sustaining a psychological climate in the Indigenous population that fosters the high levels of persecutory anxiety and self hate known to be widely prevalent in the younger drinking population in the Kimberley region in WA.

The abuse of alcohol over an extended period of time frequently engenders social problems in families, local communities and law enforcement agencies that attempt to deal with antisocial behaviour. Another consequence of alcohol abuse in Indigenous populations are the high rates of alcohol related injuries and illnesses which often result in a concomitant burden on the health system through expensive inpatient treatment.

12 Steele S. "Being black and feeling blue". *Family Therapy Networker*, July/August 1993.

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# Appendix Data Tables

### Table A1
### Number of hospital admissions by type of alcoholic psychosis & indigenous status, 1981 - 1992

| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indigenous** | | | | | | | | | | | | | |
| Withdrawal | 52 | 52 | 62 | 43 | 57 | 44 | 43 | 42 | 67 | 55 | 63 | 96 | 676 |
| Brain damage | 3 | 2 | 2 | 3 | 4 | 5 | 5 | 8 | 10 | 3 | 9 | 5 | 59 |
| Functional psychoses | 5 | 5 | 5 | 4 | 4 | 9 | 3 | 13 | 17 | 24 | 35 | 25 | 149 |
| Other | 3 | 4 | 2 | 7 | 2 | 2 | 1 | 2 | 5 | 4 | 8 | 7 | 47 |
| Sub total | 63 | 63 | 71 | 57 | 67 | 60 | 52 | 65 | 99 | 86 | 115 | 133 | 931 |
| **Non-Indigenous** | | | | | | | | | | | | | |
| Withdrawal | 108 | 144 | 150 | 120 | 136 | 123 | 103 | 141 | 140 | 113 | 122 | 145 | 1,545 |
| Brain damage | 24 | 32 | 27 | 46 | 22 | 27 | 33 | 23 | 26 | 27 | 13 | 27 | 327 |
| Functional psychoses | 16 | 8 | 8 | 13 | 3 | 12 | 10 | 17 | 13 | 19 | 21 | 20 | 160 |
| Other | 4 | 1 | 1 | 7 | 4 | 6 | 5 | 1 | 3 | 6 | 9 | 2 | 49 |
| Sub total | 152 | 185 | 186 | 186 | 165 | 168 | 151 | 182 | 182 | 165 | 165 | 194 | 2,081 |
| **Persons** | | | | | | | | | | | | | |
| Withdrawal | 160 | 196 | 212 | 163 | 193 | 167 | 146 | 183 | 207 | 168 | 185 | 241 | 2.221 |
| Brain damage | 27 | 34 | 29 | 49 | 26 | 32 | 38 | 31 | 36 | 30 | 22 | 32 | 386 |
| Functional psychoses | 21 | 13 | 13 | 17 | 7 | 21 | 13 | 30 | 30 | 43 | 56 | 45 | 309 |
| Other | 7 | 5 | 3 | 14 | 6 | 8 | 6 | 3 | 8 | 10 | 17 | 9 | 96 |
| Total | 215 | 248 | 257 | 243 | 232 | 228 | 203 | 247 | 281 | 251 | 280 | 327 | 3,012 |

## Table A2
## Age standardised rates & rate ratios of hospital admissions for alcoholic psychoses by indigenous status & sex, 1981 - 1992

| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | Mean 1981-1992 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indigenous (rate per 100,000)** | | | | | | | | | | | | | |
| Males | 357 | 362 | 393 | 339 | 413 | 340 | 263 | 331 | 487 | 353 | 446 | 662 | 363 |
| Females | 101 | 147 | 82 | 54 | 43 | 48 | 42 | 63 | 59 | 91 | 95 | 70 | 66 |
| **Non-Indigenous (rate per 100,000** | | | | | | | | | | | | | |
| Males | 21 | 23 | 22 | 21 | 18 | 18 | 15 | 18 | 17 | 15 | 14 | 17 | 18 |
| Females | 2 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| **Indigenous:Non-Indigenous rate ratio** | | | | | | | | | | | | | |
| Males | 17 | 16 | 18 | 16 | 22 | 19 | 17 | 18 | 29 | 23 | 32 | 39 | 20 |
| Females | 63 | 34 | 19 | 13 | 15 | 14 | 13 | 18 | 14 | 24 | 24 | 18 | 18 |

## Table A3
## Age standardised rates & rate ratios of hospital admissions by type of alcoholic psychosis & indigenous status, 1981 - 1992

| | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | Mean 1981-1992 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indigenous (rate per 100,000)** | | | | | | | | | | | | | |
| Withdrawal | 181 | 203 | 202 | 140 | 185 | 135 | 113 | 125 | 167 | 143 | 143 | 263 | 151 |
| Brain damage | 16 | 9 | 9 | 16 | 22 | 22 | 27 | 35 | 47 | 12 | 33 | 21 | 21 |
| Functional psychoses | 19 | 19 | 14 | 12 | 10 | 26 | 6 | 27 | 36 | 56 | 71 | 51 | 28 |
| Other | 10 | 19 | 8 | 25 | 5 | 5 | 2 | 4 | 14 | 7 | 18 | 17 | 10 |
| Sub total | 226 | 250 | 232 | 193 | 222 | 189 | 148 | 191 | 265 | 217 | 265 | 351 | 209 |
| **Non-Indigenous (rate per 100,000)** | | | | | | | | | | | | | |
| Withdrawal | 8 | 11 | 11 | 8 | 9 | 8 | 6 | 8 | 8 | 7 | 7 | 8 | 8 |
| Brain damage | 2 | 3 | 2 | 3 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 |
| Functional psychoses | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Other | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | - | - |
| Sub total | 11 | 14 | 13 | 13 | 11 | 10 | 9 | 11 | 11 | 9 | 9 | 10 | 11 |
| **Indigenous:Non-Indigenous rate ratio** | | | | | | | | | | | | | |
| Withdrawal | 22 | 19 | 19 | 17 | 21 | 17 | 18 | 15 | 21 | 21 | 21 | 33 | 18 |
| Brain damage | 9 | 3 | 4 | 5 | 15 | 14 | 13 | 25 | 32 | 8 | 47 | 14 | 12 |
| Functional psychoses | 16 | 27 | 23 | 12 | 33 | 28 | 7 | 27 | 45 | 56 | 59 | 42 | 35 |
| Other | 26 | 194 | 76 | 42 | 17 | 11 | 6 | 40 | 142 | 18 | 30 | 166 | - |
| Total | 20 | 18 | 17 | 15 | 21 | 18 | 16 | 18 | 25 | 23 | 29 | 34 | 19 |