Reducing alcohol-related harm experienced by Indigenous Australians: identifying opportunities for Indigenous primary health care services

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A 2006 critical review of Indigenous health research, including alcohol-specific studies, found that the majority of publications in this field have been descriptive, rather than focusing on measurement or intervention, and that this pattern of research output has persisted over time. In 1997/98, for example, 75% of publications were descriptive, 7% were measurement and 18% were intervention studies. While the overall number of publications was greater in 2001/03 (101 compared to 80), the type of studies remained similar: 78% descriptive, 9% measurement and 13% intervention.

One consequence of this distribution of Indigenous research effort is that the deleterious impact of alcohol on the health of individual Indigenous Australians, and on the social functioning of their communities, has been well documented. In terms of drinking patterns, Indigenous Australians are approximately twice as likely to consume alcohol at a level that increases their risk of harm in the long-term, and approximately 1.5 times more likely to drink in a manner that increases their risk of harm in the short-term. With regard to harm, successive Australian Commonwealth Government and international reports since 1979 have acknowledged the significant contributory role of alcohol in poor Indigenous health, relative to the rest of the Australian community.

Nationally, for example, the rate of alcohol-related hospital admissions (acute intoxication, liver disease, dependence) for Indigenous males in 2002/03 was between two and seven times greater than for non-Indigenous males. Alcohol-related social problems are also disproportionately high in Indigenous communities: 71.3% of Indigenous homicides between 1999 and 2003 occurred in situations where both perpetrator and victim were drinking, compared with 19.5% of non-Indigenous homicides.

A second consequence of the distribution of Indigenous research is that there appears to have been relatively little effort in generating data on how positive change for Indigenous Australians might best be facilitated. This observation is further enhanced by a more recent review of the peer-reviewed intervention literature targeting smoking, alcohol, nutrition and physical activity among Indigenous Australians, published between 1990 and August 2007. This review identified only four intervention and three dissemination studies targeting alcohol, each of which were characterised by weak effects. Both the lack of intervention studies and their relatively poor methodological rigour replicate the findings of a 2000 review, which identified 14 evaluations from the peer-review and non-peer review literature, covering a range of topics: abstinence-based treatment, health promotion activities, acute care interventions and supply reduction strategies.

The body of literature to date, therefore, appears to present something of a dilemma. On one hand, it is clear that alcohol results in a disproportionately high degree of harm for Indigenous Australians. On the other hand, there is very little evidence from rigorous interventions trials as to which strategies are most cost-effective in reducing alcohol-related harm. One response is to search the non-peer-review literature since 2000 (the end date of the most recent search of the grey literature) in an effort to identify new intervention evaluations. Although this

Abstract

Objective: Identify key issues and opportunities relating to the dissemination of cost-effective interventions for alcohol in Indigenous-specific settings.

Methods: Update previous reviews of the Indigenous alcohol literature, particularly in relation to intervention and dissemination studies aimed at identifying and integrating into routine clinical care those strategies that are most cost-effective in reducing alcohol-related harm.

Results: The harmful use of alcohol has been identified as a major public health issue, which has a disproportionately high negative impact on Indigenous Australians. While the disproportionately high burden of harm borne by Indigenous Australian communities is well documented in descriptive studies, attempts to redress this imbalance through well-controlled intervention and dissemination studies appear to have been inadequate to date. There is compelling evidence from the non-Indigenous community that brief intervention is an effective treatment for harmful alcohol use, compared to the relatively lower levels of evidence for primary and tertiary level interventions. The effectiveness of brief intervention for alcohol in Indigenous Australian communities should, therefore, be examined.

Conclusions and Implications: An opportunity exists to implement brief intervention into Indigenous primary health care settings, as an evidence-based strategy using established resources. There is the possibility that such Indigenous-specific health services research will lead the dissemination field in demonstrating how the implementation process can be successfully tailored to specific and defined clinical settings.

Key words: Indigenous, alcohol, brief intervention, dissemination, Indigenous primary health care.
is likely to identify quasi-experimental trials that need careful examination (since they have not been subjected to peer-review), the identification of only seven alcohol-specific intervention or dissemination studies between 1990 and 2007 in the peer-review literature,\textsuperscript{1} suggests this additional search is worthwhile. A second possible response is to consider the applicability of evidence distilled from intervention trials in non-Indigenous settings to Indigenous-specific settings, in order to gauge whether such interventions might reasonably be disseminated to Indigenous Australians.

The objective of this review is to identify promising future directions for reducing the disproportionately high deleterious impact of alcohol on Indigenous Australians. There are two specific aims. First, to examine the literature from 2000 to 2007 to identify any recent intervention studies. Second, to identify which alcohol interventions evaluated in non-Indigenous settings might most reasonably be disseminated into routine practice in Indigenous-specific primary health care settings.

**Indigenous-specific intervention studies, 2000-07**

The apparent reduction in Indigenous-specific intervention research in 2001-03 (13% of all studies) compared to 1997/98 (18% of all studies), combined with the lack of alcohol-specific intervention studies published in the peer-reviewed literature between 1990 and 2007,\textsuperscript{1,3} suggests few alcohol-specific intervention studies will have been reported in the non-peer-reviewed literature. To evaluate this likelihood, the National Drug Research Institute’s Annotated Bibliography of Indigenous Australian Alcohol and Other Drug Use was reviewed. This comprehensive database of both the peer-review and non-peer-review literature specific to Australian Indigenous research is much more likely than mainstream databases, such as Medline, to identify all articles specific to Australian Indigenous alcohol research.

The search strategy used the key terms ‘alcohol’ and ‘intervention’. In order to complement, rather than replicate, the 2000 review,\textsuperscript{1} the search years were restricted to 2000 to 2007. This search strategy identified 119 articles, the titles of which were printed and reviewed. Using categories adapted from a number of previous reviews,\textsuperscript{1,3,6} the articles were classified as reviews, measures, descriptive, intervention, dissemination, comment or book review or editorial, and other (extracts of original articles, media articles, not primarily alcohol-related, presentations, submissions to government agencies and theses). In addition to these previously used categories, a number of the articles in this database were identified as resources, rather than articles. Studies with ambiguous titles were categorised after reviewing their abstract. The outcome is delineated in Figure 1.

Figure 1 is consistent with the results of a previous review of Indigenous articles, in that a relatively small number of intervention evaluations for alcohol continue to be reported (2%),\textsuperscript{13} along with small numbers of dissemination (2%) and measures (2%) studies. In contrast, approximately 70% of articles between 2000 and 2007 were either descriptive or commentaries/editorials. None of the intervention (n=2) or dissemination (n=3) studies identified were from the non-peer review literature, indicating that the best recent intervention evidence for Indigenous-specific alcohol interventions is from a small number of studies published in the peer-review literature.

Translating evidenced-based interventions from non-Indigenous to Indigenous settings

As adequate, Indigenous-specific, evidence-based interventions are yet to be identified, a logical progression might be to apply evidence distilled from intervention trials in non-Indigenous to Indigenous populations. A number of compelling arguments support this approach: the lack of methodologically rigorous intervention trials in Indigenous-specific settings; the disproportionate burden of ill-health and disease experienced by Indigenous, relative to non-Indigenous, Australians;\textsuperscript{11} and the inevitable delay between the call for intervention research effort and the dissemination of cost-effective strategies.\textsuperscript{17}

Nevertheless, advocating the uptake into routine practice of interventions not supported by adequately rigorous trials conducted in relevant populations is controversial, requiring a high degree of caution. On the one hand, there is the increased risk of adverse events that are both unintended and not apparent in the study population. For example, different levels of risk for adverse reactions to cardiovascular drugs has been shown among different ethnic groups, with the possibility that these differences are genetic, cultural or both.\textsuperscript{18} The impact of historical events and cultural differences between Indigenous and non-Indigenous Australians in inhibiting the dissemination of national alcohol and other health-related policies to Indigenous communities have been clearly articulated,\textsuperscript{19} highlighting the likelihood that the effectiveness of alcohol interventions may differ between Indigenous and non-Indigenous Australians. In addition, there is a clear inequity principle regarding the acceptability of Indigenous Australians being offered interventions with lesser levels of evidence, resulting from uncertainty about the generalisability of the results, than has been applied to non-Indigenous Australians.

On the other hand, there are clear examples of public health benefits resulting from the implementation of interventions with sub-optimal evidence for their effectiveness, or the implementation of interventions into populations that differ from those in which the intervention evidence was obtained. For example, although treatment of childhood diarrhoea by intravenous drip was known to be effective prior to 1976, such treatment requires health facilities and clinical knowledge. On the basis of studies after 1976

**Figure 1:** Distribution of research types in the National Drug Research Institute’s Annotated Bibliography of Indigenous Australian Alcohol and Other Drug Use, 2000-2007 (n=119 articles identified).

<table>
<thead>
<tr>
<th>Type</th>
<th>% of Articles</th>
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<tbody>
<tr>
<td>Review</td>
<td>45</td>
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<tr>
<td>Measures</td>
<td>32</td>
</tr>
<tr>
<td>Descriptive</td>
<td>13</td>
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<tr>
<td>Intervention</td>
<td>2</td>
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<tr>
<td>Dissemination</td>
<td>4</td>
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<tr>
<td>Comment or editorial</td>
<td>2</td>
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<tr>
<td>Resources</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
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* Extracts of original articles (n=5), media articles (n=4), not primarily about alcohol (n=4), presentations (n=2), submissions to government agencies (n=2) and theses (n=1)
showing oral rehydration could also be effective, the World Health Organization implemented wide-spread oral rehydration programs, saving an estimated three million deaths from diarrhoea annually by 2000. Crucially, high-level evidence for the effectiveness of oral rehydration from randomised trials did not emerge until after the programs had been implemented.²⁰

One solution to the question of how rigorous and relevant the evidence should be before implementing an intervention into routine practice, is to advocate those strategies for which the positive consequences are likely to outweigh the negative.²¹ Applying this principle to the likely consequences of implementing alcohol interventions in Indigenous-specific settings, requires an examination of whether there are interventions that have both sufficient evidence for their effectiveness in non-Indigenous settings and little likelihood of deleterious outcomes should they not translate well to Indigenous settings.

Methodologically rigorous intervention trials in the alcohol field generally are relatively rare, in comparison to descriptive research.¹³ In general terms, intervention efforts can broadly be classified as primary (e.g. education, legislation), secondary (e.g. brief intervention in primary care) or tertiary (e.g. therapeutic communities) level strategies.²² Of these, the evidence-base is relatively weak for primary and tertiary level interventions.¹⁵ Although some supply reduction initiatives (primary interventions) have demonstrated positive effects, evaluations have been methodologically limited: studies are typically confined to non-randomly selected communities and there is clear scope to improve the reliability and validity of outcome measures.²³,²⁴

In addition to this limited internal validity, existing studies have limited generalisability because they have usually been implemented in a small number of remote Indigenous communities.²³-²⁵ The extent to which supply reduction is feasible and effective in urban and rural Indigenous communities, in which the majority of Indigenous Australians live,¹¹ remains unclear. Similarly, there is a high level of uncertainty as to how both primary and tertiary level interventions might translate to Indigenous communities. For example, a volumetric tax (primary level intervention) is likely to have differential effects on communities of lower, compared to higher, socio-economic status, and there are currently no rigorously collected data on the appropriateness and physiological impacts of pharmacotherapies (tertiary level intervention) for Indigenous Australians.

In contrast, there is relatively strong evidence from non-Indigenous settings for the cost-effectiveness of secondary level interventions, particularly brief interventions.²⁶-²⁷ Although difficult to define accurately, brief intervention describes a range of activity, typically delivered in primary health care settings, such as general practice, community counselling and hospital emergency departments, and targeting individuals who may not be presenting specifically for an alcohol-related problem.²⁸ Brief intervention activities include screening, the provision of brief advice, referral to specialist support where indicated and even some counselling techniques, such as brief motivational interviewing.²⁹

Brief intervention is an integral component of recommended approaches to prevent and treat harmful alcohol use.³⁰-³² Screening for excessive alcohol consumption, followed by advice and/or counselling for those drinking hazardously to reduce their consumption, has been shown to be cost-effective in reducing both alcohol consumption and alcohol-related harm.³³ A major advantage of brief intervention is not that it is necessarily more effective than more intensive interventions, but that it can be delivered at lower cost, resulting in relatively greater cost-effectiveness. Brief intervention has shown to be most cost-effective in reducing alcohol consumption among non-dependent drinkers who are not seeking treatment.³⁴ More specifically, brief intervention for alcohol has been shown to reduce alcohol-related trauma,³⁵ hospitalisations and deaths.³⁶ Although brief intervention is much less cost-effective in reducing alcohol-related harm among dependent drinkers, it can be a useful predecessor to more intensive and specialist treatment.³⁷

To date, there is only one published study of implementing brief intervention for alcohol in Indigenous health-care settings,³⁸ and no published evaluations of its effectiveness at reducing alcohol related harm among Indigenous Australians.³⁹,⁴⁰

Given the strength of the evidence base for alcohol brief intervention in non-Indigenous populations,²⁷,²⁸ along with the relatively small likelihood of negative consequences from providing brief advice to low-dependent problem drinkers, especially in health care settings, it is most probable that, on balance, brief interventions are likely to provide more benefit than harm for Indigenous Australians. Certainly the dissemination of brief intervention from non-Indigenous to Indigenous-specific settings is likely to be more ethically defensible than for either primary or tertiary level interventions, given the current evidence base. Although establishing the likely suitability for brief interventions for Indigenous settings is a necessary step, it is also crucial to examine the likelihood that brief intervention could, in practice, be reasonably integrated into routine use in Indigenous-specific health care settings.

Opportunities for Indigenous-specific dissemination research

Despite compelling evidence that brief interventions are cost-effective in non-Indigenous settings, their dissemination into routine, mainstream primary care practice has been, and continues to be, problematic. In general terms, dissemination refers to the uptake in continued use of evidenced-based interventions in clinical practice.²¹ Although dissemination is a relatively emerging field of study, it is now clear that the development and publication of new knowledge is insufficient to change clinical practice initially,³⁵,³⁶ while barriers to the maintenance of change over time are also being identified.³⁹-⁴¹

A number of specific reasons for the difficulty in modifying and maintaining changes in health care providers’ practice are being articulated in the research literature and can be broadly categorised into factors associated with individual clinicians (e.g. a lack of clinicians’ time and their perceived lack of expertise), the organisation (e.g. barriers related to the practice environment, such as inefficient systems and processes to facilitate systematic prevention and treatment activities) and the patient (e.g. their preferences for clinical care).⁴² Despite these difficulties, there are at least three reasons to support the contention that brief interventions are not only suitable for uptake in Indigenous settings, but provide the opportunity for Australian Indigenous research to take a lead role internationally in establishing the mechanisms by which research most effectively translates into practice.
1. There is qualitative evidence from ethnographic studies of Indigenous ex-drinkers that alcohol-related medical problems and a doctor’s health advice were influential factors in their decision to cease or reduce drinking.\textsuperscript{41} The acceptability of health advice delivered by doctors, and possibly other medically trained staff, suggests the effectiveness of brief interventions delivered by clinical staff may be enhanced in Indigenous health care settings.

2. The appropriate management of alcohol-related problems is promoted as core business for Indigenous primary health-care services. A 1998 survey of 29 agencies primarily servicing Indigenous people found that about half were already offering a range of treatment options for alcohol problems that, in some cases, included brief intervention.\textsuperscript{44} More recent recognition of the need for evidence-based screening is exemplified by the development of Indigenous-specific alcohol treatment guidelines\textsuperscript{30,45} and the inclusion of alcohol screening as a mandatory component of Indigenous-specific Medicare Benefits Schedule preventive health assessment items.\textsuperscript{46}

3. There is great potential to increase Indigenous Australians’ access to high-quality treatment through Indigenous primary health-care settings: approximately 90% of episodes of care in Aboriginal Community Controlled Health Services are with Indigenous Australians,\textsuperscript{47} compared to an estimated 1% of General Practice (GP) consultations.\textsuperscript{48} Although the interpretation of this low utilisation of GPs by Indigenous Australians requires caution, given the high rates of under-reporting of Indigenous status in mainstream health services and the non-random distribution of the Indigenous Australian population,\textsuperscript{49} there is clearly great potential to provide evidence-based screening and brief intervention to a substantial proportion of Indigenous patients in Indigenous health care settings. Despite the potential for brief interventions, mechanisms for their successful dissemination into Indigenous primary health care settings are yet to be identified. In practice, this potential will not be realised if they cannot be demonstrably and effectively integrated into the routine delivery of primary health care. The results of this review suggest that current dissemination efforts are either not occurring systematically, or are yet to be substantially published in the peer and non-peer review literature: only two published studies occurring systematically, or are yet to be substantially published in Indigenous-specific health care settings to date,\textsuperscript{43,45} due primarily to a lack of clarity about how clinic, patient, Indigenous health worker and GP factors might best fit together in a specific setting.\textsuperscript{34}

There are two primary negative outcomes associated with the lack of dissemination research in the alcohol-related Indigenous health field in Australia: the evident lack of progression from describing Indigenous health problems to effectively implementing evidence-based interventions to address them; and Indigenous Australians’ disproportionately poor access to evidence-based interventions relative to the alcohol-related burden of harm they experience. The emerging consensus in relation to dissemination of interventions is that there is no single strategy that will successfully overcome these barriers: a number of factors relating to the needs of individual clinicians, and the environments in which they practice, need to be addressed.\textsuperscript{51} These include the initial availability of reliable and valid screening tools and resources, the provision of cost-effective training and ongoing support mechanisms for clinical staff, administrative and systems changes to reflect new procedures (such as the integration of new screening questions into routine patient data collection processes) and recognition of the need to involve and support the roles of non-clinical staff in such system-level modifications.\textsuperscript{37-40,52}

Dissemination research identifying barriers to the uptake of brief intervention for alcohol by health care providers, and evidence for how these barriers might be overcome, is beginning to appear in the literature.\textsuperscript{33-35} A 2003 study, for example, reported that targeting specific barriers did not improve the uptake of brief intervention into routine care over the long term.\textsuperscript{53} This led the authors to conclude that future dissemination research needs to more specifically identify and target the crucial elements required to facilitate the widespread adoption of brief intervention in primary health care. A subsequent study (2005) reported statistically significant higher rates of brief intervention activity among GPs receiving ongoing support, compared to those that did not receive such support.\textsuperscript{54} In relation to the availability of reliable and valid screening tools and resources, the Drink-Less package is an example of a resource developed to facilitate the widespread uptake of brief intervention in primary care, and for which evidence of its feasibility for use in routine clinical care is emerging.\textsuperscript{52} In terms of training and ongoing support for clinical staff in taking up such resources, a recent analysis showed that while there is little difference between academic detailing, computerised reminder systems and interactive continuing medical education, each of these are more cost-effective than targeted payments.\textsuperscript{56}

These recent advances, in response to recognition of a need for rigorous evidence as to which strategies most cost-effectively modify and maintain changes within existing health-care systems,\textsuperscript{36,57} are promising. How strategies might be combined and tailored to optimise their effectiveness in defined settings, such that they are most likely to result in the successful integration of brief intervention for harmful alcohol use into the provision of routine clinical care, remains to be carefully evaluated. This is no straightforward task, as is evident by the relative lack of rigorous evaluation of dissemination strategies in mainstream health services, as well as the early termination of the most comprehensively designed randomised controlled trial of brief intervention for alcohol in Indigenous-specific health care settings to date,\textsuperscript{43} due primarily to a lack of clarity about how clinic, patient, Indigenous health worker and GP factors might best fit together in a specific setting.\textsuperscript{34}

**Conclusion**

Despite the evident difficulties, an opportunity nonetheless exists to implement and rigorously evaluate the integration of evidence-based brief intervention, using established resources, into Indigenous-specific settings. The risk of unintended negative consequences is currently too great to similarly advocate disseminating primary and tertiary level interventions into Indigenous settings: these first require high-quality evidence from Indigenous-specific intervention evaluations. Demonstrating how evidence-based interventions can most cost-effectively be tailored for, and integrated into, routine health care services, would potentially lead the international dissemination field, in both Indigenous and non-Indigenous health-care service provision. Since there is unlikely to be one model relevant to all Indigenous health services, given substantial heterogeneity between Indigenous communities across Australia, the opportunity to conduct
dissemination research in multiple services, demonstrating the level of tailoring required to optimise the integration of brief intervention into routine systems of care, is there to be grasped.

References