

Review of the misuse of kava among Indigenous Australians

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Introduction

Indigenous Australians experience a significant, disproportionate burden of ill-health when compared with non-Indigenous Australians. This is evidenced in the higher rates of disease and injury in the Indigenous population and their substantially lower life expectancy [1, 2]. The factors contributing to the poor health status of Indigenous Australians are extensive and complex, and reflect events involving dispossession, alienation, and segregation. Despite the multiplicity of factors responsible for the sub-standard health status of Indigenous people, substance use and abuse is one factor that has been identified as having a detrimental impact on poor health [3, 4]. A considerable body of research exists highlighting the deleterious impact of alcohol on the health and wellbeing of Indigenous people [5-7], but much less attention has been directed to the impact of kava.

Kava is a psychoactive substance used predominantly by Indigenous people in the Northern Territory, particularly Arnhem Land communities [8, 9]. Much controversy has surrounded the use of kava by Indigenous Australians due to the surfacing of reports detailing the health and social effects of prolonged consumption and the apparent lack of kava-related cultural norms in Indigenous communities in Australia to constrain consumption [9, 10]. By way of generating a greater understanding on the impact of kava on the health and wellbeing of Indigenous people, this paper will review the recent literature. Given the integral role of policy in minimising the use of drugs, an important focus of this review will include the legislative restrictions imposed in Australia on the use and importation of kava.

This review will begin by summarising kava in terms of its chemistry, traditional use, and preparation practices. This will be followed by an examination of kava use in the Indigenous Australian population, including its health and social effects. The history of kava legislation in Australia will then be discussed, and the implications of current kava policy addressed.

Kava

Kava is the ground rhizome of the plant *Piper methysticum* Forst. f., a member of the black pepper family. Cultivated kava is a dense, leafy green plant that is generally harvested when it is approximately six to eight feet in height. The plants take approximately five to seven years to mature, with a minimum of four years maturity required to produce high quality kava. The constituents of kava are a group of active chemicals known as kava lactones, which are naturally present in the root of the plant. To date, 19 kava lactones have been identified in the kava root, six of which have been described as the major active constituents. The kava lactones produce a number of effects when ingested including: analgesic, sedative, soporific, local anaesthetic, and muscle relaxant [8, 11].

Kava is native to the Pacific Island region and has an important, long-established role in ceremonial events and social occasions [12, 13]. For example, kava is offered to important individuals as a sign of respect. It is used as a means of strengthening social and familial ties, particularly among males, and assisting communication with spirits. Defining features of traditional kava practices in the South Pacific are the restrictions placed on its consumption, including who can drink kava and when. Such limitations usually promote the consumption of kava in a safe and controlled manner.

The traditional preparation of kava involves chewing or grounding the root before soaking it in water. The water is then strained, served in a half coconut shell, and consumed in one mouthful. The potency of the kava drink can vary greatly depending on the proportions and potency of kava lactones in the plant variety used, the method of preparation, and the degree of dilution in the preparation process [8, 12, 14].

For further general information on kava, including its cultivation, chemistry, and patterns of use in the South Pacific, please see Davis and Brown [12], Lebot, Merlin and Lindstrom [15] and McDonald and Jowitt [13].

Kava use and misuse in Australia

Contemporary consumption of kava has deviated from its traditional purposes, as is evident in Australia. The introduction of kava into Australia occurred in late 1981 and early 1982, when a group of Aboriginal people from Yirrkala, an Arnhem Land community, travelled to Fiji to examine community management. During this visit the Indigenous Australians were introduced to the ceremonial use of kava. They witnessed the relaxing effect kava had upon the individual, whereby it engendered a state of serenity and peacefulness in the consumer [16]. This effect appealed to the Indigenous Australians, as it contrasted greatly with the many problems associated with excessive alcohol consumption, namely aggression and violence, which was of increasing concern in their own communities [9].

At the time the Indigenous Australians visited Fiji, the Australian Commonwealth Government was promoting self determination among Indigenous Australians. This notion of freedom of choice encouraged some important changes, such as the Uniting Church's decision to relinquish control over the north-east Arnhem Land communities. This decision meant Indigenous people in the region were responsible for managing their own community affairs. The cumulative effect of these acts of freedom and independence, together with their positive exposure to kava use in Fiji, led the Indigenous Australians to advocate for the availability of kava in Australia [16]. The rationale prompting this decision was that kava would act as an appropriate substitute to alcohol, thus reducing many of the alcohol-related problems prevalent in the Indigenous Australian communities [9, 17]. Soon after its introduction to Yirrkala, the praises of kava spread throughout Arnhem Land, subsequently leading to its consumption in an additional seven major communities: Minjilang (Croker Island); Warruwi, Maningrida, Ramingining, Milingimbi, Galiwinku (Elcho Island); Gapuwiyak (Lake Evella) [17].

Kava consumption in Australia differs somewhat from traditional practices, due in part to the lack of ceremonial and cultural association Indigenous Australians have with kava [8, 18-20]. Some Indigenous Australians use kava as an adjunct to traditional ceremonies, but kava is typically viewed as a social beverage. Kava in Australia is imported in a powdered form from Fiji, Tonga, and Samoa. The powdered kava is infused in water in a large bowl and people form a kava-drinking circle around the bowl. The person responsible for mixing the brew then distributes the kava drink among group members

using the one drinking cup. Kava may be consumed day or night and is used by both males and females.

Data on the prevalence of kava use in the Indigenous Australian population is scarce and must be interpreted with great caution [21]. This is due to the challenges involved in assessing kava consumption, namely the ethical constraints placed on research procedures and participants' unwillingness to disclose kava consumption patterns due to the legislation associated with its use. A report by the Australian Institute of Health and Welfare [22], however, claimed 3.4% of Indigenous people aged 15 years and over had experimented with kava and 0.6% had used kava in the previous 12 months. Other statistics indicate that approximately 1% of Indigenous people are kava users [23]. Collectively, these statistics highlight that only a very small percentage of the Indigenous Australian population use kava. This compares with other drugs, such as alcohol, where 55% of Indigenous Australian adults report drinking at short-term to high-term risky levels [22].

The low incidence of kava use by Indigenous people is not unexpected, however, given that its use is generally limited to Arnhem Land communities. Figures illustrating kava consumption patterns in the Arnhem Land region are substantially higher than those for the general Indigenous population. Research conducted in the Miwatj region (eastern Arnhem Land) identified 46% of the male population and 18% of the female population as current kava users [24]. These statistics confirm that kava consumption is common among Indigenous people residing in these communities, and is more common among males than among females.

The following section will investigate the impact of kava use on the health and wellbeing of Indigenous people.

Impact of kava use on health

Research undertaken by Mathews and colleagues (1988) was perhaps the first rigorous study into the health effects of kava. This study involved interviewing Indigenous people living in Arnhem Land to ascertain levels of kava consumption. Participants' reports of kava consumption were verified with community health workers. The study utilised a variety of measurements to assess the effects of the long-term usage of large doses of kava. The findings demonstrated that the majority of the participants were either heavy or very heavy users of kava and experienced a number of health effects including: shortness of breath; redness and discolouration of the sclerae ('bloodshot eyes'); and significant reductions in body weight and skinfold thickness. The study highlighted that an increase in kava consumption was associated with a corresponding increase in poor health outcomes. Having established that kava consumption was associated with adverse health effects, the impetus was provided for further research into the health effects of kava use.

More recent research detailing the detrimental health effects of kava consumption is provided by Clough and colleagues [25] in an investigation in an Indigenous community in Arnhem Land. In line with the previous study, the research participants were interviewed to assess their exposure to kava use, and community health workers validated the participants' self-reports. A number of tests were also employed to assess the health effects of kava use. It was found that current kava users were more likely than others to experience the following undesirable health effects: kava dermatopathy (a rash); low body mass index (BMI); and high cholesterol levels. Kava use was also shown to have a negative impact on the immune system, with current kava users showing greater susceptibility to certain infections. This, with the earlier study by Mathews and colleagues

(1988), confirm kava use is associated with specific adverse health effects, namely skin rash and weight loss.

Further studies focusing on the physical health effects of kava have investigated its possible association with pneumonia and ischaemic heart disease [26, 27]. Research undertaken on pneumonia has been unsuccessful in relating this illness to kava use. In regards to ischaemic heart disease, research to date has failed to show a definitive association between this health condition and kava use but there is evidence to suggest a possible increased risk of ischaemic heart disease in kava users. This finding, together with the presence of confounding variables in both studies, warrants further research into pneumonia and ischaemic heart disease before such conditions can be eliminated fully as health consequences of kava use.

Perhaps one of the greatest health concerns regarding kava consumption has been its potential impact on the liver [28]. This concern has largely been generated by reports of liver toxicity and liver failure in people using herbal products containing kava [29, 30]. Case examples of this have occurred in various countries, most notably Europe, but an isolated case has been recorded in Australia. The emergence of such serious health effects from the ingestion of herbal medicines containing kava has since led to the prohibition of kava products in many Western countries. The potential for liver toxicity and liver failure from therapeutically recommended dosages of kava (reported as 840mg kava lactones p/w) raises the question of the impact of recreational kava use on liver functioning [31].

In investigating the relationship between recreational kava use and liver functioning, Clough and colleagues [25, 32] conducted health assessments on men and women from an Arnhem Land community. The participants identified themselves as either current kava users, recent kava users, or non-kava users. The average quantity of powdered kava consumed was reported at 118g per week which equated to approximately 12g of kava lactones a week. Controlling for the effects of alcohol and other substance use, the findings indicated that kava use altered liver functioning with kava users showing abnormally elevated liver enzymes. Of particular interest, however, were the findings that such liver abnormalities abated with the cessation of kava consumption. This suggests that the consumption of powdered kava does negatively impact on liver functioning, but such changes are reversible with abstinence from kava use.

Reports of liver toxicity and liver failure from the ingestion of herbal products containing small quantities of kava together with research showing no lasting liver damage from high dosage rates of recreationally consumed kava are compelling [25, 29, 30, 32]. In an attempt to explain these health disparities, several suggestions have been offered. It is plausible that the practice of using ethanol and acetone to extract the kava lactones used in herbal products contribute to liver problems. This preparation procedure may lead to toxic compounds that do not normally present when kava is prepared using traditional procedures [30, 32]. It is also possible that the interplay of other medications and/or herbs may account for liver damage in persons taking herbal products containing kava [30]. Some have also suggested genetic differences in liver metabolism may play a role in determining why some individuals develop liver abnormalities from consuming kava and others do not [30, 32]. The absence of a definitive explanation for differences in liver functioning between kava-using population groups and the paucity of research studies focusing on this health effect, further research is required.

In addition to the negative physical health effects caused by kava use, there is also evidence suggesting that kava consumption may impair neurological functioning. Research carried out by Cairney and colleagues [33] utilised multiple brain functioning tests to investigate the acute effects of kava on neurological functioning. Participants involved in the study included intoxicated kava users as well as individuals who use kava

but had not done so in the week prior to testing. The results showed kava intoxication was associated with neurobehavioural changes, specifically motor incoordination and impaired visual attention. Worth noting was the lack of interference kava intoxication had on other cognitive functions, such as thought processes. These findings suggest that while kava intoxication disrupts neurological functioning, it is limited to motor coordination and visual attention.

The availability of evidence showing an association between kava intoxication and neurological impairment warrants the question of the long-term impact of kava consumption on neurological functioning. A study conducted by Cairney and others [34] sought to investigate this issue by administering a series of brain functioning tests on current kava users, past kava users, and non-kava users. In comparing the participants' performances on the tests, no differences were found between the three participant groups. These findings indicate that heavy, long term kava use does not adversely affect neurological functioning.

Further research into the neurological effects of kava has revealed a possible correlation between kava use and seizures. Clough and colleagues [18] used a hospital database to identify 21 kava users who had documented episodes of seizures. In interviewing health workers and analysing the patient records, it was found that a significant proportion of these patients experienced impaired consciousness during the seizure with some also displaying abnormal movements. In approximately one-half of the reported seizures, kava use or kava misuse was recorded as the cause of the seizure. It is important to note, however, that the incidence of seizures in the kava-using population is relatively low and the findings from this study must be interpreted with great caution as variables such as a family history of epilepsy, a predisposition to seizures, and the influence of licit and illicit drug use were not considered.

To summarise the research reporting on the neurological effect of recreational kava use on Indigenous Australians, the evidence suggests kava temporarily affects neurological functioning [33, 34]. Acute kava intoxication has been shown to lead to motor coordination and visual attentional impairments but such neurological impairments normalise when the individual returns to state of sobriety. Individuals who are long term, heavy users of kava and those who are past users do not demonstrate any lasting deficits in neurological functioning.

Kava use may also indirectly affect health through poor hygiene practices in its preparation and consumption [13]. It is plausible that diseases may be transmitted through lack of cleanliness in kava-drinking equipment, such as the mixing bowl and drinking vessel. Further, failure to adequately wash hands prior to preparing the kava drink and the common practice of sharing the drinking vessel presents other avenues through which illnesses can be spread among kava consumers.

Impact of kava on social and emotional wellbeing

Further to the unfavourable physical health effects that have been identified among kava-using Indigenous Australians, there is concern directed at the possible social effects of kava consumption on their social and emotional wellbeing [9, 11, 16, 35]. Much of the initial support for kava stemmed from its ability to minimise the propensity for people to behave violently, thus reducing the incidence of problems such as domestic violence. And, although it is recognised that a reduction in domestic violence is indeed a positive outcome, it must not be implied that kava use has been entirely beneficial to Aboriginal families and communities. The research highlights that kava use has led to much conflict and tension within family units [35]. Such family discord can be attributed to a number of

factors, including the significant amount of time kava-users spend drinking kava and the subsequent neglect of family duties and responsibilities [9]. Further, a considerable portion of the family's income is often spent on consuming kava, thus leaving less money for food and other necessities [9, 11, 16, 35].

Kava has also been noted to contribute to community dysfunction [16, 35]. Individuals who engage in kava drinking generally lack much energy and motivation to engage in other activities, meaning that education and employment are avenues less likely to be pursued by heavy kava drinkers than by others. Kava misuse also reduces participation in cultural activities, such as traditional ceremonies and mortuary rites, and hunting [35, 36]. Kava consumption has also interfered with the economic activity of various Indigenous communities, with kava consumers less inclined to produce traditional artefacts and engage in painting [11]. In addition to these family and community problems, concern has also been expressed regarding the wellbeing and welfare of children whose parents engage in kava drinking, and the common occurrence of underage kava drinking [11, 35].

Collectively, this research demonstrates the adverse effect kava consumption can have on the health and wellbeing of Indigenous people. It is necessary to note, however, that although research portraying the negative health effects of kava use is disconcerting, it is necessary to be cognisant of several confounding variables when interpreting such findings. Of particular concern are: the interference of the effects of alcohol and tobacco in the research findings; constraints placed on data collection; and the absence of qualitative research (that would provide an understanding of the impact of kava use from the perspective of Indigenous people themselves). More rigorous research is required, in particular longitudinal research, to determine with greater certainty the impact of kava use on the health and wellbeing of Indigenous Australians.

It is ironic that, although kava has succeeded in overcoming some of the problems dominating particular Indigenous communities (e.g., alcohol misuse and violence), it has itself become a drug of concern. Due to the problems generated by the introduction of kava into Australia, much contention surrounds its availability. In an effort to minimise the harmful effects caused by kava misuse, the Australian Government has developed regulations to control the availability and consumption of its use in Australia. The following section reviews the history of kava regulation in Australia.

Regulation of kava in Australia

Legislation and/or regulations governing the sale, supply, and possession of kava were non-existent when the drug was initially introduced into Australia [11, 17]. In fact, the Northern Territory Department of Health advocated the use of kava by Indigenous people, proposing that it was a beneficial substitute for alcohol. Due to its supposed beneficial qualities, the Department proposed that kava not be classified as a drug. To compensate for the lack of formal kava legislation/regulation, Arnhem Land communities adopted a self management approach to regulate its consumption in their communities. Examples of the social controls and rules developed by Arnhem Land communities included: restricting the hours that kava could be sold; and instructing which mixes could be used with kava. Some communities also prohibited children from consuming kava, while other communities banned kava entirely.

In terms of acquiring kava, there are various accounts of how different Arnhem Land communities came to access kava [37]. One report states that a local male resident in an Arnhem Land community purchased kava from a dealer in Darwin. He would occasionally sell the drug in the community, but in the majority of instances it was

consumed by the male buyer and his social network or other clan groups. Profits from the sale of kava were generally used to provide transportation and other family needs (purchase of goods, for example) and money was often forwarded to children attending boarding school in Darwin.

Another account describing access to kava by Indigenous people in an Arnhem Land community claims kava was purchased from a Sydney wholesaler by members of the community as well as local community organisations [19]. The profits obtained from the kava sales were largely used to provide transport services in the community. As its popularity increased, there was a corresponding increase in the demand for kava. Such demand placed immense pressure on the local community organisations (who purchased and distributed the kava) and they were soon unable to meet the community's growing kava requirements. As a consequence, non-Indigenous traders entered the market, which meant the supply of kava was no longer controlled by the community itself. In an attempt to limit kava supplies, the local community organisations appealed to their kava supplier to cease selling kava to non-Indigenous traders, but their request was not successful. The non-Indigenous traders subsequently dominated the supply of kava, thus terminating the involvement of communities in kava retailing.

With the proliferation in kava sales in Arnhem Land communities, attempts were made to expand the availability of kava to other Indigenous Australians [9, 11]. The Kimberley region of Western Australia was identified as a viable market for kava, but the local Indigenous people were strongly opposed to introducing it into their communities. The Western Australian Government agreed with the stance taken by local Indigenous people and in 1988 added kava to substances covered by its Poisons Act 1964, thus prohibiting the sale and supply of kava in the State.

Despite the perspective of the Western Australian Indigenous people on kava, the sale of kava in Arnhem Land communities continued to increase [16, 17]. The uncontrolled availability of kava in these communities soon became evident in the deteriorating health and wellbeing of its community members. Concerned about the detrimental impact kava misuse was having on their community, Indigenous leaders urged the Australian Government in the late 1980s to implement legislation restricting the supply of kava in Australia. A further prompt for the Australian Government to take action was the emergence around that time of research by the Menzies School of Health Research that highlighted the aversive impact of kava on Indigenous health and wellbeing.

In response to mounting public concern regarding kava abuse in Arnhem Land, the Australian and Northern Territory governments introduced controls to restrict the availability of kava [17, 37]. In May 1990, kava was classified as a dangerous good and a kava licensing system was developed under the Northern Territory Consumer Affairs and Fair Trading Act. The National Health and Medical Research Council (NHMRC) also moved to declare kava a Schedule 4 drug. In the same month, section 19 of the Northern Territory Consumer Protection Act (1978) was also enforced, essentially prohibiting the sale and supply of kava in the Northern Territory aside from instances whereby the Minister for Health and Community Services had granted approval in writing [17]. In accordance with this Act, Arnhem Land communities could request the Northern Territory Minister for Health and Community Services to make kava available in their community. Kava could then only be sold through an elected Indigenous community Council. Restrictions were placed on the selling of kava: namely a daily maximum of 50g of kava powder could be sold to a person over the age of 18 years; only approved wholesalers could sell kava; and transaction records were required to be kept. Within six months of this policy coming into effect, most of the kava-using communities in Arnhem Land had requested the Minister for legal supplies of kava [37].

Within a 12 month period during 1993, many policy changes occurred in relation to kava [11, 17]. First, the Commonwealth Therapeutics Good Act came into effect, placing additional controls on the sale and supply of kava. Soon after, however, the NHMRC revoked its decision to classify kava as a Schedule 4 drug. The implication of this was that immense pressure was placed on the Therapeutic Goods Administration (TGA) to remove kava from its list of therapeutic goods (as it was no longer deemed a drug). The TGA relented to the pressure by stating that, in most situations, kava would not be regulated as a therapeutic good. The combined effect of these changes meant the management of kava once again became the sole responsibility of the Northern Territory.

In 1994, legislative conflict began to surface in reference to kava [11, 17, 19, 37]. This was initiated by a decision by the National Food Standards Council to list kava as a 'prohibited botanical' and, as such, it was banned under the National Foods Standards Code from being offered as food [11, 17]. This change in Commonwealth kava legislation contradicted the kava legislation in the Northern Territory and subsequently led to the demise of the local licensing system operating in the Territory [17, 37]. Without the local licensing system, the Northern Territory Government no longer had the authority to control kava trade [17]. This situation provided optimal grounds for a profitable black market trade to emerge as unlicensed kava importers could import kava with minimal threat of prosecution [17, 37]. This trade of kava soon prospered to the extent that it became ingrained in Arnhem Land communities. Consequently, kava consumption significantly increased to the detriment of the health and wellbeing of Indigenous people in these communities [17].

In an effort to overcome the contradictions in the Commonwealth and Territory kava legislations, the Northern Territory Government submitted a request to the National Food Authority to vary the National Food Standards Code [11, 17]. The Northern Territory was seeking exemption from the Code so they could resume control over the sale of kava. Prior to taking any action, the Commonwealth decided to await the outcome of an inquiry being undertaken by the National Food Authority. This inquiry took approximately 12 months and resulted in the development in 1995 of a Draft National Kava Management Strategy. Two years later this Strategy was endorsed by the Australian New Zealand Food Standards Council and became known as the National Code of Kava Management.

The primary aim of the National Code of Kava Management was to reduce the negative health and social outcomes related to kava use and misuse in Australia through the stipulation of conditions under which it could be sold. It applied to all imported kava except for kava imported as a therapeutic good. The major components of the Code included strict standards for the importing and selling of kava, including: the requirement that kava importers and suppliers obtain a license from the Commonwealth to import and sell it; suppliers may only sell to persons over 18 years of age; and the requirement that all kava transactions be recorded. The code also prohibited the advertising and promotion of kava [38]. There was also scope within the Code for States and Territories to develop more restrictive kava legislation [11]. The National Code of Kava Management was designed to be read in association with the Food Standards Code as well as the respective State and Territory kava legislation [38].

Prior to the National Code of Kava Management coming into effect in 1997, the Northern Territory Government used the authority granted to it in the Draft National Kava Management Strategy to develop kava legislation that was applicable to the kava situation in Arnhem Land [11, 17, 37]. Armed with this legislative freedom, the Northern Territory Government began consulting with Indigenous representatives and the Menzies School of Health Research to assist in the development of kava regulations for Arnhem Land. Of priority was deciding whether to opt for a complete kava ban or regulated kava use. Based on the recommendations of these prominent stakeholders, the decision was

made to regulate rather than ban kava. This process culminated in the tabling by the Northern Territory Legislative Assembly of the draft Kava Management Bill in November 1996.

The drafting of the Kava Management Bill proposed that the regulation of kava be referred to the Northern Territory Legislative Assembly's Sessional Committee on Use and Abuse of Alcohol by the Community [19]. It was proposed that the Committee engage in discussions with key stakeholders to develop recommendations on kava availability. The Menzies School of Health Research then became involved as they undertook an inquiry into kava regulation that resulted in a draft report. This report proved to be of great significance as it was the fundamental resource from which future kava regulations were made.

The Northern Territory Kava Management Act was implemented on 21 May 1998 [11, 17, 19, 39]. Several amendments were made to the Act in the years following its implementation, resulting in a replacement Kava Management Act coming in to effect in 2001. This Act was based on the notion of harm minimisation – an objective made feasible by prohibiting the selling of kava without a license. This meant kava could only be sold by wholesalers and retailers granted a license through the Northern Territory Licensing Commission. The Act stipulated that retail licensees could only purchase kava from wholesale licensees and transaction records were required to be kept. Prior to the granting of a retail license, the Act necessitated the fulfilment of two important requirements: a kava management plan; and a kava license area.

Indigenous communities wanting legal supplies of kava were required by the Kava Management Act to develop a kava management plan [19, 39, 40]. This plan needed to contain information detailing how the supply and consumption of kava would be managed to minimise the likelihood of negative consequences arising from its use. The basic format of the kava management plans included specific information pertaining to: the boundary of the license area; the place and method of kava sales; areas where kava could and could not be consumed; days and hours of sale; purchase limits; community expectations regarding responsible kava consumption; management of irresponsible kava consumption; and how the impact of kava would be managed. Once completed, the plan had to be forwarded to the Northern Territory Licensing Commission for approval and an application could then be made to the Minister for Racing, Gaming and Licensing for a kava license area in the community. The kava license area referred to a designated area in the community where kava could be legally sold and consumed. Once the community had a declared kava license area, individuals or a corporate body could seek a retail license for selling kava. The Kava Management Act permitted one licensee per licence area and the retail licensee was required to keep transaction records. The granting of the retail license enabled the community members to purchase a maximum of 800 grams of kava per week and authorised them to possess a maximum of two kilograms of kava.

The Northern Territory Kava Management Act reflected the self management approach adopted by Arnhem Land communities in the early years following the initial introduction of kava into Australia [11, 19, 35]. The Act reserved the responsibility of kava control with the Arnhem Land communities, allowing them to devise regulations applicable to their particular circumstances. A probable outcome of this system of self management was the increased likelihood of individuals from kava-using communities to engage in safe kava consumption practices. Another positive feature of the Act was that it stipulated that kava selling prices be fixed and the profits from kava sales be used to benefit the community, thus ensuring kava did not become a burden to these communities [19]. Other positives to emerge from the Act included an annual Kava Licensee Conference, largely designed to review licensed kava sales under the Act [11, 35]. This was soon followed by the

formation of the Kava Education and Health Advisory Group who sought to accomplish the harm minimisation objectives of the Act [11].

Following implementation of the Kava Management Act in the Northern Territory, several communities began pursuing the avenues prescribed in the Act to seek permission to sell and consume kava [11, 19, 35, 41]. The communities that were successful in gaining approval included: Laynhapuy Homelands, Yirrkala, Ramingining, Warruwi, Gapuwiak, and Croker Island. For some of these communities, alcohol was prohibited and kava had become a popular alternative for its residents. It is interesting to note, however, that not all kava-using communities sought kava licenses. This was largely due to their awareness of the negative consequences of kava use on the health and wellbeing of Indigenous people.

Despite the apparent advantage of allowing Arnhem Land communities to devise their own system of kava regulation, it soon became apparent that such a process was not successful in reducing the consumption of, and harm associated with, kava [11]. The limited data available indicate kava consumption continued to increase with kava imports into Australia rising from 9,688kg in 1997 to 73,211kg in 2005. The importation of kava declined in 2006 to 26,627kg, but this amount is substantially greater than the import statistics reported prior to the introduction of the National Code of Kava Management and the Northern Territory Kava Management Act.

The progressive increase in kava consumption paralleled a continuation in health complications and social dysfunction in kava-using communities in Arnhem Land [11]. Several factors were identified as enabling the continuation of kava problems including: the persistent illegal trade of kava (particularly in communities without kava licenses); the common occurrence of underage kava drinking; the incentive provided by kava sale profits; and the dominant view held by many Indigenous people that kava use prevented alcohol dependency. The main factor thought to be responsible for facilitating the ongoing problems with kava, however, resided with the amount of kava the retailers were permitted to sell. In accordance with the Kava Management Act, licensed kava retailers in the Northern Territory were authorised to sell 800g of kava to one individual – an amount that is significantly higher than that considered safe. The research indicates that consumption between 240g and 440g per week is sufficient for the emergence of health and social effects [37]. The Northern Territory Licensing Commission responded to suggestions to lower the weight of kava that could be legally purchased to 400g per person in 2006, but this amount is still considered to be harmful [11].

In recognition of the inability of the national and Territory legislation to limit the pervasiveness of kava-related problems in Arnhem Land communities, greater restrictions were imposed on kava in June 2007 by the Australian Government [11, 42]. This amended legislation prohibits the importation of kava into Australia except in circumstances where it is for medical or scientific purposes – thus effectively terminating the supply and availability of kava to Indigenous people in Arnhem Land. The legislation acknowledges, however, that kava is an important feature in the culture and ceremonial activities of South Pacific Island individuals and, as such, a maximum of 2kg of kava (either root or dried) can be imported in the accompanying baggage of an individual aged 18 years or older when entering Australia. The effectiveness of this legislation in curbing the prevalence of kava abuse and its associated problems has yet to be determined, but the following section explores the potential implications of this legislation.

Kava regulation implications

The Australian Government's decision to ban the importation of kava except in medical and scientific circumstances has given rise to the issue of kava dependency. Attention needs to be directed at managing kava dependency in Arnhem Land communities to ensure the current legislation does not lead to adverse outcomes. At the time the legislation came in to force, treatment programs designed specifically to address kava dependency were non-existent, meaning individuals enduring kava withdrawal were without appropriate treatment services. The Ministerial Council on Drug Strategy [9] reports that there are some treatment programs which include kava but their success in treating kava dependency is unknown. Due in part to this, the Australian Government allocated \$15.9 million to the Northern Territory in 2007 to increase the availability and quality of drug and alcohol treatment and rehabilitation services in Indigenous communities [42]. It was envisaged that a portion of this funding would be directed at developing services applicable to the Indigenous kava-using population.

An issue of far greater concern is the lasting impact kava prohibition will have on the kava-using communities in Arnhem Land [11]. Some have speculated that this movement will merely result in kava being substituted with alcohol or other drugs. To ensure the misuse of other drugs is circumvented in the absence of kava, attention must be directed at identifying, and appropriately addressing, the factors underlying drug use and misuse. It is widely recognised that drug misuse is socially determined, but it is beyond the scope of this paper to discuss in detail, [11, 43]. This implies that issues such as education, employment, and housing should be the primary focus of any efforts designed to reduce the prevalence of drug misuse [11, 43].

Conclusion

This review has summarised information on kava use in the Indigenous Australian population. Particular attention has been directed to: the history of kava use in Australia; the impact of kava use on health and wellbeing; and the regulation of kava in Australia.

The review has highlighted the pervasiveness of kava use in certain Arnhem Land communities, and the multitude of problems associated with its use.

A variety of legislation has been implemented by the Australian and Northern Territory governments to minimise the health and social harm associated with kava use, but such legislation has proved to be largely ineffective. As a consequence, legislation has recently been introduced effectively prohibiting the availability of kava in Australia.

The latest legislation has attracted much support, but it fails to fully address the larger issue of drug use and misuse. For the Northern Territory Government to minimise the use and misuse of drugs in their Indigenous population, the factors contributing to the use and misuse of drugs must be identified and attended to. This would involve focusing on the disadvantage confronted by Indigenous people in the areas of education, employment, and housing. It is only with the adoption of this approach that the issue of drug use and abuse among Indigenous people can be adequately resolved.

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