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Global Perspectives on Kava: A Narrative Systematic Review of the Health Effects, Economic and Social Impacts and Policy Considerations

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ABSTRACT

Introduction: Kava is a plant-based drug central to many Pacific Island cultures, yet its physiological and psychological effects remain contested and poorly understood. Additionally, the broader social, economic, and policy consequences of kava trade and consumption are unclear. This paper systematically reviewed global literature on kava to clarify its role and potential impacts across these domains.

Methods: We conducted a systematic search of eight databases for records published between January 1980 and December 2022. Records on kava prevalence, social and cultural use, harms, benefits, economic impacts and policy reports were included. Data were narratively synthesised, combining qualitative and quantitative data extracted using a pre-designed template for each outcome, including a risk of bias evaluation.

Results: We included 197 records across all domains. Most prevalence records used convenience samples in populations regularly consuming kava but with varying doses and periods. The harms and benefits of kava varied; its role in liver toxicity and anxiety reduction remains unclear. However, kava's social and cultural uses in recreational and traditional contexts and its economic importance in trade, distribution and sales across Pacific Islander countries were consistently reported.

Discussion and Conclusions: Kava holds social and cultural significance and is an essential trading commodity for Pacific Islander countries. Additional high-quality studies with larger samples are necessary to better inform policies and regulations around kava's usage, distribution, and its potential harms and benefits.

1 | Introduction

Kava is a root-based drug with depressive effects that is native to several Pacific Island countries [1]. Kava is traditionally consumed in various cultural contexts, such as at funerals, weddings and graduation ceremonies, as well as for recreational purposes [2]. Despite its deep-seated history in Pacific Island culture, the prevalence of kava consumption in these countries, as well as in countries where kava has been introduced and is regularly imported, remains unclear [3].

Kava continues to be a strong trading commodity among Pacific Island countries with long-standing cultural and social significance, the benefits of which are especially important to agrarian economies [4]. From 2015 to 2019, between 500 and 4000 t of kava were exported from Vanuatu, Fiji and Tonga [5, 6].

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Most countries have legislation and policies in place to regulate the trade, production and sale of kava at both domestic and international levels. However, many of these frameworks have not been adapted to the changing landscape of how kava is imported and exported in the contemporary era or have undergone significant legislative reform since the beginning of the 21st century.

In Europe, for example, various countries enacted a ban on the sale, distribution and medicinal use of kava following several incidents of reported liver toxicity among individuals who regularly consumed kava [7, 8]. This ban commenced in Germany in 2002, followed by the United Kingdom that same year, and then Switzerland in 2003. Other countries such as France, Canada and Japan also adopted 'kava bans' during this period [9–11]. In other Western countries like Australia, kava regulations have varied at different times across states [12, 13]. In New South Wales, for example, the trade and consumption of kava was banned between 2007 and 2021, but since 2022, these prohibitions have been removed [14]. By contrast, the Northern Territory enjoyed decades of uninterrupted kava trade and consumption since its inception, but as of 2020, all forms of kava in the Northern Territory have been ruled illegal [14].

Kava continues to be variably enforced across Western, high-income countries. Although kava remains prohibited in the United Kingdom, Germany, for instance, overturned its ban on kava in 2014 after the perceived risks of harm associated with kava were deemed insufficient, or even lower than that posed by other therapeutic options [15]. Moreover, while kava remains legal in most states and territories across Australia, personal importation restrictions were relaxed in 2019, and commercial importation was permitted from 2021. Individuals are now permitted to import four kilograms of kava for recreational purposes (previously this limit was capped at two kilograms), and industries in possession of appropriate permits and licences can commercially import a potentially unlimited quantity of kava into Australia [16, 17].

To comprehensively inform communities and stakeholders at large about the effects of kava, as well as government and policy stakeholders who make decisions about the sale, distribution and trade of kava it is essential to examine the international empirical evidence across health, social, economic and regulatory domains. Previously published reviews on kava have focused on specific domains, such as clinical [18–20], pharmacological [2, 21–23] or cultural aspects [24, 25], and many are limited by outdated [24–26] or region-specific evidence [24, 25, 27] and several exclude grey literature [18, 22, 28]. The current study addresses these limitations by systematically synthesising the broader health outcomes (including both harms and benefits), prevalence patterns, social and cultural uses, economic impacts and policy considerations of kava, in a comprehensive, narrative systematic review of both peer-reviewed and grey literature from 1980 to 2022.

2 | Methods

This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [29] and was registered with PROSPERO (registration number: CRD42021139490).

2.1 | Population and Study Design

This narrative systematic review explored available literature on kava from both qualitative and quantitative studies.

2.2 | Eligibility Criteria

Records were eligible for inclusion if they reported empirical data on the prevalence, social and cultural use, pharmacological and economic impacts, harms, benefits, policy and/or governance of kava, and were published between 1 January 1980 and 8 December 2022. Appendix 1 details key kava terminology that was used during title/abstract and full-text screening stages for inclusion in the review. We excluded studies that reported no primary data, opinion pieces, non-empirical reviews (unless they employed a formal method of synthesis), and studies focused solely on laboratory or chemical analysis not directly connected to human health, behaviour or policy outcomes. There were no language restrictions. Articles in languages other than English were translated using Google Translate. Only records involving human participants were included. These criteria were applied consistently to both peer-reviewed and grey literature sources.

2.3 | Information Sources

Searches were conducted in the following eight electronic databases: CINAHL via Ebsco, ATSI Health, APAIS-ATSIS, Social Science ProQuest, PsycINFO via Ovid, Embase via Ovid, PubMed and Scopus. We included any peer-reviewed or grey literature published in English between 1980 and 2022. Grey literature—such as government reports, agency evaluations and academic theses—was included if it contained original empirical data relevant to the health, economic, social or policy impacts of kava. These sources were assessed using the same eligibility criteria applied to peer-reviewed studies.

To capture the broad range of synonyms for which kava is classified in different cultures and countries, the following search terms were used to search the titles and abstracts across databases: exp. kava extract/or exp. kava/or exp. *Piper methysticum*/ or kavalactones or kawa or waka or lewena or yaqona or grog or sakau or awa or ava or wati.

2.4 | Selection Process

The final database search was conducted on 8 December 2022. The searches retrieved 2771 results. All results were exported to Endnote (Version 20) for initial deduplication. The remaining references were then uploaded to Covidence for screening. Each title, abstract and full text was screened independently by two reviewers selected from the team (GM, ML, ST, WAD, OL, RJ,

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BC, GE, TS and LD). Discrepancies were resolved through discussion or adjudication by a third reviewer.

2.5 | Data Extraction

Information was systematically extracted using a pre-designed data template that was tailored to each of the seven outcomes of interest: (i) prevalence; (ii) social and cultural use; (iii) harms; (iv) benefits/therapeutic use; (v) economic impacts; (vi) policy and governance; and (vii) pharmacological effects. While many of the extracted variables were consistent across outcomes (e.g., study, country/region, type of kava and population/sample), some were unique to specific outcomes. For example, 'reasons for social/cultural use' and 'frequency, dose and duration' were extracted for social and cultural and prevalence outcomes, respectively, as were 'trade, manufacturing/production and sale' and 'legislation/guideline/advisory body' for economic and policy and governance outcomes, respectively.

2.6 | Risk of Bias Assessments

The Joanna Briggs Institute (JBI) quality appraisal tools were used to assess the risk of bias in selected records. Specifically, the JBI prevalence tool [30] was used to assess the risk of bias in any record reporting on prevalence outcomes, and the relevant randomised controlled trial (RCT) [31], quasi-experimental [32], cross-sectional [33], qualitative [34], case series [35] and case report [33] JBI tool was used to assess the risk of bias in any record reporting on harms or benefits. No risk of bias assessment was undertaken for records solely reporting on economic impacts, social and cultural use, pharmacology, and policy and governance, as these were typically descriptive and/or did not report on data that appropriately aligned with any of the JBI measures.

2.7 | Synthesis of Results

A narrative synthesis of the included studies was conducted to summarise and compare findings. Following the four-stage framework outlined by Popay et al. [36], we first developed a conceptual framework tailored to this review, outlining how kava use relates to health, social, economic and policy outcomes. We then organised and summarised findings by key thematic domains—health effects, social impacts, economic implications and policy considerations. Relationships within and across studies were explored, with attention to contextual factors such as population characteristics, study setting and patterns of kava use. Finally, we assessed the robustness of the synthesis through critical appraisal of study quality and by evaluating the consistency of findings across study designs and contexts.

3 | Results

A total of 1713 search results were screened, with 197 records included in the review. Figure 1 displays the study selection process. Papers included in the review reported on kava prevalence ($n=30$), benefits ($n=37$), harms ($n=72$), social and cultural reasons for use ($n=25$), economic ($n=15$) and policy ($n=36$) impacts. An overview of the findings across each of these outcomes is described in Table 1.

3.1 | Prevalence of Kava Use

Thirty records reported on the prevalence of kava, of which more than one-third were from Australia [3, 12, 13, 37–44] (see Appendix 3.1). Almost all other records were from Pacific Island countries ($n=14$, 47%), such as Vanuatu, Fiji, New Caledonia and Micronesia [45–57], with the remainder being from the US ($n=2$, 7%), UK ($n=1$, 3%) and Aotearoa/New Zealand ($n=1$, 3%) [58–61]. Most records consisted of convenience samples ($n=14$, 47%), followed by random samples ($n=5$, 17%), or a combination of convenience and random samples ($n=4$, 13%). Sample sizes ranged from 28 to 13,300. In five records ($n=5$, 17%), the sampling method was unclear [13, 42, 44, 45, 62]. Half ($n=15$, 50%) of all prevalence records reported on the quantity of kava consumed, although the terminology used to describe this varied across records. Four (13%) records specified kava being consumed from anywhere between 52 cups and 1–12 bowls in one session or sitting, or between 2 and 6 shells per day [41, 43, 46, 47]. Five (17%) others specified duration by grams of powder, ranging from 2383 to 6917 mL per week (or <40–2250 g per week) [13, 42, 44, 45, 62] whereas others reported kava in terms of the intensity of drinking sessions. As the sampling methods used and definitions of kava consumption varied widely across records, these are unlikely to be representative of the broader population; therefore, prevalence estimates for kava consumption could not be accurately obtained.

3.2 | Benefits Related to Kava Use

Thirty-seven records reported potential benefits of kava use (Table 2) and comprised various study designs such as RCTs ($n=23$, 62%), observational studies ($n=9$, 33%) and case reports ($n=2$, 5%). RCT samples ranged from 20 to 141 participants, while observational studies, mainly cohort designs, consisted of samples ranging from 21 to 3029 participants. Duration of interventions ranged from a few hours to 25 weeks.

Thirty-four (92%) of the included records reported benefits related to improved mood, relaxation, or reductions in symptoms of anxiety, stress, depression, insomnia, or related conditions. Other noted benefits reported include potential anticarcinogenic effects ($n=2$, 5%) [88, 92], anti-craving properties ($n=1$, 3%) [89], attenuation of extra-pyramidal side effects ($n=1$, 3%) [66] and effects on adiposity ($n=1$, 3%) [48].

Eight RCTs observed significant reductions in anxiety symptoms among those who consumed kava, compared to those on placebo [70, 72, 79, 81, 84, 92, 98]. However, three RCTs did not observe any significant differences in reductions to anxiety symptoms between kava and placebo conditions [99–101]. One (3%) record suggested kava may be useful in treating symptoms associated with panic disorder and could potentially be considered as an alternative to other pharmacological treatments [68]. Thirteen (35%) records reported few to no serious adverse events

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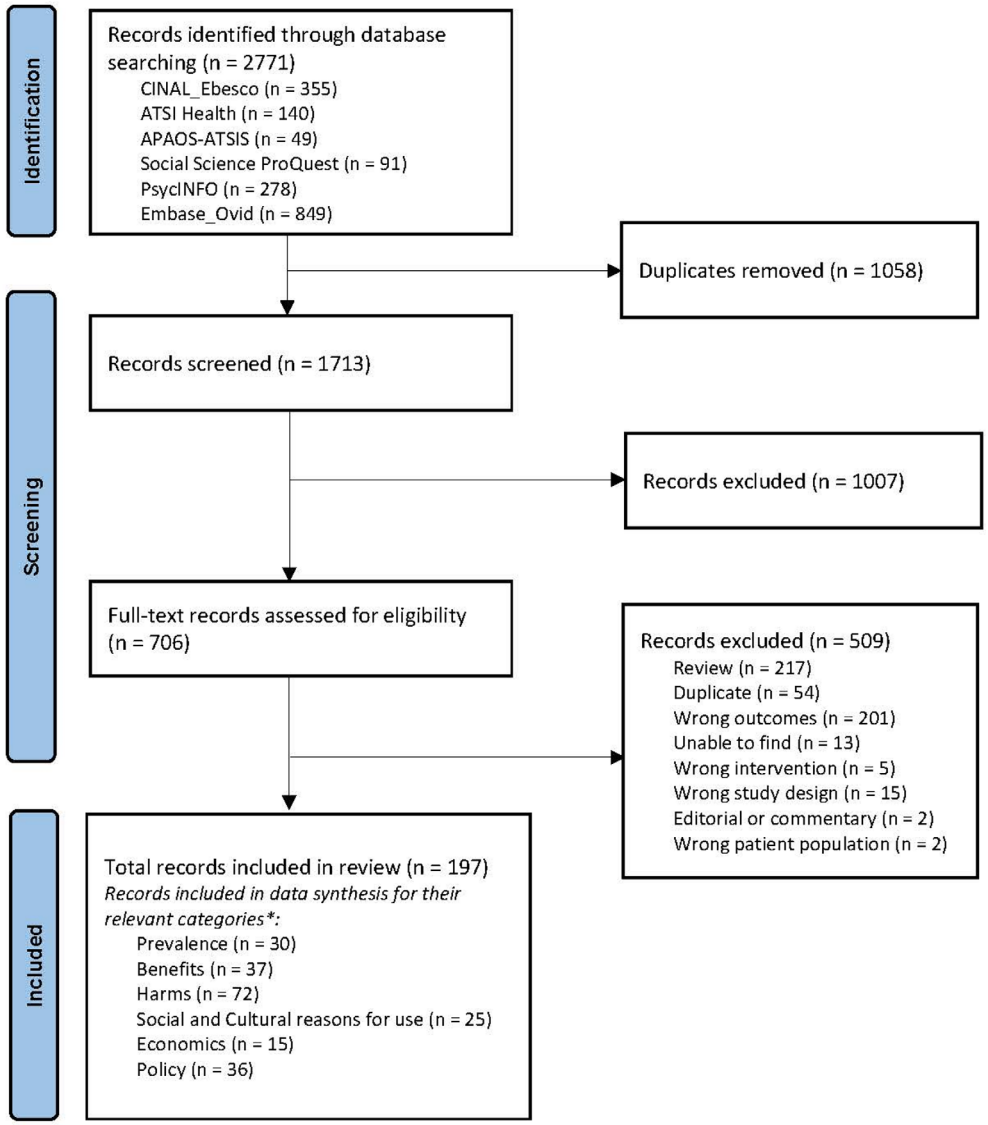

FIGURE 1 | PRISMA flowchart for included studies. *Number of records extracted for each category exceeds the number of studies included in the review due to overlap of categories within the record.

or withdrawal symptoms, or suggested kava was well tolerated among participants [64, 65, 68, 69, 72, 77–80, 82, 85, 86, 101].

3.3 | Harms Related to Kava Use

Seventy-two records reported harms associated with kava use (Table 3). Over half ($n = 42$, 58%) of all records utilised a case report or case series design, largely consisting of small samples (typically of a single individual) presenting with one or more of the harms described below. Of the 23 RCTs identified, sample sizes ranged from 40 to 172 participants [139, 156].

Three (4%) records (one observational study, one case report and one online survey) found that the consumption of kava negatively impacted driving ability and behaviour and was significantly associated with serious-injury road crashes [52, 59, 105]. These findings contradicted four (6%) records (two RCTs, two observational studies) that identified no impact of kava on cognitive performance and driving ability [102, 156–158].

Thirty-one (43%) records included reported cases of harm associated with liver damage or failure [8, 71, 103, 104, 107, 109, 110, 112–114, 116–118, 124, 128, 130, 133, 136, 138, 145, 146, 148–151, 153, 52–156, 159]. In some cases, these effects were severe enough to require liver transplants [103, 104, 107, 128]. Additionally, kava use has been linked to dermopathy [63], a skin condition that is characterised by rashes, itching, and scaling. Furthermore, in Aboriginal communities in Arnhem Land, heavy kava use has been linked to signs of nutritional compromise, including reduced body mass index, scaly skin (ichthyosis) and abnormal lipid profiles resembling those observed in individuals with anorexia nervosa. A study by Clough et al. found elevated total- and LDL-cholesterol in current kava users, despite low plasma carotenoid levels and poor dietary quality, highlighting the potential for malnutrition to interact with kava's metabolic effects in settings of socioeconomic disadvantage [12].

In terms of cognitive and motor functions, some studies suggested that kava may impair these functions. For example, two

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TABLE 1 | Overview of results.

Outcome	Key findings
Prevalence of kava use	• Most prevalence records of kava were from Australia (12 out of 30 records). • Convenience and random samples, or a combination of convenience and random samples, comprised almost ¾ of all prevalence studies. • Many records reported kava was regularly consumed in the last 12 months.
Benefits related to kava use	• Benefits included mood and relaxation, and a reduction in negative psychological conditions or sleeping problems (34 of 37 records). • Most records suggested kava is associated with a significant reduction in anxiety, compared to placebo. • It was less clear whether kava is associated with withdrawal symptoms and adverse events (e.g., headaches, dermatitis, liver abnormalities).
Harms related to kava use	• Most harm-related records examined liver damage or failure (21 of 72 records). • Other harms included skin dermopathy, cognitive and motor functions and other physical and psychological harms. • There was insufficient evidence to suggest kava is attributable to these harms.
Economic impact of kava	• Economic information of kava was available from Australia, Germany, the United States, Vanuatu, New Zealand, Canada and Fiji. • Most records reported on sale and exports, followed by manufacturing and production of kava. • Sales records focused on conditions of sale for kava and export records centred on kava-dependent economies and the effects of the European Union kava ban in the early 2000s. • Kava manufacturing and production records were more varied, ranging from dietary supplements and kava cleaning and checking processes, to domestic production protocols and the Hawaiian kava industry.
Policies related to kava use	• Policy-related records were mainly published in Australia and Germany. • While Australia typically classifies kava as a beverage and/or food, Germany (and the European Union) labels it a herbal medicinal drug. • Legislation ranged from the licensing of areas permitted for kava consumption, to the definition of kava and the parameters surrounding its manufacture, sale and production. • The majority of health authorities, medical agencies and committees in reported records were from Europe, specifically the UK, Germany and France.
Social and cultural reasons for kava use	• All countries that reported the social and cultural reasons for kava were from Oceania/the South Pacific. • While traditional research procedures were commonly reported, there were also examples of traditional methods (e.g., Talanoa and Vanuatu research framework). • In social settings, kava was primarily described as a recreational activity, followed by as a source of conflict resolution, and finally as an alternative to alcohol. • In cultural settings, kava was central to funerals, weddings and other special occasions, forming one's cultural identity and connection to country.

(3%) records found that kava disrupted processing speed [46], motor coordination and visual attention [112], while another found that it hindered the ability to perform divided attention tasks [105]. However, an additional record reported no impairment in attention or reaction time [158].

Some records also reported adverse effects associated with kava use, such as toxic withdrawal seizures among heavy users [117], gastric pressure and nausea [97], possible links to suicidal behaviour [51] and potential for drug interactions [152].

3.4 | Economic Impact of Kava Use

Fifteen records on the economic impacts of kava were included, reporting on its trade, manufacturing and production, and/or sale (Table 4). Countries for which economic information on kava is available include Australia, Germany, the United States, Vanuatu, Aotearoa/New Zealand, Canada and Fiji, published between 1995 and 2020. The sample population was reported in just over half of all records ($n = 8$, 53%), ranging from individual consumers, drinkers and traders, to communities, producers,

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TABLE 2 | Description of studies that report the potential benefits associated with kava use.

Study (Author, Year)	Study type	Sample	Type/volume of kava	Duration	Findings
Anonymous, 1993 [63]	Application observational study	972 physicians and 3029 patients. Over 60% of patients suffered severely from nervousness and restlessness	120–249 mg kavapryone	Unclear	Treatment success rated good or very good nervousness and restlessness by over 80% patients
Boerner, 2001 [64]	Case report	37 year old female outpatient with GAD, simple phobia, specific social phobia	3 tablets daily Kava extract LI 150	6 months	Potential value of kava preparations in treating anxiety; excellent tolerability in this case
Boerner, 2003 [65]	RCT	129 outpatients meeting ICD-10 criteria for GAD ($n = 43$ in kava; $n = 43$ in Buspirone; $n = 43$ in Opipramol)	400 mg Kava LI 150	8 weeks	Kava LI150 well tolerated and as effective as Buspirone and Opipramol in acute treatment of GAD outpatients
Boerner, 2004 [66]	Non-interventional, observational open-label study	42 patients with different psychiatric diagnoses, pre-treated by neuroleptics	WS 1490, varied doses (100–300 mg/day)	4 days	Kava extract may attenuate extrapyramidal side effects of neuroleptic drugs; permits dose reduction without loss of efficacy
Cagnacci, 2003 [67]	RCT	Perimenopausal women (34 in control group, 15 in 10 mg group, 19 in 200 mg group)	100–200 mg/day kava (55% kavaina)	3 months	Kava improved anxiety in perimenopausal women
Connor, 2002 [68]	RCT	35 adults with DSM-IV GAD	70–280 mg kL/day	4 weeks	No significant differences observed between groups on efficacy assessments; greater improvement for kava in low anxiety group
Dattilio, 2002 [69]	Case report	38-year-old female with panic disorder	280 mg/day, 2 capsules or gel caps	3 weeks with 6 months follow up	Kava may potentially be used as an alternative to pharmacotherapy in the treatment of panic
De Leo, 2000 [70]	RCT	40 women in physiological or surgical menopause with DSM-IV criteria for generalised anxiety	100 mg/day kava extract (55% kavain)	6 months	Significant reduction in HAMA scores; combined treatment (HRT + K, ERT + K) showed greater reduction than hormones alone
Gastpar, 2003 [71]	RCT	141 adult outpatients with anxiety, tension and/or erethism; HAMA score > 18; 74% (105 of 141) female	150 mg/day Kava extract WS 1490	4 weeks then 2 weeks observation	Consistent advantages for WS 1490 over placebo; significant improvements in patients' general well-being

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TABLE 2 | (Continued)

Study (Author, Year)	Study type	Sample	Type/volume of kava	Duration	Findings
Geier, 2004 [72]	RCT	50 patients aged 51–90 years with nonpsychotic anxiety; 39 women, 11 men	3 × 50 mg WS 1490 daily	4 weeks then 2 weeks observation	A significant advantage of WS 1490 in HAMA scores after 4 weeks; no withdrawal symptoms in the follow-up phase
Gessner, 1994 [73]	RCT triple crossover	12 healthy male volunteers, 18–33 years, mean age: 28.5	Antares 120, 1 tablet (400 mg kava extract)	6 h	Flicker fusion frequency decreased with kava and diazepam; improved performance in the Pauli test and reaction time measurements under kava
Herberg, 1993 [74]	RCT	20 healthy volunteers each for kava and placebo groups, 18–60 years, half men	3 × 100 mg WS 1490 daily	8 days	WS 1490 well-tolerated, well-being data and adverse events description
Herberg, 1991 [75]	RCT	40 volunteers (20 m, 20 f), 18–60 years (20 placebo, 20 kava)	3 × 100 mg WS 1490 daily	15 days	Concentration appeared to be better than placebo on the 4th day of treatment. No difference in safety-related driving performance, no negative influences from kava extract
Johnson, 1991 [76]	Single blinded study	6 subjects (2 m, 4 f), 24–47 years, clear EEG rhythm and unremarkable neurological status	WS 1490 300–600 mg/day	2 weeks	Information processing improvement, increased vigilance, emotional stability
Kuchta, 2018 [77]	RCT	Anxiety disorder patients, 33 high-dose, 36 low-dose, 40+ years, 47.8% f, 52.2% m, mean age 67.7 years	20–200 mg kavalactones daily	4 weeks	Dose-dependent anxiolytic effect of kava preparations
Kuchta, 2021 [78]	Observational trial	156 patients, 86 f, 70 m	50 mg kavalactones per capsule	Recommended study duration 2–4 weeks	Effective and safe short-term use of kava for nervous anxiety, tension and restlessness
Lehmann, 1996 [79]	RCT	58 patients (29 kava, 29 placebo), anxiety syndromes, 18–60 years, HAMA > 18, 43 f, 15 m	3 × 100 mg Kava extract WS 1490	4 weeks	Good anxiolytic efficacy and significant HAMA score reduction with WS 1490
Lehrl, 2004 [80]	RCT	45 adult out-patients (25 kava, 20 placebo), non-organic sleep disturbances, HAMA > 15	200 mg WS 1490 daily	4 weeks	Kava extract WS 1490 effective for sleep disturbances in anxiety disorders context

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TABLE 2 | (Continued)

Study (Author, Year)	Study type	Sample	Type/volume of kava	Duration	Findings
Malsch, 2001 [81]	RCT	40 patients (20 kava, 20 placebo), non-psychotic anxiety, 25 m, 15 f, HAMA ≤ 14	50–300 mg/day Kava extract	5 weeks	Kava extract WS1490 more effective than placebo for non-psychotic anxiety disorders
Neto, 1999 [82]	Single arm multicentre study	850 patients, prolonged stress/anxiety, 766 evaluated for efficacy (192 m, 574 f)	300 mg WS1490 kava extract daily	4 weeks	Kava reduces anxious mood, tension, insomnia and muscular symptoms like pain or fatigue
Nosa, 2009 [83]	Qualitative methods	12 Tongan men in Auckland, 30–75 years	N/A	Unclear	A number of the men mentioned that drinking kava often. Helped them with illnesses such as stomach pains, flu and cancer, and for relaxation
Olszowy, 2022 [48]	Cross-sectional	Ni-Vanuatu adults, 2 villages (148 m, 219 f), 18+ years, data from 301 participants	Regular kava use (≥ 1 day/week)	Unclear	Sex-moderated relationships between kava use and anthropometric measures; more prominent in men
Sarris, 2009[a] [84]	RCT	60 adults with persistent worry, anxiety; Beck Anxiety Inventory > 10	250 mg kavalactones/ day, 5 tablets	3 weeks	Kava safe and efficacious anxiolytic; may have antidepressant effects
Sarris, 2010[a] [85]	RCT with crossover	Adults with persistent worry, anxiety; 50% males; mean age 44.4 and 43.1 years	250 mg kavalactones/ day, 5 tablets	Unclear	Positive effects on anxiety, stress, mood; no serious adverse reactions
Sarris, 2013 [86]	RCT	GAD patients; 58 adults; 20 males, 38 females; mean age 30.1 years	120/240 mg kavalactones daily	6 weeks	Standardised kava may be a moderately effective short-term GAD treatment; no significant liver function differences; kava increased female sexual drive; kava effective short-term GAD treatment; safe, no addiction or withdrawal issues
Scherer, 1998 [87]	Observational study	Outpatients with anxiety of nonpsychotic origin; 15 males, 37 females	100–600 mg/day Piperis methystici	Mean treatment duration was 50.75 days	Kava effective, safe alternative to antidepressants and tranquillisers
Steiner, 2000 [88]	Ecological	1980s cancer incidence studies in Pacific Islands	Kava consumption per person	N/A	Inverse relationship between cancer incidence and kava consumption

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TABLE 2 | (Continued)

Study (Author, Year)	Study type	Sample	Type/volume of kava	Duration	Findings
Steiner, 2001 [89] – study 1	Cross-sectional preliminary survey	Sober homeless males desiring addictive drug; mean age 40.1 years	24–48 oz. kava tea daily	Few hours	Kava may have anticraving properties
Steiner, 2001 [89] – study 2	Pilot RCT (with option to initiate crossover)	Homeless people with substance addictions	30 mg kavapyrones, as needed	Minimum one week	Potential positive effects of kava on cravings
Thompson, 2004 [90]	RCT	Kava-naive healthy volunteers; 11 females, 9 males; mean age 24.3 years	2 × 150 mg capsules (90 mg kavapyrones)	~1 day	Kava intake increased cheerfulness; no effect on seriousness or bad mood
Volz, 1997 [91]	RCT	Outpatients with non-psychotic anxiety; 52 kava, 49 placebo	WS 1490, 3 × 70 mg kava-lactones capsules	25 weeks	Kava extract effective in treating anxiety
Wang, 2020 [92]	Cohort Study (clinical trial)	Adult smokers; 14 males, 7 females; various ages and ethnicities	3 capsules daily (225 mg kavalactones)	1 week	Kava may reduce carcinogenicity of NNK and facilitate tobacco cessation
Warnecke, 1991 [93]	RCT	Peri- or post-menopausal women with psychovegetative, psychosomatic disorders; HAMA scores > 18	WS 1490, 3 × 100 mg/day (70% kava pyrone)	8 weeks	Kava effective in climacteric neurovegetative and psychosomatic dysfunctions
Watkins, 2001 [94]	RCT	GAD patients aged 35–74; HAMA score ≥ 16 at baseline	Kava 280 mg/day (30% kavalactones)	4 weeks	Kava improves BRC more than placebo
Wheatley, 2001 [95]	Crossover pilot trial	Patients with stress-induced insomnia; mean duration 14.6 years	Kava 120 mg daily and Valerian 600 mg daily	6 weeks kava (2 weeks no treatment, 6 weeks valerian)	Kava rapidly relieved stress and insomnia
Wheatley, 2001 [96]	Randomised crossover pilot trial	GAD patients; HAMA score ≥ 18; mean age 41.4 years	Kava LI150, 1 × 120 mg or 3 × 45 mg daily	4 weeks	Significant HAMA score reductions
Woelk, 1993 [97]	RCT	55 males, 117 females aged 18–65 with non-psychotic anxiety; HAMA score > 18	3 × 100 mg WS 1490 mg kava extract daily	6 weeks	Kava's anxiolytic effect comparable to oxazepam and bromazepam

Abbreviations: BRC, baroreflex control of heart rate; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders; EEG, electroencephalography; ERT, oestrogen replacement therapy; f, female; GAD, Generalised Anxiety Disorder; HAMA, Hamilton Anxiety Rating Scale; HRT, hormone replacement therapy; ICD, International Classification of Diseases; kL, kilolitre; m, male; mg, milligram; n/a, not available'; NNK, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone; RCT, randomised controlled trial.

[a]Each of these records uses data from the same sample.

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TABLE 3 | Description of studies that report the potential harms associated with kava use.

Study (Author, Year)	Study type	Sample	Harm	Type of kava used	Findings
Aporosa, 2014 [46]	Cross-sectional study	2 groups: 18 Fijian and Indo-Fijian participants (25–29 years), 15 schools in Fiji	Kava hangover—cognitive function effect	Various	Kava hangover disrupts processing speed, but not working memory
Aporosa, 2022 [102]	Prospective cohort study	39 male participants, Pacific Island and other ethnicities	Impairment of 6 cognitive faculties	Unknown	Significant regression in Temporal Order Judgement observed after consuming kava
Bartnik, 2017 [103]	Case report	28-year-old female, no significant past medical history	Acute liver failure	Kava root tea	Acute liver failure with successful liver transplant
Becker, 2019 [104]	Case report	45-year-old female	Acute liver failure	Herbal kava medicine	Severe acute hepatitis leading to liver transplantation
Berry, 2019 [105]	Case reports/series	Male drivers (24–50), stopped for impairment, endorsed kava use	Impaired driving after kava ingestion	Various	Kava hinders ability to perform divided attention tasks
Bodkin, 2012 [106]	Case reports/series	34-year-old male, Asperger's, hypertension, hypercholesterolemia, anxiety disorder	Rhabdomyolysis	Kava tea	Possible relation to rhabdomyolysis
Boerner, 2004 [66]	RCT	42 patients (17 female, 25 male) on neuroleptic drug treatment	Worsening psychotic symptoms, increased akathisia	Kava special extract WS 1490	Psychotic symptoms observed in some patients
Brauer, 2003 [107]	Case report	22-year-old woman	Acute liver failure	240 mg kava pyrone/day	Beginning hepatic failure observed after four months of use
Brown, 2007 [108]	Cross-sectional study	31 kava drinkers, 31 non-kava drinkers (18–64 years)	Elevated liver enzymes with heavy kava use	Various	Heavy kava beverage consumption associated with elevated liver enzymes
Brown-Joel, 2018 [109]	Case report	Female in her 30s	Unusual sebotropic eruption, fever, facial swelling	Kava tea	Elevated liver enzymes and eosinophil count observed
Bujanda, 2002 [110]	Case report	55-year-old man	Acute hepatitis	Kava capsules	Admitted with asthenia and jaundice, diagnosed with veno-occlusive disease

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TABLE 3 | (Continued)

Study (Author, Year)	Study type	Sample	Harm	Type of kava used	Findings
Cagnacci, 2003 [67]	RCT	Perimenopausal women, 34 controls, 15 (10 mg group), 19 (200 mg group)	Nausea and gastric pain with kava use	Kava/Kava	Nausea and gastric pain observed in some cases of perimenopausal women
Cairney, 2003 [111]	Cross-sectional study	65 males, 36 females (17–66 years); 26 non-users, 14 ex-users, 18 current users	Kava dermopathy, lower BMI, other effects	Recreational kava	Kava dermopathy and elevated liver enzymes observed in heavy kava users
Cairney, 2003 [112]	Cross-sectional study	11 kava drinkers (24 h pre-test), 17 controls (no kava week prior)	Ataxia, tremors, sedation, other effects	Various	Kava disrupts motor coordination and visual attention but not cognitive functions
Campo, 2002 [113]	Case series	14-year-old girl	Fulminant hepatic failure	Unknown	Fulminant hepatic failure in a 14-year-old girl after using kava
CDC, 2002 [114]	Case series	10 case studies from US, Germany, Switzerland	Hepatic toxicity	Unknown	Reported cases of hepatic toxicity in 10 individuals from the US, Germany and Switzerland
Chanwai, 2000 [115]	Case report	34-year-old Tongan male in NZ	Acute kava toxicity	Unknown	Acute manifestation of kava toxicity in a 34-year-old Tongan male living in Aotearoa/New Zealand
Christl, 2009 [116]	Case report	42-year-old White male	Toxic hepatitis	Unknown	Toxic hepatitis in a 42-year-old White male after using kava
Clough, 2001 [117]	Case series/ Review	334 Indigenous Australians, 15+ years, hospitalised (1992–1997)	Toxicity, withdrawal seizures	Dried powdered kava	32 episodes of seizures reported among users
Escher, 2001 [118]	Case report	50 year old male	Hepatitis	Kava extract capsules	Stage IV encephalopathy after max dose exceeded
Garner, 1985 [119]	Case report	Male aged 30	Visual function effects	Traditional Fijian kava	Kava reduced near point of accommodation and convergence
Grace, 2005 [120]	Case series	Males from Solomon Islands and Vanuatu	Urticarial reaction	Kava drink	Kava caused itchy urticarial rash in two cases
Guro-Razuman, 1999 [121]	Case report	47 year old White woman	Dermatomyositis	Not specified	Myopathic pattern observed

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TABLE 3 | (Continued)

Study (Author, Year)	Study type	Sample	Harm	Type of kava used	Findings
Hannam, 2014 [122]	Cross-sectional study	Study participants in Fiji	Kava dermopathy	Not specified	Kava dermopathy characterised by ichthyosis form eruption
Anonymous, 1993 [63]	Application observational study	Patients with anxiety disorders	Side effects	Kava extract	2.3% adverse effects including CNS disorders
Herberg, 1996 [123]	RCT with crossover	Healthy volunteers aged 35–60 years	Tiredness	Kava extract	22% had adverse events related to kava
Humberston, 2003 [124]	Case report	14-year-old female	Acute hepatitis	Kava-containing product	Hospital admission for rising bilirubin
Huynh, 2014 [125]	Case report	55-year-old White man	Sebotropic	Kava drink/concentrate	Coalescent erythematous macules and thin papules seen
Jappe, 1998 [126]	Case series	70 year old male and 52 year old woman	Sebotropic	Kava extract	Lymphocytic attack on sebaceous glands observed in allergy cases
Kava, 2001 [49]	Survey	Kava drinkers in Fiji	Various side effects	Occasional, heavy and very heavy users	Increasing health problems in heavy kava drinkers
Ketola, 2015 [127]	Case report	36-year-old male	Poisoning	Kava extract	Death by suicide, autopsy showed pulmonary and brain edema
Kraft, 2001 [128]	Case report	60 year-old woman	Acute liver failure	Kava rhizome extract (Antares 120 mg)	Patient experienced acute liver failure, leading to liver transplant, due to kava usage
Leung, 2004 [129]	Case report	61-year-old Tongan male	Acute urinary retention	Not specified	Bladder retention experienced after consuming large amounts of kava, with previous similar less severe problems reported
Macleod, 2017 [50]	Focus groups alongside a population-based prevalence survey	Participants aged 15 years or older in Fiji	Trachomatous trichiasis	Not specified	Eyelash epilation associated with regular kava consumption, especially among daily drinkers
Malhotra, 2017 [59]	Online survey	Participants over 16 years of age in Aotearoa/New Zealand	Impaired driving perceptions	Not specified	Impairment ratings for kava were significant, with 6 out of 26 participants deciding not to drive within 3 h of consumption

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TABLE 3 | (Continued)

Study (Author, Year)	Study type	Sample	Harm	Type of kava used	Findings
Maneze, 2008 [43]	Survey	Tongan men in Sydney	Headaches and fatigue	Kava beverage	Regular consumption of kava at family and social gatherings among Tongan men in Australia, who consume large quantities-some report headache and fatigue
Mathews, 1988 [44]	Survey	Aboriginal community in Arnhem Land	Poor physical health	Not specified	Chest pains, shortness of breath, and reduced levels of appetite, coordination, and lymphocyte numbers associated with kava consumption. Body mass index and skinfold thickness decreased with increasing kava consumption
Maya, 2015 [130]	Case report	58 year old woman with hypertension	Acute liver injury	Kava tea	Acute liver injury attributed to kava, although acute hepatitis C was initially suspected
Meseguer, 2002 [131]	Case report	45 year old female	Parkinsonism	Herbal medicine containing kava extract	Patient diagnosed with depression, experienced a UPDRS score of 94
Nilles, 2018 [132]	Case–control study	Cases and controls from Republic of Kiribati	Thiamine deficiency disease	Not specified	Kava consumption more than once per week doubled the risk of TDD, with consumption more than four times per week increasing the risk eight-fold
Nosa, 2009 [83]	Qualitative methods	Tongan men in Auckland	Fatigue	Not specified	Kava consumption made participants feel tired and lazy, and impacted sexual activity among men
Olszowy, 2022 [48]	Cross-sectional study	Ni-Vanuatu adults from 2 villages	Elevated body measurements	Not specified	Kava use was associated with some elevated measurements of body mass and hip circumference in females, but reduced measurements of body mass and adiposity in males
Parker, 2014 [133]	Case series	Fijian male and children	Hepatitis A	Not specified	Transmission of hepatitis A among individuals who had travelled to Fiji, with all cases having the same HAV genotype
Perez, 2005 [134]	Case series	37 year old male	Altered mental state	Herbal tea containing kava	Patient reported to ED due to leg weakness and severe vertigo after consuming herbal tea containing kava
Peterman, 2019 [135]	Case report	26 year old woman	Ichthyosis	Medicinal kava drink	Patient presented to dermatology clinic with ichthyosis

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TABLE 3 | (Continued)

Study (Author, Year)	Study type	Sample	Harm	Type of kava used	Findings
Raziq, 2022 [136]	Case report	40 year-old man with depression and anxiety	Acute liver failure and death	Not specified	Patient experienced acute liver failure, septic shock, and mesenteric ischemia, possibly due to kava consumption
Riley, 1987 [137]	Cross-sectional	Kava users in Aboriginal community	Folate deficiency	Not specified	Kava users had lower serum folate levels and higher rates of deficiency. Kava use not related to thiamine deficiency
Russmann, 2001 [8]	Case report	33-year-old woman	Hepatotoxicity of kava	Laitan (210 mg kavalactones)	Kava use associated with severe liver damage
Russmann, 2003 [138]	Case series	New Caledonia cases	Hepatic injury	Kava drink and dried kava root	Kava use associated with liver damage and prolonged clotting time
Ruze, 1990 [139]	RCT	Kava drinkers in Tonga	Kava-induced dermopathy	Not specified	Heavy kava use associated with skin dermopathy
Sarris, 2010 [85]	RCT with crossover	Anxious adults	Nausea, GI upsets, tiredness/fatigue	Standardised kava tablets (3.2 g)	Some participants reported gastrointestinal upsets and worsening of depression
Sarris, 2020 [98]	RCT	Non-medicated anxious adults	Poor memory, tremor, liver function abnormalities	Standardised kava tablets (120 mg kavalactones)	Kava not effective for treating diagnosed GAD, associated with poorer memory and tremors
Schmidt, 2000 [140]	Case report	36-year-old woman	Kava-induced dermopathy	Antares kava extract	Kava use associated with delayed-type hypersensitivity reaction
Sibon, 2002 [141]	Case reports/ series	Three cases	Meningismus	Kava drink and capsules	Kava use associated with drug-induced meningismus
Signorini, 2005 [142]	RCT	Healthy volunteers	Multiple harms	Ethanolic kava extract	Adverse reaction reported with Piper prover. Similar symptoms in both groups. Pathogenetic symptoms repeatable
Spillane, 1997 [143]	Case report	27-year-old Aboriginal man	Neurological manifestations	Not specified	Generalised choreoathetosis after kava bingeing
Steele, 2020 [144]	Case report	23-year-old woman	Acute cutaneous toxicity	Not specified	Widespread, pruritic rash with raised liver enzymes
Stickel, 2003 [145]	Review of published and unpublished cases reports	36 cases	Hepatic toxicity	Not specified	Liver damage observed in patients taking kava. Fulminant hepatic failure reported

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TABLE 3 | (Continued)

Study (Author, Year)	Study type	Sample	Harm	Type of kava used	Findings
Strahl, 1998 [146]	Case reports/ series	39-year-old woman	Necrotizing hepatitis	60mg kavapyrone	Hepatitis recurrences preceded by kava use. Causal connection assumed
Suss, 1996 [147]	Case report	51-year-old patient	Allergic contact dermatitis	Antares kava extract	Acute allergic side-effect reported
Teschke, 2009 [148]	Case series—causality assessment	Five patients	Liver disease, death	Various kava extracts	Established causality between kava use and liver disease in 5 patients
Teschke, 2008 [149]; Teschke 2009 [150]; Teschke 2010 [151][a]	Case series—causality assessment	26 patients	Kava hepatotoxicity, liver disease, death	Ethanolic or acetonic kava extract	The Maria and Victorino system established probable causality for kava in 1 patient. Using the quantitative CIOMS scale, causality for kava was highly probable for 1 case and probable for 2 cases. Daily overdose and prolonged treatment common in cases with probable causality for kava
Toohey, 2013 [152]	Case report	80-year-old female Pacific Islander	Psychosis	Concentrated kava pill form	Serious side effect related to inhibition of CYP450 enzymes
Toohey, 2013 [152]	Case report	60-year-old male Pacific Islander	Worsening manic symptoms	Not specified	Serious side effect related to inhibition of CYP450 enzymes
Vakamacawai, 2020 [153]	Retrospective case note review	Patients treated with aspiration/drainage	Amoebic liver abscesses	Not specified	Strong association between kava drinking and ALA in Fiji
Vignier, 2011 [51]	Cross-sectional community based survey	1400 young New Caledonians	Associations with suicidal ideation/ attempts	Not specified	Possible link between kava use and suicidal behaviour
Wainiqolo, 2016 [52]	Case–control study	Cases and controls	Four-wheeled motor vehicle crashes in Fiji	Not specified	Driving following kava use associated with increased odds of crash involvement
Weise, 2002 [154]	Case report	34-year-old woman	Hepatic toxicity	Not specified	Toxic liver damage reported
WHO, 2000 [155]	Case series	Case studies in Switzerland	Hepatitis	Ethanolic kava extract	Rare reports of hepatic reactions, including severe hepatitis
Woelk, 1993 [97]	RCT	172 patients with anxiety	Gastric pressure, nausea, loss of drive, cramps	WS 1490 kava extract	Gastric pressure and nausea reported in Kava group

Abbreviations: ALA, Amoebic Liver Abscess; BMI, body mass index; CIOMS, Council for International Organisations of Medical Sciences; CNS, central nervous system; CYP, Cytochrome 450; ED, emergency department; GAD, Generalised Anxiety Disorder; GI, gastrointestinal; HAV, hepatitis A virus; mg, milligram; *n*, number; NZ, New Zealand; RCT, randomised controlled trial; TDD, Thiamine Deficiency Disease; UPDRS, Unified Parkinson's Disease Rating Scale; US, United States.

[a]Each of these studies uses data from the same sample.

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TABLE 4 | Studies that examine the social and cultural reasons for kava use.

Country/region and Author/year	*N*	Population/sample	Methods	Social reasons for use	Cultural reasons for use
Australia					
South-Western Sydney, Australia Maneze, 2008 [43]	73	73 Tongan men aged over 18	Survey	69% ($n=50$) reported drinking kava for socialisation	52% ($n=38$) reported drinking kava for preservation of culture; 54.7% ($n=40$) for traditional and 8% ($n=6$) for medicinal purposes
Elcho Island, Northern Territory Cawte, 1986 [160]	Not specified	An Aboriginal population in Elcho Island	Observation	Drinking kava to get drunk, akin to drinking beer at a pub. Sometimes Yolngu people use it for special ceremonies	Not specified
Arnhem Land, Northern Territory Clough, 2003 [39]	229 (including 133 aged 18 years +)	One community in western Arnhem Land, 1989–91	Participant-observation	Social gatherings including among household groups at home or out hunting, elders conferring about ceremonial matters, and major public funeral events. Kava was not the principal focus of these activities	Not specified
Aotearoa/New Zealand					
Auckland, New Zealand Fehoko, 2015 [161]	12	12 New Zealand-born Tongans; members of *faikava* Auckland clubs	Phenomenology and Talanoa	Not specified	An identity marker, *faikava* celebrates Tongan heritage and language via song, music and discussion, akin to a 'cultural classroom'
Aotearoa/New Zealand Aporosa, 2011 [162]	1	One person of Fijian decent in New Zealand	Interpretive phenomenology	The author reported using kava as opposed to alcohol in social situations as a social lubricant	Not specified
Vanuatu					
Port Vila, Vanuatu Jowitt, 2001 [163]	115	115 Vanuatuans; 66% ($n=75$) male	Questionnaire	When asked their number one reason for drinking kava, 28.4% reported 'meeting friends over kava', 4.3% reported 'to find out news' and 11.3% reported 'I can meet new people'	When asked their number one reason for drinking kava, 9.6% reported 'customary reasons'. When asked what they liked about effects of kava, 25.4% responded 'it makes me feel part of Vanuatu', and 17.5% responded 'it affirms cultural identity'

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TABLE 4 | (Continued)

Country/region and Author/year	*N*	Population/sample	Methods	Social reasons for use	Cultural reasons for use
Tanua, Vanuatu Gregory, 1988 [164]	Not specified	The author studied the mental effects of Kava on Tanua, Vanuatu in 1976 and 1977	Observation, fieldwork	Used for socialising, adult men drink Kava every evening. To curb violence among young men who were frequent users of alcohol	Not specified
Vanuatu Smith, 2021 [165]	Not specified	No defined sample	Ethnography	People abandon wage work and seasonal; labour to farm kava, as it is more conducive to economic self-reliance	Not specified
Micronesia					
F.S. Micronesia Sakai, 2022 [53]	89	48 people from Mand and 41 people from Kolonia	Interviews using questionnaires, observation and conversation	Commonly reported reasons for drinking sakau included treating anxiety and socialising	Obtaining a mother's permission to marry in a Pohnpeian household, and as a means for forgiveness. 4% of Mand residents referenced drinking for traditional reasons
Pohnpei, F.S. Micronesia Balick, 2002 [166]	Not specified	No defined sample. Author conducted observation work in Pohnpei	Fieldwork, observation	Fosters camaraderie and conversation including family and community matters, and island politics. Also used to ask for forgiveness, to settle disputes between parties (mediated by a chief or titled clan member) and to ask a father for his daughter's hand in marriage	The plant symbolises respect for oneself, one's family and one's culture. It holds the culture together through the most difficult of times
Indonesia					
Merauke District, Papua, Indonesia Suharno, 2016 [20]	74	74 people from nine observation sites. 58 from Marid tribe, 15 outside communities	Observation, questionnaires and interviews	To resolve conflict between social groups; kava provided as a means to unit the group to solve the problem	Kavi (or *wati*) as traditional medicine; wati also compliments important occasions such as: wedding ceremonies, proposals; ceremonial meals; special banquets; and among traditional leaders

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TABLE 4 | (Continued)

Country/region and Author/year	*N*	Population/sample	Methods	Social reasons for use	Cultural reasons for use
Fiji					
Fiji Aporosa, 2022 [167]	252	252 Fijian teachers and senior education officers	Vanua research framework	Yaqona is integral to school survival model and underpins state and community partnerships as a source of school revenue, education and attendance incentive	Solidifying a sense of place, tradition and power; yaqona represents an ingestible manifestation of vanua (a concept of culture); its consumption reinforces traditionalism and wards against the perceived threats of Western modernity
Fiji Shaver, 2014 [54]	28	28 adult men (M = 46.4, range 20–78) from village households of Vanua Levu	Behavioural observations and oral interview data	Achieving status and developing social alliances among men; ritual investments may indirectly increase reproductive success	Participation in kava ceremonies is a pathway for status reinforcement. Informants reported they plant kava for two reasons: for ritual functions and to sell
Eastern Fiji Abramson, 2005 [168]	Not specified	No defined sample. Author participated in fieldwork in Eastern Fiji	Fieldwork, observation, ethnography	Yaqona ceremony differs between social use (including for tourists) and traditional use as a ceremony. Gender and age difference exists between social and cultural use	Fijians drink yaqona as a customary practice, usually associated with chiefly hierarchy. Relations of Fijian-ness when participating in traditional ceremonies
Rural Fiji Brison, 2001 [169]	Not specified	Conducted fieldwork in Rakiraki, a village in the northeast of Fiji's largest island, Viti Levu	Ethnographic fieldwork	The sevusevu is, the ceremonial presentation of kava (Fijian: yaqona). Use includes to reconfirm the bond of friendship between new districts, to assert continued kinship, to assert relative status. For tourists, it is used to portray Fijians as friendly and cultural people	The yaqona root ideally acts as a vehicle connecting ancestral spirits of a particular location with a human community connected
Fiji Toren, 2020 [170]	Not specified	No defined sample	Ethnography	For every day and ceremonial use. Other less fertile islands only drink it on important occasions, such as weddings, funerals, and other life-cycle ceremonies	The drinking of kava is central to na cakacaka vakavanua (meaning 'work in the manner of the land'), an expression which encompasses ritual and tradition

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TABLE 4 | (Continued)

Country/region and Author/year	*N*	Population/sample	Methods	Social reasons for use	Cultural reasons for use
Fiji Tomlinson, 2007 [171]	Not specified	No defined sample. Author conducted research in Fiji during 1996, 1998–99, 2003, 2005–06	Observation, fieldwork	Used in modern Fijian Christian practice and the range of social activities surrounding this. Kava is a symbol of social unity	Not specified
Fiji Shaver, 2014 [54]	Not specified	No defined sample	Ethnography	To maintain social alliances in the context of ritual venues	Not specified
Fiji Shaver, 2015 [172]	90 people, with about 50 adults	Data collection took place in 2009–11 in a rural village on the island of Vanua Levu in Fiji's Northern Division. The village sits on Savusavu Bay	Ethnography, interviews	Participation in kava ceremonies may lead to increased status due to demonstrations of strength and endurance relative to other men	For men of high rank, the payoffs for participating in Christian ritual are higher than for participating in kava ceremonies. For low-ranking men, the payoffs in kava ceremonies are higher than they are for investing in Christian rituals
Fiji Kava, 2001 [49]	300	Kava drinkers in Nadi, Lautoka, Ba and Sigatoka	Survey, interviews	Used to socialise with other people	Kava's consumption frequently follows a hierarchical and strict ceremonial form. Also used as a ritual offering or form of payment
Hawai'i					
Hawai'i Baker, 2012 [173]	Not specified	No defined sample. Author conducted fieldwork in Hawai'i	Ethnographic observation	Although shifting, in nearly all cases kava is still consumed socially. The purpose of consumption is largely consonant with less formal, social consumption in Pacific Islander communities	Not specified

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TABLE 4 | (Continued)

Country/region and Author/year	*N*	Population/sample	Methods	Social reasons for use	Cultural reasons for use
Canada					
Canada Webb, 2005 [174]	Not specified	30 health food stores and 28 pharmacies	Qualitative interviews	Pharmacists and health food store employees suggested similar conditions that might be treated with kava (mostly sedative-related uses), but pharmacists made fewer claims for the benefits of kava and were more cautious regarding assertions of safety	Not specified
Kingdom of Tonga					
Kingdom of Tonga Spillius, 1988 [175]	Not specified	No defined sample	Fieldwork	The kava ceremony clarifies social principles and social roles. The kava ceremony displays the political relationships of titles to one another	Not specified
International (Multiple Locations)					
Aotearoa/New Zealand, Utah (US), and the Kingdom of Tonga Tecun, 2020 [176]	Not specified	Moana Mormons between 2015 and 2019	Ethnography	Kava settings allow men to speak openly and support each other materially and spiritually through difficult times. To strengthen bonds within the group	Some groups have begun using kava as a medium for membership reactivation, retention, and ministering to those who are struggling or not regularly attending church
Fiji and Western Polynesia Turner, 1992 [177]	Not specified	Nairukuruku and neighbouring communities in the district of Matailobau in the hill country of eastern Viti Levu	Interpretive phenomenology	The drink is served in order of rank and seniority. The act of exchange is a symbolic statement of unity	Not specified

Abbreviations: *n*, number; US, United States.

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health food stores and pharmacies [171, 178–184]. Only four (27%) records specified the study type, consisting of a case study, ethnographic study, pre- and post-policy implementation study, and website review [178, 181, 182, 184]. Of the three economic outcomes of interest, 11 (73%) records reported on sale [11, 178–187], 10 (67%) on trade imports and exports [11, 178–181, 186–189], and five (33%) on manufacturing and production [179–181, 188, 189].

Records reporting on the sales of kava discussed the regulatory, financial, and production constraints associated with the bans adopted by various European Union (EU) countries in the early 2000s. Such constraints include Germany revoking the status of kava as a medicinal product following the kava ban, and the subsequent impact of this on the production, retail sales, and labelling misinformation of kava [179]. Other records reported on the conditions of sale for kava (i.e., the differences in the classification standards of kava as either an herbal remedy or a dietary supplement, as well as in the prescription or medical advice required for the pharmaceutical dispensation of kava) [183, 185].

Records documenting the sales of kava typically distinguish between a domestic drinking market and export drinking, pharmaceutical and dietary supplement markets. Trade importation and exportation of kava has largely been reported from the perspective of the EU-enacted kava ban in the early 2000s on various international markets and kava-dependent occupations, particularly in Fiji, Vanuatu, Hawaii, and the South Pacific more broadly [186, 187]. The increase in the sale and distribution of kava in the 1990s in Australia, as well as the impacts of the post-EU ban of kava in Germany in the early 2000s, were also reported in two records [178, 186]. The manufacture and production of kava were variably discussed among four records: (i) active ingredients no longer approved as medicinal products, yet continually sold as dietary supplements; (ii) kava cleaning and checking processes adopted in the South Seas; (iii) processes that differentiate the production of kava for domestic consumption or exportation; and (iv) the growth of the Hawaiian ‘awa industry [179–181, 189].

3.5 | Social and Cultural Reasons for Kava Use

Twenty-five records reported on the social or cultural reasons for kava use (Table 5). Most of these records were from Fiji ($n = 9$, 36%), followed by Australia ($n = 3$, 12%). Two (8%) records were conducted across multiple locations including Fiji, Western Polynesia, Tonga, United States and Aotearoa/New Zealand. The number of participants in included records ranged from one to 300 participants; however, the majority of records ($n = 14$; 56%) did not specify the number of participants. Varied study designs were used, including surveys, questionnaires, interviews, observation, ethnographic, and phenomenological techniques, as well as traditional methods consisting of Talanoa and the Vanua research framework.

Fifteen (60%) records reported on the use of kava in social settings, as a recreational activity, to aid social bonding and unity, or for developing or maintaining alliances [12, 43, 49, 171, 160–173]. Four (16%) records discussed kava use as a means of asking for forgiveness or to aid in conflict resolution [20, 53, 83, 166]. Two (8%) records reported on the use of kava as a social lubricant, suggesting some people may use it as an alternative to alcohol [162, 164]. However, papers have emphasised that its consumption is vastly different from alcohol, producing calming and passive effects [166, 170].

Three (12%) records discussed kava use as an integral part of the consumer's sense of identity [43, 163, 167]. Seven (28%) records discussed the social order or rank underlying kava consumption, with some suggesting that traditionally only men or people of higher social status or age were permitted to consume kava [83, 177, 54, 172, 168–169]. One (4%) record suggested that participation in kava ceremonies may demonstrate strength and endurance, facilitating their ascent in social rank [172]. While the consumption of kava has traditionally been considered relatively formal, one record suggests there may be a shift in consumption patterns to less formal use [173]. This, however, appears to vary by region, as one (4%) record highlighted different patterns of consumption across different areas of Fiji, some areas consuming kava for everyday use and others only drinking it on important occasions, such as funerals or weddings [170].

One (4%) record highlighted how kava cultivation in Vanuatu has strengthened self-reliance among people who have abandoned wage work and seasonal labour to farm kava, believing this practice to be preferable to working overseas [165]. Furthermore, one (4%) record suggests kava is fundamental for Fijian school governance as it enables state and community partnership, as well as academic achievement, identity formation, and school function [167].

Fourteen (56%) records highlighted the cultural reasons for kava use [20, 43, 49, 53, 54, 161, 163, 166–170, 172]. These largely surrounded the solidification of one's cultural identity and connection to their country. It appears kava plays a central role in sacred traditions such as funerals, weddings, ceremonial banquets and other special occasions [20, 53, 83, 170]. Kava may also facilitate attendance and engagement with the church, as well as preserving language, culture, tradition and song [43, 161, 172, 176]. One (4%) record highlighted the importance of drinking kava for many Pacific Island peoples as a way of maintaining traditions and opposing perceived threats posed by Western modernity [167].

3.6 | Policies Related to Kava Use

Policy, regulatory and advocacy frameworks of kava have been published in 36 records since 1980 (Table 6). Most of these records were in Australia ($n = 13$, 36%) [39, 42, 194–195, 199, 63, 180, 188, 193–198] and Germany ($n = 8$, 22%) [11, 15, 204, 140, 216–208]. Other countries with policy-related publications concerning kava include the United Kingdom, France, the United States, Sweden, Vanuatu and Aotearoa/New Zealand. Approximately half of these publications categorised kava as a ‘beverage and/or food’ (53%), while around a quarter labelled it as a ‘herbal medicinal drug’ (22%). The remaining publications referred to kava in various ways, such as a drug and dietary supplement, root extract, or natural medicine, or they did not specify its categorisation.

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TABLE 5 | Studies that examine the economic implications of kava.

Country/region	Population/sample	Trade (imports/exports)	Manufacturing/ production	Sale
Australia				
Arnhem Land, Northern Territory, Australia Jones, 2005 [178] Northern Territory (NT), Australia McKay, 1995 [190]	Arnhem Land Aboriginal communities Not specified	In response to increase of illegal kava trade in the 1990s, the *Kava Management Act* was enacted in the NT to legislate community areas where kava could be legally consumed Importation of kava to sell as a food was illegal in Australia, following its prohibition as a botanical under the Food Standards Code in 1991	Not specified NT Department of Health and Service received an application to amend the Code to allow kava to be sold in the NT	Yirrkala community elders decided kava was not to be made available in their community (due largely to other non-Aboriginal sellers entering the kava market) Not specified
Fiji and Australia				
Fiji and Australia Markham, 2022 [180]	Fijian kava producers and Australian government policymakers	Exports of 2000 t in 2011 to over 12,000 t in 2019 (due largely to changes in Australian policy of commercially importing kava)	Growing crops for large exports is different from traditional horticulture; economic incentives for production may supersede land policy tradition	Farm-gate prices for kava increased from approx. FJ$20 p/kg in 2006–2014 to approx. FJ$100 p/kg in 2019. Price was FJ$150 at its peak
Fiji				
Fiji Tomlinson, 2007 [171]	Fijian kava drinkers	Villagers sell their kava to middlemen, who re-sell it locally or take it to mainland markets. Two major markets for kava are islanders living overseas and pharmaceutical companies selling kava pills	Not specified	Not specified
Fiji McKay, 1995 [190]	Not specified	Kava imports from Fiji are estimated at around $0.7 million	Not specified	Not specified
Vanuatu				
Vanuatu Kilham, 2020 [181]	Kava traders in Vanuatu: Frank King, John Fordham and Michael Louze	24 registered kava exporters operating in Vanuatu. Vanuatu exported a total of 819 tons of kava in 2019, generating revenue of 834 million Vatu (or just over $7 million)	South Seas receives noble kava roots that are pre-cleaned, peeled, cut, washed and sun-dried (up to 10–20 bags [25 kg] of dry kava received per week)	40 tons of kava per week sold in kava bars in February 2020 Export price of Kava is approx. $40 p/kg, and 700 Vatu ($6 p/kg) if sold at Anabru market

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TABLE 5 | (Continued)

Country/region	Population/sample	Trade (imports/exports)	Manufacturing/ production	Sale
Vanuatu Lindstrom, 2009 [186]	Not specified	Following kava ban across many countries in 2001 and 2002, Vanuatu export market value fell and did not return to their late 1990s level of $100 p/kg until 2006	Not specified	By 1990s, kava and kava-containing products were popular in global recreational and medicinal drug markets
Aotearoa/New Zealand				
Aotearoa/New Zealand Rychert, 2016 [185]	Not specified	Not specified	Not specified	Conditions for sale differ whether kava classified as food, dietary supplement or herbal remedy
USA				
Hawaii O'Sullivan, 2001 [189]	Not specified	Although ‘awa has been popular in European markets (e.g., Germany) for decades, it has only recently gained attention in the US for reducing anxiety and stress	Safe use of kava dietary supplements depended largely on its manufacture and marketing in the ‘awa industry	Not specified
Hawaii O'Sullivan, 2004 [187]	Not specified	Hawaiian farm revenue from sale of ‘awa dropped 88% from 2001 to 2002. Loss of local export earnings in the Pacific exceeded US $200 million	Not specified	Following 10 reports of liver transplants following kava consumption, kava banned in many countries in the early 2000s
Canada				
Canada Mills, 2003 [182, 191]	33 health food stores in a single large Canadian city	Not specified	Not specified	Two months following kava ban in Canada in August 2022, 57% of 30 stores continued to sell kava (11 on shelf, 6 behind counter)

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TABLE 5 | (Continued)

Country/region	Population/sample	Trade (imports/exports)	Manufacturing/ production	Sale
Germany				
Germany Hengen, 2014 [179]	German consumers	Kava-containing products continue to be sold illegally via Internet as alleged food supplements	Active ingredients no longer approved in the course of approval of medicinal products	Although kava lost its approval as a medicinal product in 2002, it can be imported to sell as a food
Germany Schmidt, 2014 [11]	Not specified	Vanuatu, Fiji, Tonga, Samoa and Hawaii and major kava producing and exporting countries	Not specified	By 2001, sales of kava had reached approx. 10% that of benzodiazepines (total of 450 million daily doses 1991 to 2001)
Brazil				
Brazil Rates, 1997 [183]	Pharmacies in Porto Alegre ($n = 50$) and Caxias do Sul ($n = 5$)	Not specified	Not specified	7 pharmacies only sold kava (72% of which required prescription); 10 pharmacies only dispensed kava (60% of which did not require prescription)
Global				
All relevant English-language websites Morris, 2003 [184]	522 websites identified from Google, Yahoo, Ask Jeeves, MSN and AOL	Not specified	Not specified	24/62 kava retail sites did not mention hepatic failure; 11 sites said kava was safe with few or no adverse effects

Abbreviations: AOL, America Online; FJ, Fijian Dollar; kg, kilogram; MSN, Microsoft Network; *n*, number; NT, Northern Territory; p/kg, price per kilogram; US, United States.

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TABLE 6 | Studies that examine the policy of kava.

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
Australia				
Australia Markham, 2022 [180]	Food crop	Australian Centre for International Agricultural Research-CSIRO initiatives	Calculated 'nutrient budgets': nutrients of various cash crops, such as kava, are not being sufficiently replenished following harvest	Greater call to action needed for Australian policymakers to invest in sustainable development, cultivation and harvest of kava
Australia Anon, 2019 [192]	Mainly beverage	Australian Government Department of Health's Office of Drug Control	The Office of Drug Control is formulating a proposal to double the amount of kava that can be imported into Australia for personal use, and consulting with stakeholders regarding the potential health, economic, social and community impacts of the pilot program	It is expected that increases in personal importation limits of kava will strengthen bilateral relations between Australia and its Pacific Islander neighbours. Although border security controls for kava will remain the same, the impact of this legislation on the commercialisation of kava, and the health and social impacts on users of kava, is unclear
NT, Australia Anon, 2015 [193]	Not specified	Amendments to NT Kava Management Regulations (1998–2015)	To list the various licensing, sale and packaging regulations kava licencees are bound by in the Northern Territory	Between 1998 and 2015, 12 pieces of legislation and several amendments have come into effect in the Northern Territory legally enshrining the licencee provsions of kava-related corporations
Arnhem Land, NT, Australia Urquhart, 2009 [194]	Mainly beverage	Northern Territory Licensing Commission (2007)	In June 2007, non-medical and scientific imports of kava into Arnhem Land communities were banned, namely due to evidence of harms associated with kava use	Effectiveness of this legislation on reducing kava-related harms yet to be determined
Nhulunbuy, NT, Australia Hughes, 2007 [42]	Mainly beverage	Northern Territory Licensing Commission (2007)	In June 2007, non-medical and scientific imports of kava into the Nhulunbuy hinterland were banned, namely because of evidence of harms associated with kava use	Reduction in profit from kava sales and retail, but increases in presumed black-market kava sales. Health issues remain a top priority for individuals of the Nhulunbuy hinterland
Yirrkala, East Arnhem Region, NT, Australia Jones, 2005 [178]	Mainly beverage	Kava Management Act (1998)	Established licensed areas where kava could be legally possessed and consumed by Aboriginal communities	Further amendments to the kava licensing regime was adopted via government support, community voices embedded in amendments, and ongoing partnership with Aboriginal people

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
Arnhem Land, NT, Australia Clough, 2003 [12, 39]	Mainly beverage	Kava Management Act (1998)	Established licensed areas where kava could be legally possessed and consumed by Aboriginal communities	Consultations with traditional First Nations people, community organisations and NT Government led to the creation of licensed kava areas, wholesale licences and retailers legally supplying kava as of May 2002
NT, Australia Loughnan, 1999 [195]	Mainly beverage	Kava Management Act (1998)	Established licensed areas where kava could be legally possessed and consumed by Aboriginal communities	Criminal penalties associated with kava consumption and sale seem arbitrary and unjustfied and are contrary to Aboriginal self-determination
NT, Australia McKay, 1995 [190]	Mainly beverage and food	Standard A12 of the Foods Standards Code (Metals and Contaminants in Food) (1995)	The Northern Territory Department of Health and Community Services made a formal request to the National Food Authority that kava be excluded from the Foods Standards Code preventing the sale of kava as food	The applicant has made this request to overturn the illegal status of kava in the Northern Territory, believing that this will substantially improve the ability for individuals to understand the potential public safety, harms and health issues associated with its sale and supply
NT, Australia d'Abbs, 1995 [196]	Mainly beverage	Food Standards Code (1994)	Recommendation to be classified as a 'prohibited botanical', thereby preventing the legal sale and purchase of kava as a food	It is unclear what impacts this amendment to the Food Standards Code will have on the sale and production of kava in the NT, as well as other Australian states and territories
Arnhem Land, NT, Australia d'Abbs et al., 1993 [197]	Mainly beverage	NHMRC Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP); *Therapeutic Goods Act* (1991)	Kava listed on Schedule 4 of the NHMRC Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) and legally enshrined as a 'registerable' therapeutic product	Minor changes to Consumer Protection and Fair Trading Acts regarding the penalties in place for breaches, but control measures remain the same. Recommendations made in this report to enact appropriate controls for licensed premises selling kava and government fiscal responsibility to eliminate kava over-consumption

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
Australia Flynn, 1991 [198]	Mainly beverage	*Consumer Affairs and Fair Trading Act* (NT) 1991 ('CAFTA')	Concludes 'specified goods are dangerous to health or a possible source of danger to health' (the report must conclude that death or bodily harm was the direct or indirect result of a specified good, such as kava)	Does not address issues relating to the fact kava is dissimilar from 'goods' and is a drug, and casts doubt over the use of criminal punishment for the use of [192] kava. Concerns also raised by the fact ministerial notices created criminal offences, and not Legislative Assembly
Arnhem Land, NT, Australia d'Abbs, 1991 [199]	Mainly beverage	NHMRC Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP); *Therapeutic Goods Act* (1991)	In WA, supply and sale of kava was prohibited in 1988. Kava listed on Schedule 4 of the NHMRC SUSDP and legally enshrined as a 'registerable' therapeutic product	Across Australia, consultations underway with communities to discuss whether and under which conditions they would like kava supplied in their community (3 communities have opted for banning the supply of kava and an additional 5 have enacted control measures for the supply of kava in their communities thus far)
Aotearoa/New Zealand				
Aotearoa/New Zealand Rychert, 2016 [185]	Various—food, psychoactive substance, dietary supplement, herb	*Psychoactive Substances Act* 2013	Aimed at controlling the legal consumption of 'new psychoactive substances' or 'legal highs', of which kava is a part	Kava likely falls under a number of different regulatory regimes due to its varied classification (e.g., as a food, psychoactive substance or dietary supplement), making it difficult to legislate and therefore penalise
Vanuatu				
Tanna, Vanuatu Gregory, 1981 [200]	Mainly beverage	The 'John Frum' movement (1930s)	A social 'cult' movement that arose following first attempt to ban kava and during second attempt to ban kava that still exists and is carried on by his descendants; essentially any male who drank kava and with a strong ancestral connection, at any time of the day. It symbolised devotion and allegiance to the John Frum movement	A strong reversion to customary and traditional kinship networks, as well as continued drinking of kava by adult men, especially in Christian villages (unopposed by any Church or Mission elders)

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
Oceania				
Oceania Baker, 2009 [201]	Mainly beverage	International Kava Executive Council (IKEC) (2003)	Following kava bans in European countries, such as Germany and Switzerland in the early 2000s, IKEC unites various scientists, traders of kava, lobbying groups and medicinal and botanical organisations to form a 'Kava Alliance', aiming to overturn kava bans and restore kava's regulatory and trading status among consumers in these countries	EU member states continue to be lobbied to revoke kava bans and support from the WHO has been sought. One strategy employed by IKEC is to create a market for kava to be exclusively created in its traditional form so that any concerns of hepatoxicity can be mitigated
USA				
Hawaii Baker, 2011 [202]	Mainly beverage	Awa Development Council (2004)	To integrate the perspectives of religion, science and education on 'awa to best identify how to conceptualise its place in the commercial market	Educating the public via 'Kava Festivsl' and sharing knowledge and wisdom about the traditional and contemporary uses of kava upon purchase. Also facilitate discussion between different stakeholder groups (e.g., scientists, cultural experts and business proprietors)
Hawaii Brown 2003 [203]	Mainly beverage	Hilo Region Circuit Court comparison, regulation/sales and Hawaiian drinking prohibition cases ($n = 621$) (1850s–1890s)	Awa offences during this period predominantly involved sale (particularly to aboriginal people), although data and conclusions combined with liquor and opium statistics	These data highlight the change from missionary-related practices to more of a plantation and capitalistic-driven society within the Hawaiian kingdom
Germany				
Cologne, Germany Kuchta, 2015 [15]	Herbal medicinal drug	German Administrative Court (2014)	The court found BfArM could not conclusively prove a causal relationship between kava consumption and liver hepatoxicity	An appeal has been made by the Federal Institute for Drugs and Medical Devices to overturn this decision

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
Germany Strater, 2015 [204]	Herbal medicinal drug	BfArM appeal of German Administrative Court 2014 decision (2015)	The court found BfArM could not conclusively prove a causal relationship between kava consumption and liver hepatoxicity	The appeal by BfArM was dismissed
Germany Schmidt, 2014 [11]	Herbal medicinal drug	German Administrative Court (2014)	The court found BfArM could not conclusively prove a causal relationship between kava consumption and liver hepatoxicity	An appeal has been made by the Federal Institute for Drugs and Medical Devices to overturn this decision
Germany Teschke, 2011 [205]	Herbal medicinal drug	WHO scale, Naranjo scale, CIOMS (Council for International Organisations of Medical Sciences) scale	To highlight the issues of ascribing kava-related hepatoxicity based on the use of unspecific' measurements obtained from the WHO and Naranjo scales	Call for use of more specific, quantitative measures such as the CIOMS scale to assess the causality of drug-induced hepatoxicity
Germany Blumenthal, 2005 [206]	Herbal medicinal drug	German health authorities (BfArM) (2005)	Repealed the previously introduced kava ban enacted in Germany in 2002	Repeal was the effect of kava producers' persistent lobbying (e.g., by IKEC). Kava was not made available for purchase following this repeal, but administrative processes to reobtain kava registrations can now be discussed following the dissemination of clinical data
Germany Dietlein, 2003 [207]	Antidepressants and prescribed kava extracts: Antares, Laitan and Kavasporal forte	MediPlus database (287 prescribers treated 5449 patients with 13,323 prescriptions). (Antares, $n = 5270$; Laitan, $n = 4435$; and Kavosporal forte, $n = 3618$)	To understand the extent to which physicians and doctors adhere to the RDD when prescribing kava	Across the three prescribed extracts, an overall tendency to over-prescribe low RDDs and under-prescribe high RDDs of kava was reported. This incongruence may be associated with potentially harmful side effects and ineffective therapy, respectively
Germany Schroder-Bernhardi, 2001 [208]	Antidepressants & prescribed kava extracts: Antares, Laitan and Kavasporal forte	MediPlus database ($N = 76$ prescribers with 197 Antares patients and 339 prescriptions in 2000; $N = 38$ prescribes with 104 Laitan patients and 201 prescriptions in 2000; $N = 54$ prescribers with 80 Kavosporal forte patients and 165 prescriptions in 2000)	To understand the extent to which physicians and doctors adhere to the RDD when prescribing kava	Across the three prescribed extracts, the RDD was 'significantly overstepped' in 78% of cases. The RDD was adhered to in 41% of cases, whereas it was under-dosed in 39% of cases

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
Germany Schmidt, 2000 [140]	Kava root extract	European standard series prick and patch tests of Antares extract	To understand how Antares compares with the prick and patch test of the European series in terms of yielding positive or negative results when diluted in petrolatum at 20 min, 1 day, 2 days and 3 days	In 10 control patients, 1:1 Antares-containing patch tests were negative, suggesting this case may have experienced an allergic reaction to the Antares extract
United Kingdom				
Richardson, 2007 [10]	Unlicensed herbal medicine	The United Kingdom's Committee on Safety of Medicines (CSM) Expert Working Group (EWG) and the UK's Medicines and Healthcare products Regulatory Agency (2003)	Formally banned the consumption and sale in the UK as a result of reported adverse liver and health reactions	Kava has been withdrawn from the UK (and EU) markets, with harms continuing to be monitored in countries where it has not been banned, such as the US and Australia
Cavaliere, 2006 [209]	Unlicensed herbal medicine	The United Kingdom's Committee on Safety of Medicines (CSM) Expert Working Group (EWG) and the UK's Medicines and Healthcare products Regulatory Agency (2003)	Following review of kava safety data, this UK Expert Committee recommends that the kava ban (in place since 2003) remains as is in the UK	Kava ban is unchanged
Adcock et al. 2002 [210]	Medicines containing kava and unlicensed products	Medicines Control Agency and Committee on Safety of Medicines (MCA/CSM) (2002)	Following an increase in reported patient hepatoxicity (approximately 68 cases worldwide), liver transplants and death, the MCA and CSM proposed the prohibition of the production and distribution of kava in the UK. However, MCA acknowledged that kava consumption rates in UK are unknown	The production and unlicensed sale and supply of kava-containing products for medicinal purposes has been banned
Germany and UK				
Germany and UK Mills, 2003 [182]	Herbal medicinal drug, unlicensed herbal medicine	BfARM (Germany), Medicines Control Agency and Committee on Safety of Medicines (MCA/CSM) (UK) (2002/2003)	Formal banning of kava in Germany and the UK, respectively, following media reporting on kava related-liver toxicity, and even a kava-induced suspected case of death	A greater willingness to re-evaluate potential benefits of kava, or at least a more sensible assessment of its suggested harms, should be considered

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/ advisory body	Aim	Effect
France				
France Prescrire Int, 2003 [211]	All types of kava except for homeopathic compositions diluted to Hahneman's 5th centesimal dilution (5CH) at the minimum	French health authority	Following reported cases of hepatic injury that have continued to increase since January 2002, specifically two suspected kava-induced deaths and six liver transplants, kava was banned for one year in France	This one-year ban in France is consistent with market bans of kava in other countries, such as Spain, Portugal, UK and Australia
Sweden				
Sweden Mattsson, 2002 [212]	Natural medicine	Not specified	Kava is not legally permitted as a 'natural medicine' in Sweden	The authors draw comparisons to the recent kava ban enacted by Germany in response to potential liver injury concerns and acknowledge there is insufficient understanding of herbal medicines, of which kava is a part
European Union				
EU Hengen, 2014 [179]	Herbal medicinal drug	Article 14 of Regulation (EC) No. 1169/2011	Legal requirement to ensure all food products are appropriately labelled for 'distance selling'	Unclear how this legislation applies to products that are sold or traded online, especially for products with dubious classifications (e.g., kava is sometimes labelled as 'dietary supplements' and therefore classified as medicinal in Germany)
EU Gruenwald, 2003 [213]	Herbal medicinal drug	EU Center for Development	Recommended that the kava ban enacted in various EU countries, such as Germany and Switzerland, was not justified	Safety of kava has been demonstrated in several methodologically rigorous clinical trials in alignment with Good Clinical Practice; ingestion of kava at recommended dose levels can be potentially efficacious for anxiety and stress

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TABLE 6 | (Continued)

Country/region	Type of kava	Legislation/guideline/advisory body	Aim	Effect
International				
International Robinson, 2021 [214]	Mainly beverage	Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity 2010 (Nagoya Protocol)	To provide greater sovereignty and recognition of customary law and governance regarding natural commodities and the structures in place for their oversight	Kava is conceptualised and used in different contexts and for different purposes by various Pacific Island nations making the Nagoya Protocol somewhat difficult to implement
International Teschke, 2011 [215]	Mainly beverage, drug and dietary supplements	Pan-Pacific kava legislation (Kava Quality Standardization Code)	To provide guidelines for the safe, manufacture and production of kava among farmers, distributers and regulators based on the analysis of current standards for kava beverages and supplements	It is hoped this standardised, uniform code will enhance not only the chemical and physical safety of kava, but also enhance its quality, bringing it in line with the rules and regulations of international health bodies

Abbreviations: AWA, Awa Development Council; BfArM, German Federal Institute for Drugs and Medical Devices; CIOMS, Council for International Organisations of Medical Science; CSIRO, Commonwealth Scientific and Industrial Research Organisation; CSM, Committee on Safety of Medicines; EU, European Union; EWG, Expert Working Group; IKEC, International Kava Executive Council; MCA, Medicines Control Agency; *n*, number; NHMRC, National Health and Medical Research Council; NT, Northern Territory; RDD, recommended daily dose; SUSDP, Standard for the Uniform Scheduling of Drugs and Poisons; UK, United Kingdom; WHO, World Health Organization.

Records that examined kava-related policy could be broadly distilled into five categories: (i) health authorities, medicinal agencies or committees; (ii) councils, departments and advocacy groups; (iii) judicial decisions or legislation; (iv) kava prescription databases; and (v) the measurement and assessment of kava. Forty-seven percent ($n=17$) of records discussed judicial decisions or legislation relating to kava [10, 11, 15, 39, 42, 194–215, 206, 209] and 25% ($n=9$) discussed the role of councils and departments in the enforcement, advocacy or promotion of kava [188, 192, 196, 206, 209–214]. Legislation surrounded the establishment of licensed areas in which kava could be legally possessed and consumed by Aboriginal communities in Australia (e.g., the legal implications of the *Kava Management Act* 1998 and its subsequent amendments on the Aboriginal peoples of Arnhem Land, North Territory), and the decision by the German Administrative Court to overturn the kava ban enacted by Germany in the early 2000s. This repeal was enacted because the court found the causal connection between kava ingestion and liver toxicity could not be reliably established by the German health authority (BfArM) (i.e., the basis on which Germany banned kava in the early 2000s) [11, 15, 204]. Other legislation highlighted the various ways in which kava has been classified by law in countries, such as a 'psychoactive substance' in Aotearoa/New Zealand (*Psychoactive Substances Act* 2013) [185], or as a 'food' in Australia (Food Standards Code 1994) [196]. Other frameworks or policies provide international guidance on the manufacture, sale and production of kava for stakeholders to adhere to, such as the Pan-Pacific kava legislation (Kava Quality Standardization Code, 2011) [215].

Of the council, departmental and governmental literature describing kava, Australian organisations comprise bodies involved in agricultural research (Australian Centre for International Agricultural Research), distribution and trade (Consumer Affairs and Trading), licensing provisions (Northern Territory Licensing Commission) and the research and investigation of the individual, community and societal impacts of kava (National Health and Medical Research Council). Other international, US or EU-based organisations have the same roles and responsibilities, but for their respective jurisdictions.

Most health authorities and medical agencies or committees reporting on kava were from Europe. These UK, German and French papers largely discussed the actions taken by various health departments and agencies in their respective countries. Most of these organisations advocated for the kava ban in the early 2000s following reported cases of liver hepatotoxicity and even death associated with the overconsumption of kava. In addition, two German records examined the role of kava as an antidepressant to understand the extent to which physicians and doctors adhere to the recommended daily dose (RDD) when prescribing kava, whilst two German records looked at the measurements of kava obtained from validated international instruments (e.g., the Word Health Organization and Naranjo scales) and the dilution and yield rate of packaged patch tests sold in the European market.

3.7 | Risk of Bias

Of the 36 RCTs, the overall risk of bias was low in 26 records and high in the remaining 10. RCTs that were rated as high typically

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employed an inappropriate study design, did not account for deviations, and/or did not ensure participant or researcher blinding, or the baseline exchangeability between participants in the intervention and comparison groups (Appendix 4.1). Of the 13 quasi-experimental records, two were rated as low, but the remaining 11 were rated as high, largely due to the absence of control groups (Appendix 4.2). The one qualitative record had an overall low risk of bias; however, it received unclear ratings for 4 out of 10 domains—congruity between the philosophical perspective and methodology; congruity between methodology and the research objective; locating the researcher culturally or theoretically; and addressing the influence of the researcher on the research (Appendix 4.3). All but one of the 17 cross-sectional records were high in bias because of several reasons, but mainly due to the insufficient reporting of strategies used to control for confounding and the subsequent identification and reporting of these confounding factors (Appendix 4.5). All 18 case series records were rated as high, largely due to the lack of clarity regarding the reporting of presenting sites/clinics and demographic information, as well as outcomes and follow-up results of cases (Appendix 4.6). All 29 case report records were rated as high as most of them did not identify and describe adverse or unanticipated events (Appendix 4.7). Of the 30 records reporting on prevalence, the majority were rated as high, mainly because of issues relating to the recruitment of participants, or the insufficient reporting of participant and setting information (Appendix 4.4).

4 | Discussion

4.1 | Summary and Interpretation of Main Findings

This review consolidates what is known about kava in current literature, contributing to a greater understanding of the evidence base of kava. Although the literature suggests some potential harms associated with kava consumption, the extent to which these harms are directly attributable to kava use is unclear. Many harms reported in the extant literature relate to liver toxicity, which may reflect the anecdotal reports of liver toxicity that influenced the kava bans enacted in various EU countries in the early 2000s [15, 218]. A considerable body of research focusing on the benefits induced by kava has been published in the last decade, coinciding with the relaxation and repeal of legislation banning the use, sale, and distribution of kava in various countries.

Existing literature suggests that kava is not only an integral part of the social and cultural lives of Pacific Island peoples but also of their livelihoods and domestic economies more broadly. Although studies clearly articulated the importance of the kava trade to countries such as Fiji and Vanuatu [4, 219], for example, these data were not as explicitly reported in other Pacific Islander countries. While this may reflect the smaller economies of scale of other countries in this region, it may also indicate the long-term economic impacts associated with the importation policies and restrictions adopted by various Western, high-income countries. The Australian kava importation pilot, beginning in 2019, was partly enacted not only to strengthen bilateral trade between Australia and Pacific Islander countries but also to improve the economies of Pacific Islander countries [17, 220]. Thus, while the social and cultural impacts of kava are intertwined, the same can be said of the economic and policy impacts of kava: domestic and international policies dictate how, and to what extent, kava can be traded, distributed and consumed, the effects of which impact the importation and exportation capacities of kava-reliant countries.

The lack of quality evidence and insufficient reporting standards preventing a meta-analysis of study outcomes means it is difficult to gauge the prevalence of kava, as well as the extent to which it is harmful and beneficial to those who consume it. To effectively measure these domains, leveraging the use, regular distribution, and measurement of population-wide surveys would provide a more objective metric on which to measure rates of kava use nationwide. Furthermore, governments of countries that are involved in the importation and exportation of kava should invest additional resources and funding into the rigorous evaluation of programs that both quantitatively and qualitatively assess the impacts of kava use. These evaluations should be designed in such a way that they can causally estimate the effectiveness of programs aiming to examine the effects of kava in large, non-convenient study samples with high external validity. In addition, such evaluations should focus on long-term outcomes that both account for missing data and ensure participation attrition rates are minimised, so that policymakers can use the best available evidence of program effectiveness to inform their decision-making processes.

Although our results confirm that kava can reduce symptoms of anxiety disorders in the short term—a finding supported by previous systematic reviews and meta-analyses [221–223] – significant safety concerns necessitate caution for its long-term use. Notably, the risks of liver damage and cognitive impairments, as highlighted in studies that reported harms, underscore the need for prudent use of kava. These issues emphasise the critical need for further research to thoroughly understand both the mechanisms behind kava's effects and its safety profile. Future research should prioritise large-scale, long-term randomised controlled trials that assess kava's sustained efficacy and safety, with a particular focus on the dose–response relationship and potential long-term adverse effects. Additionally, exploring patient-specific factors that could predispose individuals to adverse outcomes when using kava is crucial for refining its therapeutic application and ensuring patient safety.

4.2 | Strengths and Limitations

Our review builds upon prior evidence that has examined kava's short-term anxiolytic effects [18, 19, 22], pharmacological mechanisms and interactions [21, 22], and cultural and social use in specific populations [24, 25, 27], including early clinical concerns [26]. More recent evidence included in our review highlights emerging patterns of context-specific harms–such as nutritional and metabolic issues among heavy users–as well as growing policy and trade considerations that were absent from earlier syntheses. While previous reviews focused on individual domains, our synthesis extends the evidence base by integrating health, social, economic, and policy dimensions–including grey literature and underrepresented regions–and identifies the need

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for governance models that balance cultural value with public health.

The systematic review rigorously adhered to the protocols underpinned by PRISMA [29] guidelines. While kava has existed for centuries in several Pacific Island communities, it has only been introduced to other Western contexts since the mid-twentieth century; for example, kava was first imported into Australia in the early 1980s. As such, considering the date filters applied to this search strategy, relevant papers that met the eligibility criteria of this review have been captured to the greatest extent possible. Furthermore, we examined the potential impacts of kava across a range of outcomes to synthesise a global, comprehensive perspective of kava that policymakers could use when making decisions about legal, economic or social reforms relating to kava, or to undertake further research in this context. Our inclusion of records containing both qualitative or quantitative data, together with the strong body of evidence obtained from populations frequently under-represented in the literature (e.g., First Nations and Pacific Islander peoples), further ensures that a diverse range of sources from relevant individuals and communities have been synthesised in this global review of kava.

Despite these strengths, the risk of bias evaluation undertaken in this review revealed limitations in the quality and methodological rigour of most included records, even though the search strategy captured a wide array of articles for each of our desired outcomes. For one, almost all non-RCT studies reported an overall high risk of bias score. This rating was largely due to the small, convenience samples employed by most studies for which a Risk of Bias could be completed; the lack of clearly defined methodology and reported findings; and the inability to estimate a main causal effect because of missing information and inadequate study design. The heterogeneity in both the study designs and outcomes of studies within and across outcomes also prevented a meta-analysis of outcomes from being conducted. Finally, the lack of follow-up data examining the potential impacts associated with long-term kava use has not been clearly documented in the extant literature. Thus, the effects of kava among those who extensively and regularly use kava over several months or years remain unclear.

4.3 | Conclusions

In conclusion, our comprehensive narrative review clarifies the landscape of kava's socio-cultural, economic, and health dimensions, highlighting both its embeddedness in Pacific Islander heritage and the debate surrounding its safety and utility. The evidence underscores the imperative for nuanced policy frameworks that respect indigenous practices while safeguarding public health. Given the methodological limitations and reporting biases of the identified literature, there is a pressing need for robust, mixed-methods research to ascertain kava's potential benefits and harms more definitively, particularly over a long-term period. Such research should aim to bridge these knowledge gaps, thereby informing context-sensitive legislation and commercialisation strategies. Our findings advocate for a balanced approach that includes traditional knowledge with empirical evidence, ensuring that policies are both culturally respectful and evidence based.

This review highlights multiple evidence gaps that merit further investigation. Future research should focus on understanding the mechanisms underlying kava's role in liver toxicity and anxiety reduction, and how these effects may vary by preparation, dose and user context. Additionally, the increasing and often unregulated social use of kava in both Pacific and non-Pacific settings presents an urgent need to explore culturally appropriate models for regulation. These areas should be prioritised to inform policy and promote safe, equitable access.

Author Contributions

G.E., T.S., W.A.-D., L.D. and M.F. conceived the scope of the study. G.E., M.L., S.T., W.A.-D., G.M., conducted data extraction and T.S. oversaw data collection; G.E. and T.S. conducted data synthesis and interpretation; T.S. and G.E. drafted the manuscript, and all authors (G.E., M.L., S.T., W.A.-D., G.M., L.D., M.F., T.S.) critically reviewed and revised it for intellectual content, met the International Committee of Medical Journal Editors (ICMJE) authorship criteria and approved the final version before submission.

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Conflicts of Interest

This project was funded by the Australian Government Department of Health and Aged Care. The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

1. Alcohol and Drug Foundation, "Kava," (2022), https://adf.org.au/drug-facts/kava/#:~:text=Kava%20is%20a%20depressant%20drug,kava%20(Piper%20methysticum)%20shrub.&text=Kava%20comes%20in%20different%20forms,brownish%2Dcoloured%20drink.

2. T. Bian, P. Corral, Y. Wang, et al., "Kava as a Clinical Nutrient: Promises and Challenges," *Nutrients* 12, no. 10 (2020): 3044.

3. J. Butt, "Review of Kava Use Among Aboriginal and Torres Strait Islander People," 19, no. 2 (2019).

4. M. Mohanty, "Fiji Kava: Production, Trade, Role and Challenges," *Journal of Pacific Studies* 37, no. 1 (2017): 5–30.

5. Vanuatu National Statistics Office, "Statistics Update: International Merchandise Trade Statistics," (2023), https://vnso.gov.vu/index.php/en/2-trade/127-current-trades-news.

6. Tonga Statistics Department, "Foreign Trade," https://tongastats.gov.to/statistics/economics/foreign-trade/#75-136-wpfd-2019.

14653362, 2025, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/dar.14080 by Edith Cowan University, Wiley Online Library on [25/09/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

7. R. B. Brauer, R. Pfab, K. Becker, H. Berger, and M. Stangl, "Fulminantes Leberversagen Nach Einnahme des Pflanzlichen Heilmittels Kava-Kava," *Zeitschrift für Gastroenterologie* 39, no. 491 (2001): 30.

8. S. Russmann, B. H. Lauterburg, and A. Helbling, "Kava Hepatotoxicity," *Annals of Internal Medicine* 135, no. 1 (2001): 68–69.

9. M. Schmidt, M. Morgan, K. Bone, and J. McMillan, "Kava: A Risk-Benefit Assessment," in *Essential Guide to Herbal Safety* (Elsevier Churchill Livingstone, 2005), 155–221.

10. W. N. Richardson and L. Henderson, "The Safety of Kava – A Regulatory Perspective," *British Journal of Clinical Pharmacology* 64, no. 4 (2007): 418–420.

11. M. Schmidt, "German Court Ruling Reverses Kava Ban; German Regulatory Authority Appeals Decision. Reprinted From the July 2014 Issue of HerbalEGram," *HerbalGram* 103 (2014): 38–43.

12. A. Clough, *Health Effects of Heavy Kava Use in Indigenous Australians* (Charles Darwin University, 2003).

13. A. R. Clough, C. B. Burns, and N. Mununggurr, *Kava in Arnhem Land: A Review of Consumption and Its Social Correlates* (IELAPA, 2020), 319–328.

14. Kava Australia, "The History of Kava in Australia," (2024), https://kavaaustralia.com.au/#:~:text=Therefore%2C%20the%20Australian%20Federal%20Government%20banned%20the%20importation,regulates%20Kava%2C%20recently%20changed%20the%20status%20of%20kava.

15. K. Kuchta, M. Schmidt, and A. Nahrstedt, "German Kava Ban Lifted by Court: The Alleged Hepatotoxicity of Kava (*Piper methysticum*) as a Case of Ill-Defined Herbal Drug Identity, Lacking Quality Control, and Misguided Regulatory Politics," *Planta Medica* 81, no. 18 (2015): 1647–1653.

16. Australian Government Department of Foreign Affairs and Trade, "Australia's Kava Pilot." (2023), https://www.dfat.gov.au/geo/pacific/economic-prosperity-in-the-pacific/australia-kava-pilot.

17. W. Asare-Doku, S. Settumba Stolk, A. Peacock, et al., *Monitoring and Evaluation of the Kava Pilot Program* (National Drug and Alcohol Research Centre, UNSW, 2023).

18. M. H. Pittler and E. Ernst, "Kava Extract for Treating Anxiety," *Cochrane Database of Systematic Reviews* 2003, no. 1 (2003): Cd003383.

19. M. H. Pittler and E. Edzard, "Kava Extract for Treating Anxiety," *Cochrane Database of Systematic Reviews* 4 (2001): Cd003383.

20. S. Suharno, R. H. Tanjung, S. Sufaati, and V. Agustini, "Wati (*Piper methysticum*) Medicinal Plant: The Ethnobiological and Ethnomedicinal Values of the Marind Tribe in Merauke, Papua, Indonesia," *Biodiversitas* 17, no. 2 (2016): 814–822.

21. J. Anke and I. Ramzan, "Pharmacokinetic and Pharmacodynamic Drug Interactions With Kava (*Piper methysticum* Forst. F.)," *Journal of Ethnopharmacology* 93, no. 2–3 (2004): 153–160.

22. J. Sarris, E. LaPorte, and I. Schweitzer, "Kava: A Comprehensive Review of Efficacy, Safety, and Psychopharmacology," *Australian and New Zealand Journal of Psychiatry* 45, no. 1 (2011): 27–35.

23. R. Teschke, A. Schwarzenboeck, and A. Akinci, "Kava Hepatotoxicity: A European View," *New Zealand Medical Journal* 121, no. 1283 (2008): 90–98.

24. R. Clough, C. B. Burns, and A. Ngarrawu Mununggurr, "Kava in Arnhem Land: A Review of Consumption and Its Social Correlates," *Drug and Alcohol Review* 19, no. 3 (2000): 319–328.

25. D. McDonald and A. Jowitt, "Kava in the Pacific Islands: A Contemporary Drug of Abuse?," *Drug and Alcohol Review* 19, no. 2 (2000): 217–227.

26. "Kava," *Lancet* 332, no. 8605 (1988): 258–259.

27. L. Rychetnik and C. M. Madronio, "The Health and Social Effects of Drinking Water-Based Infusions of Kava: A Review of the Evidence," *Drug and Alcohol Review* 30, no. 1 (2011): 74–83.

28. M. Schmidt, "Quality Criteria for Kava," *HerbalGram* 73 (2007): 44–49.

29. D. Moher, L. Shamseer, M. Clarke, et al., "Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 Statement," *Systematic Reviews* 4, no. 1 (2015): 2046–2053.

30. Z. Munn, S. Moola, K. Lisy, D. Riitano, and C. Tufanaru, "Chapter 5: Systematic Reviews of Prevalence and Incidence," in *Systematic Reviews of Prevalence and Incidence, in JBI Manual for Evidence Synthesis*, ed. M. Z. Aromataris (JBI, 2020).

31. T. H. Barker, J. C. Stone, K. Sears, et al., "The Revised JBI Critical Appraisal Tool for the Assessment of Risk of Bias for Randomized Controlled Trials," *JBI Evidence Synthesis* 21, no. 3 (2023): 494–506.

32. C. Tufanaru, Z. Munn, E. Aromataris, J. Campbell, and L. Hopp, "Systematic Reviews of Effectiveness," in *JBI Manual for Evidence Synthesis*, ed. M. Z. Aromataris (JBI, 2020).

33. S. Moola, Z. Munn, C. Tufanaru, et al., "Chapter 7: Systematic Reviews of Etiology and Risk," in *JBI Manual for Evidence Synthesis, Systematic Reviews of Etiology and Risk*, ed. E. Aromataris and Z. Munn (JBI, 2020).

34. C. Lockwood, Z. Munn, and K. Porritt, "Qualitative Research Synthesis: Methodological Guidance for Systematic Reviewers Utilizing Meta-Aggregation," *International Journal of Evidence-Based Healthcare* 13, no. 3 (2015): 179–187.

35. Z. Munn, T. H. Barker, S. Moola, et al., "Methodological Quality of Case Series Studies: An Introduction to the JBI Critical Appraisal Tool," *JBI Evidence Synthesis* 18, no. 10 (2020): 2127–2133.

36. J. Popay, "Guidance on the Conduct of Narrative Synthesis in Systematic Reviews: A Product From the ESRC Methods Programme," (2006).

37. C. B. Burns, P. D'Abbs, and B. J. Currie, "Patterns of Petrol Sniffing and Other Drug Use in Young Men From an Australian Aboriginal Community in Arnhem Land, Northern Territory," *Drug and Alcohol Review* 14, no. 2 (1995): 159–169.

38. A. R. Clough, R. Bailie, C. B. Burns, T. Guyula, R. Wunungmurra, and S. R. Wanybarrnga, "Validity and Utility of Community Health Workers' Estimation of Kava Use," *Australian and New Zealand Journal of Public Health* 26, no. 1 (2002): 52–57.

39. A. Clough, "Enough! or too much. What Is 'excessive' Kava Use in Arnhem Land?," *Drug and Alcohol Review* 22, no. 1 (2003): 43–51, https://doi.org/10.1080/0959523021000059820.

40. A. R. Clough, P. D'Abbs, S. Cairney, et al., "Emerging Patterns of Cannabis and Other Substance Use in Aboriginal Communities in Arnhem Land, Northern Territory: A Study of Two Communities," *Drug and Alcohol Review* 23, no. 4 (2004): 381–390.

41. J. Fleming, C. Watson, D. McDonald, and K. Alexander, "Drug Use Patterns in Northern Territory Aboriginal Communities 1986–1987," *Drug and Alcohol Review* 10, no. 4 (1991): 367–380.

42. H. Hughes, *Kava and After in the Nhulunbuy (Gulf of Carpenteria) Hinterland* (Centre for Independent Studies, 2007).

43. D. Maneze, A. Speizer, N. Dalton, and S. Dennis, "A Descriptive Study of Kava Use Among Tongan Men in Macarthur, Sydney South West," *Australian and New Zealand Journal of Public Health* 32, no. 4 (2008): 314–316.

44. J. D. Mathews, *Effects of the Heavy Usage of Kava on Physical Health: Summary of a Pilot Survey in an Aboriginal Community in Arnhem Land, Northern Territory* (IELAPA, 1988).

14653362, 2025, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/dar.14080 by Edith Cowan University, Wiley Online Library on [25/09/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

45. E. Nakaseko, N. Matsuda, and S. Kotera, "Factors Related to Smoking and Consumption of Alcohol and Kava in Children Attending the Upper Grades of Primary Schools in Vanuatu," *[Nihon Koshu Eisei Zasshi] Japanese Journal of Public Health* 61, no. 12 (2014): 718–731.

46. S. Aporosa and M. Tomlinson, "Kava Hangover and Gold-Standard Science," *Anthropologica* 56, no. 1 (2014): 163–175.

47. R. F. Grace, "Kava Drinking in Vanuatu – A Hospital Based Survey," *Pacific Health Dialog: A Publication of the Pacific Basin Officers Training Program and the Fiji School of Medicine* 10, no. 2 (2003): 41–44.

48. K. M. Olszowy, A. B. Roome, E. Standard, L. Tarivonda, G. Taleo, and K. N. Dancause, "Relationships of Tobacco Use and Kava Consumption to Sex-Associated Variation in Body Composition and Obesity Risk in Melanesian Adults From Vanuatu," *Asia-Pacific Journal of Public Health* 34, no. 6–7 (2022): 634–642.

49. R. Kava, "The Adverse Effects of Kava," *Pacific Health Dialog: A Publication of the Pacific Basin Officers Training Program and the Fiji School of Medicine* 8, no. 1 (2001): 115–118.

50. C. Macleod, C. Yalen, R. Butcher, et al., "Eyelash Epilation in the Absence of Trichiasis: Results of a Population-Based Prevalence Survey in the Western Division of Fiji," *PLoS Neglected Tropical Diseases* 11, no. 1 (2017): e0005277.

51. N. Vignier, F. Lert, C. Salomon, and C. Hamelin, "Kava Drinking Associated With Suicidal Behaviour Among Young Kanaks Using Kava in New Caledonia," *Australian and New Zealand Journal of Public Health* 35, no. 5 (2011): 427–433.

52. I. Wainiqolo, B. Kafoa, B. Kool, et al., "Driving Following Kava Use and Road Traffic Injuries: A Population-Based Case-Control Study in Fiji (TRIP 14)," *PLoS One* 11, no. 3 (2016): e0149719.

53. M. Sakai and M. Nakazawa, "The Current Use of Sakau (Kava) in Pohnpei Island, Federated States of Micronesia," *Hawai'i Journal of Health & Social Welfare* 81, no. 7 (2022): 179–184.

54. J. H. Shaver and R. Sosis, "How Does Male Ritual Behavior Vary Across the Lifespan? An Examination of Fijian Kava Ceremonies," *Human Nature (Hawthorne, N.Y.)* 25, no. 1 (2014): 136–160.

55. S. A. Finau, J. M. Stanhope, and I. A. M. Prior, "Kava, Alcohol and Tobacco Consumption Among Tongans With Urbanization," *Social Science & Medicine* 16, no. 1 (1982): 35–41.

56. B. J. Smith, P. Phongsavan, A. E. Bauman, D. Havea, and T. Chey, "Comparison of Tobacco, Alcohol and Illegal Drug Usage Among School Students in Three Pacific Island societies," *Drug and Alcohol Dependence* 88, no. 1 (2007): 9–18.

57. R. Taylor, "Fiji's Move into the 21st Century," in *Social Change and Psychosocial Adaptation in the Pacific Islands: Cultures in Transition* (Springer, 2005), 107–131.

58. U. Werneke, J. Earl, C. Seydel, O. Horn, P. Crichton, and D. Fannon, "Potential Health Risks of Complementary Alternative Medicines in Cancer Patients," *British Journal of Cancer* 90, no. 2 (2004): 408–413.

59. N. Malhotra, N. J. Starkey, and S. G. Charlton, "Driving Under the Influence of Drugs: Perceptions and Attitudes of New Zealand Drivers," *Accident; Analysis and Prevention* 106 (2017): 44–52.

60. B. Lohse, J. L. Stotts, and J. R. Priebe, "Survey of Herbal Use by Kansas and Wisconsin WIC Participants Reveals Moderate, Appropriate Use and Identifies Herbal Education Needs," *Journal of the American Dietetic Association* 106, no. 2 (2006): 227–237.

61. M. Birkett, "Use of Anxiolytic Natural Products by College Students," *Journal of Alternative and Complementary Medicine* 18, no. 6 (2012): 527–528.

62. IELAPA, *Strength and Survival – Aboriginal Substance Abuse* (IELAPA, 1988), 10–16.

63. Anonymous, "Is Kava Extract Effective in the Treatment of Anxiety Disturbances or Potential Addictive?," *Deutsche Apotheker-Zeitung* 133, no. 49 (1993): 41–42.

64. R. J. Boerner, "Kava Kava in the Treatment of Generalized Anxiety Disorder, Simple Phobia and Specific Social Phobia," *Phytotherapy Research* 15, no. 7 (2001): 646–647.

65. R. J. Boerner, H. Sommer, W. Berger, U. Kuhn, U. Schmidt, and M. Mannel, "Kava-Kava Extract LI 150 Is as Effective as Opipramol and Buspirone in Generalised Anxiety Disorder – An 8-Week Randomized, Double-Blind Multi-Centre Clinical Trial in 129 Out-Patients," *Phytomedicine* 10, no. Suppl 4 (2003): 38–49.

66. R. J. Boerner and S. Klement, "Attenuation of Neuroleptic-Induced Extrapyramidal Side Effects by Kava Special Extract WS 1490," *Wiener Medizinische Wochenschrift (1946)* 154, no. 21–22 (2004): 508–510.

67. A. Cagnacci, S. Arangino, A. Renzi, A. L. Zanni, S. Malmusi, and A. Volpe, "Kava-Kava Administration Reduces Anxiety in Perimenopausal Women," *Maturitas* 44, no. 2 (2003): 103–109.

68. K. M. Connor and J. R. Davidson, "A Placebo-Controlled Study of Kava Kava in Generalized Anxiety Disorder," *International Clinical Psychopharmacology* 17, no. 4 (2002): 185–188.

69. F. M. Dattilio, "The Use of Kava and Cognitive-Behavior Therapy in the Treatment of Panic Disorder," *Cognitive and Behavioral Practice* 9, no. 2 (2002): 83–88.

70. V. De Leo, A. La Marca, D. Lanzetta, et al., "Evaluation of the Association of Kava-Kava Extract and Hormone Replacement Therapy in the Treatment of Anxiety in the Postmenopause," *Minerva Ginecologica* 52, no. 6 (2000): 263–267.

71. M. Gastpar and H. D. Klimm, "Treatment of Anxiety, Tension and Restlessness States With Kava Special Extract WS 1490 in General Practice: A Randomized Placebo-Controlled Double-Blind Multicenter Trial," *Phytomedicine* 10, no. 8 (2003): 631–639.

72. F. P. Geier and T. Konstantinowicz, "Kava Treatment in Patients With Anxiety," *Phytotherapy Research* 18, no. 4 (2004): 297–300.

73. B. Gessner and P. Cnota, "Extract of the Kava-Kava Rhizome in Comparison With Diazepam and Placebo," *Zeitschrift fur Phytotherapie* 15, no. 1 (1994): 30–37.

74. K. W. Herberg, "The Influence of Kava-Specialextract WS 1490 on Safety-Relevant Performance Alone and in Combination With Ethylalcohol," *Blutalkohol* 30, no. 2 (1993): 96–105.

75. K. W. Herberg, "Driving Ability After the Intake of the Kava Extract WS 1490," *Zeitschrift für Allgemeinmedizin* 67, no. 13 (1991): 842–846.

76. D. Johnson, A. Frauendorf, K. Stecker, and U. Stein, "Neurophysiologic Efficacy and Tolerance of Kava Extract WS 1490," *TW Neurologie Psychiatrie* 5, no. 6 (1991): 349–354.

77. K. Kuchta, P. de Nicola, and M. Schmidt, "Randomized, Dose-Controlled Double-Blind Trial: Efficacy of an Ethanolic Kava (*Piper methysticum* Rhizome) Extract for the Treatment of Anxiety in Elderly Patients," *Traditional & Kampo Medicine* 5, no. 1 (2018): 3–10.

78. K. Kuchta, M. Hladikova, M. Thomsen, A. Nahrstedt, and M. Schmidt, "Kava (*Piper methysticum*) Extract for the Treatment of Nervous Anxiety, Tension and Restlessness," *Drug Research* 71, no. 2 (2021): 83–93, https://doi.org/10.1055/a-1268-7135.

79. E. Lehmann, E. Kinzler, and J. Friedemann, "Efficacy of a Special Kava Extract (*Piper methysticum*) in Patients With States of Anxiety, Tension and Excitedness of Non-Mental Origin – A Double-Blind Placebo-Controlled Study of Four Weeks Treatment," *Phytomedicine* 3, no. 2 (1996): 113–119.

80. S. Lehrl, "Clinical Efficacy of Kava Extract WS 1490 in Sleep Disturbances Associated With Anxiety Disorders: Results of a

14653362, 2025, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/dar.14080 by Edith Cowan University, Wiley Online Library on [25/09/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Multicenter, Randomized, Placebo-Controlled, Double-Blind Clinical Trial," *Journal of Affective Disorders* 78, no. 2 (2004): 101–110.

81. U. Malsch and M. Kieser, "Efficacy of Kava-Kava in the Treatment of Non-Psychotic Anxiety, Following Pretreatment With Benzodiazepines," *Psychopharmacology* 157, no. 3 (2001): 277–283.

82. J. T. Neto, "Tolerability of Kava-Kava Extract WS 1490 on Anxiety Disorders (Multicentric Brazilian Study)," *Revista Brasileira de Medicina* 56, no. 4 (1999): 280–284.

83. V. Nosa and M. Ofanoa, "The Social, Cultural and Medicinal Use of Kava for Twelve Tongan Born Men Living in Auckland, New Zealand," *Pacific Health Dialog* 15, no. 1 (2009): 96–102.

84. J. Sarris, D. J. Kavanagh, G. Byrne, K. M. Bone, J. Adams, and G. Deed, "The Kava Anxiety Depression Spectrum Study (KADSS): A Randomized, Placebo-Controlled Crossover Trial Using an Aqueous Extract of *Piper methysticum*," *Psychopharmacology* 205, no. 3 (2009): 399–407.

85. J. Sarris, J. Adams, and D. J. Kavanagh, "An Explorative Qualitative Analysis of Participants' Experience of Using Kava Versus Placebo in an RCT," *Australian Journal of Medical Herbalism* 22, no. 1 (2010): 12–16.

86. J. Sarris, C. Stough, C. A. Bousman, et al., "Kava in the Treatment of Generalized Anxiety Disorder: A Double-Blind, Randomized, Placebo-Controlled Study," *Journal of Clinical Psychopharmacology* 33, no. 5 (2013): 643–648.

87. J. Scherer, "Kava-Kava Extract in Anxiety Disorders: An Outpatient Observational Study," *Advances in Therapy* 15, no. 4 (1998): 261–269.

88. G. G. Steiner, "The Correlation Between Cancer Incidence and Kava Consumption," *Hawaii Medical Journal* 59, no. 11 (2000): 420–422.

89. G. G. Steiner, "Kava as an Anticraving Agent: Preliminary Data," *Pacific Health Dialog: A Publication of the Pacific Basin Officers Training Program and the Fiji School of Medicine* 8, no. 2 (2001): 335–339.

90. R. Thompson, W. Ruch, and R. U. Hasenohrl, "Enhanced Cognitive Performance and Cheerful Mood by Standardized Extracts of *Piper methysticum* (Kava-Kava)," *Human Psychopharmacology* 19, no. 4 (2004): 243–250.

91. H.-P. Volz and M. Kieser, "Kava-Kava Extract WS 1490 Versus Placebo in Anxiety Disorders: A Randomized Placebo-Controlled 25-Week Outpatient Trial," *Pharmacopsychiatry* 30, no. 1 (1997): 1–5.

92. Y. Wang, S. C. Narayanapillai, K. M. Tessier, et al., "The Impact of One-Week Dietary Supplementation With Kava on Biomarkers of Tobacco Use and Nitrosamine-Based Carcinogenesis Risk Among Active Smokers," *Cancer Prevention Research* 13, no. 5 (2020): 483–492.

93. G. Warnecke, "Neurovegetative Dystonia in the Female Climacteric. Studies on the Clinical Efficacy and Tolerance of Kava Extract WS 1490," *Fortschritte der Medizin* 109, no. 4 (1991): 65–71.

94. L. L. Watkins, K. M. Connor, and J. R. Davidson, "Effect of Kava Extract on Vagal Cardiac Control in Generalized Anxiety Disorder: Preliminary Findings," *Journal of Psychopharmacology* 15, no. 4 (2001): 283–286.

95. D. Wheatley, "Stress-Induced Insomnia Treated With Kava and Valerian: Singly and in Combination," *Human Psychopharmacology* 16, no. 4 (2001): 353–356.

96. D. Wheatley, "Kava-Kava (LI 150) in the Treatment of Generalized Anxiety Disorder," *Primary Care Psychiatry* 7, no. 3 (2001): 97–100.

97. H. Woelk, O. Kapoula, S. Lehrl, K. Schroter, and P. Weinholz, "Treatment of Anxiety Patients. Double-Blind Study: Kava Special Extract WS 1490 Versus Benzodiazepine," *Zeitschrift für Allgemeinmedizin* 69, no. 10 (1993): 271–277.

98. J. Sarris, G. J. Byrne, C. A. Bousman, et al., "Kava for Generalised Anxiety Disorder: A 16-Week Double-Blind, Randomised, Placebo-Controlled Study," *Australian and New Zealand Journal of Psychiatry* 54, no. 3 (2020): 288–297.

99. B. P. Jacobs, S. Bent, J. A. Tice, T. Blackwell, and S. R. Cummings, "An Internet-Based Randomized, Placebo-Controlled Trial of Kava and Valerian for Anxiety and Insomnia," *Medicine* 84, no. 4 (2005): 197–207.

100. K. M. Connor, V. Payne, and J. R. Davidson, "Kava in Generalized Anxiety Disorder: Three Placebo-Controlled Trials," *International Clinical Psychopharmacology* 21, no. 5 (2006): 249–253.

101. J. Sarris, A. Scholey, I. Schweitzer, et al., "The Acute Effects of Kava and Oxazepam on Anxiety, Mood, Neurocognition; and Genetic Correlates: A Randomized, Placebo-Controlled, Double-Blind Study," *Human Psychopharmacology* 27, no. 3 (2012): 262–269.

102. S. Aporosa, H. Ballard, R. Pandey, and M. J. McCarthy, "The Impact of Traditional Kava (*Piper methysticum*) Use on Cognition: Implications for Driver Fitness," *Journal of Ethnopharmacology* 291 (2022): 115080, https://doi.org/10.1016/j.jep.2022.115080.

103. C. Bartnik and R. Subramanian, "Kava Kava, Not for the Anxious: A Case of Fulminant Hepatic Failure After Kava Kava Supplementation," *American Journal of Gastroenterology* 112, no. Supplement 1 (2017): S1292.

104. M. W. Becker, E. M. S. Lourençone, A. F. de Mello, et al., "Liver Transplantation and the Use of KAVA: Case Report," *Phytomedicine* 56 (2019): 21–26.

105. J. Berry, A. Gilbert, and J. Grodnitzky, "Cases of Kava Impairment in Iowa Drivers," *Journal of Forensic Sciences* 64, no. 6 (2019): 1943–1949.

106. R. Bodkin, S. Schneider, D. Rekkerth, L. Spillane, and M. Kamali, "Rhabdomyolysis Associated With Kava Ingestion," *American Journal of Emergency Medicine* 30, no. 4 (2012): e1–e635.

107. R. B. Brauer, M. Stangl, J. R. Siewert, R. Pfab, and K. Becker, "Acute Liver Failure After Administration of the Hebal Tranquilizer Kava-Kava (*Piper methysticum*)," *Journal of Clinical Psychiatry* 64, no. 2 (2003): 216–218.

108. A. C. Brown, J. Onopa, P. Holck, et al., "Traditional Kava Beverage Consumption and Liver Function Tests in a Predominantly Tongan Population in Hawaii," *Clinical Toxicology* 45, no. 5 (2007): 549–556.

109. Z. O. Brown-Joel, E. S. Colleran, and M. S. Stone, "Inflammatory Sebotropic Reaction Associated With Kava Kava Ingestion," *JAAD Case Reports* 4, no. 5 (2018): 437–439.

110. L. Bujanda, A. Palacios, R. Silvarino, A. Sanchez, and C. Munoz, "Kava Induced Acute Icteric Hepatitis," *Gastroenterologia y Hepatologia* 25, no. 6 (2002): 434–435.

111. S. Cairney, A. R. Clough, P. Maruff, A. Collie, B. J. Currie, and J. Currie, "Saccade and Cognitive Function in Chronic Kava Users," *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology* 28, no. 2 (2003): 389–396.

112. S. Cairney, P. Maruff, A. R. Clough, A. Collie, J. Currie, and B. J. Currie, "Saccade and Cognitive Impairment Associated With Kava Intoxication," *Human Psychopharmacology* 18, no. 7 (2003): 525–533.

113. J. V. Campo, J. McNabb, J. M. Perel, G. V. Mazariegos, S. L. Hasegawa, and J. Reyes, "Kava-Induced Fulminant Hepatic Failure," *Journal of the American Academy of Child and Adolescent Psychiatry* 41, no. 6 (2002): 631–632, https://doi.org/10.1097/00004583-200206000-00001.

114. Centers for Disease Control and Prevention (CDC), "Hepatic Toxicity Possibly Associated With Kava-Containing Products – United States, Germany, and Switzerland, 1999–2002," *MMWR. Morbidity and Mortality Weekly Report* 289, no. 1 (2003): 36–37.

115. L. G. Chanwai, "Kava Toxicity," *Emergency Medicine* 12, no. 2 (2000): 142–145.

116. S. U. Christl, A. Seifert, and D. Seeler, "Toxic Hepatitis After Consumption of Traditional Kava Preparation," *Journal of Travel Medicine* 16, no. 1 (2009): 55–56.

14653362, 2025, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/dar.14080 by Edith Cowan University, Wiley Online Library on [25/09/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

117. A. Clough, S. Cairney, P. Maruff, C. Burns, and B. Currie, "Possible Toxicity and Withdrawal Seizures in Aboriginal Kava Drinkers in Arnhem Land (Australia)," *South Pacific Journal of Psychology* 13, no. 1 (2001): 26–34.

118. M. Escher, J. Desmeules, E. Giostra, and G. Mentha, "Hepatitis Associated With Kava, a Herbal Remedy for Anxiety," *BMJ [British Medical Journal]* 322, no. 7279 (2001): 139, https://doi.org/10.1136/bmj.322.7279.139.

119. L. F. Garner and J. D. Klinger, "Some Visual Effects Caused by the Beverage Kava," *Journal of Ethnopharmacology* 13, no. 3 (1985): 307–311.

120. R. Grace, "Kava-Induced Urticaria," *Journal of the American Academy of Dermatology* 53, no. 5 (2005): 906.

121. S. Guro-Razuman, P. Anand, Q. Hu, and R. Mir, "Dermatomyositis-Like Illness Following Kava-Kava Ingestion," *Journal of Clinical Rheumatology* 5, no. 6 (1999): 342–345.

122. S. Hannam, M. Murray, L. Romani, M. Tuicakau, and M. J Whitfeld, "Kava Dermopathy in Fiji: An Acquired Ichthyosis?," *International Journal of Dermatology* 53, no. 12 (2014): 1490–1494.

123. K. W. Herberg, "Safety-Related Performance After Intake of Kava-Extract, Bromazepam and Their Combination," *Zeitschrift für Allgemeinmedizin* 72, no. 16 (1996): 973–977.

124. C. L. Humberston, J. Akhtar, and E. P. Krenzelok, "Acute Hepatitis Induced by Kava Kava," *Journal of Toxicology – Clinical Toxicology* 41, no. 2 (2003): 109–113.

125. J. C. Huynh, M. M. Asgari, and M. M. Moore, "Sebotropic Eruption Associated With Use of Oral Kava Kava Supplement," *Clinical and Experimental Dermatology* 39, no. 7 (2014): 816–818.

126. U. Jappe, I. Franke, D. Reinhold, and H. P. M. Gollnick, "Sebotropic Drug Reaction Resulting From Kava-Kava Extract Therapy: A New Entity?," *Journal of the American Academy of Dermatology* 38, no. 1 (1998): 104–106.

127. R. A. Ketola, J. Viinamäki, I. Rasanen, A. Pelander, and S. Goebeler, "Fatal Kavalactone Intoxication by Suicidal Intravenous Injection," *Forensic Science International* 249 (2015): e7–e11.

128. M. Kraft, T. W. Spahn, and J. Menzel, "Fulminant Liver Failure After Administration of the Herbal Antidepessant Kava-Kava," *Deutsche Medizinische Wochenschrift* 126, no. 36 (2001): 970–972.

129. N. Leung, "Acute Urinary Retention Secondary to Kava Ingestion," *Emergency Medicine Australasia* 16, no. 1 (2004): 94.

130. D. Maya, Y. Schneider, and D. W. Wan, "Blame It on the Kava?," *American Journal of Gastroenterology* 110, no. Supplement 1 (2015): S364.

131. E. Meseguer, R. Taboada, V. Sánchez, M. A. Mena, V. Campos, and J. García de Yébenes, "Life-Threatening Parkinsonism Induced by Kava-Kava," *Movement Disorders* 17, no. 1 (2002): 195–196.

132. E. J. Nilles, A. Manaia, B. Ruaia, et al., "Re-Emergence of Thiamine Deficiency Disease in the Pacific Islands (2014-15): A Case-Control Study," *PLoS One* 13, no. 6 (2018): e0198590.

133. J. A. Parker, T. T. Kurien, and C. Huppatz, "Hepatitis A Outbreak Associated With Kava Drinking," *Communicable Diseases Intelligence Quarterly Report* 38, no. 1 (2014): E26–E28.

134. J. Perez and J. F. Holmes, "Altered Mental Status and Ataxia Secondary to Acute Kava Ingestion," *Journal of Emergency Medicine* 28, no. 1 (2005): 49–51.

135. K. Peterman and E. Reynolds, "Kava-Induced Ichthyosis," *Journal of the Dermatology Nurses' Association* 11, no. 6 (2019): 280–282.

136. F. I. Raziq, "Kava Kava Induced Acute Liver Failure," *American Journal of Therapeutics* 29, no. 4 (2022): E493–E494.

137. M. Riley, "Nutrient Status and Food Intake in a Kava Using Community," Annual Report: Menzies School of Health Research, (1987): 3.

138. S. Russmann, Y. Barguil, P. Cabalion, M. Kritsanida, D. Duhet, and B. H. Lauterburg, "Hepatic Injury due to Traditional Aqueous Extracts of Kava Root in New Caledonia," *European Journal of Gastroenterology and Hepatology* 15, no. 9 (2003): 1033–1036.

139. P. Ruze, "Kava-Induced Dermopathy: A Niacin Deficiency?," *Lancet* 335, no. 8703 (1990): 1442–1445.

140. P. Schmidt and W. H. Boehncke, "Delayed-Type Hypersensitivity Reaction to Kava-Kava Extract," *Contact Dermatitis* 42, no. 6 (2000): 363–364.

141. I. Sibon, E. Rosier, and J. M. Orgogozo, "Meningismus After Taking Kava-Kava," *Revue Neurologique* 158, no. 12 I (2002): 1205–1206.

142. A. Signorini, A. Lubrano, G. Manuele, et al., "Classical and New Proving Methodology: Provings of Plumbum Metallicum and *Piper methysticum* and Comparison With a Classical Proving of Plumbum Metallicum," *Homeopathy* 94, no. 3 (2005): 164–174.

143. P. K. Spillane, D. A. Fisher, and B. J. Currie, "Neurological Manifestations of Kava Intoxication," *Medical Journal of Australia* 167, no. 3 (1997): 172–173.

144. L. Steele, A. Cummin, and S. G. Keohane, "Acute Cutaneous Toxicity With Kava: An Inflammatory Sebotropic Reaction and Urticaria," *Clinical and Experimental Dermatology* 45, no. 4 (2020): 527–530.

145. F. Stickel, H. M. Baumüller, K. Seitz, et al., "Hepatitis Induced by Kava (*Piper methysticum* Rhizoma)," *Journal of Hepatology* 39, no. 1 (2003): 62–67.

146. S. Strahl, V. Ehret, H. H. Dahm, and K. P. Maier, "Necrotizing Hepatitis After Taking Herbal Remedies," *Deutsche Medizinische Wochenschrift* 123, no. 47 (1998): 1410–1414.

147. R. Suss and P. Lehmann, "Hematogenous Allergic Contact Dermatitis From Kava, a Herbal Product," *Hautarzt* 47, no. 6 (1996): 459–461.

148. R. Teschke, A. Genthner, and A. Wolff, "Kava Hepatotoxicity: Comparison of Aqueous, Ethanolic, Acetonic Kava Extracts and Kava-Herbs Mixtures," *Journal of Ethnopharmacology* 123, no. 3 (2009): 378–384.

149. R. Teschke, A. Schwarzenboeck, and K. H. Hennermann, "Kava Hepatotoxicity: A Clinical Survey and Critical Analysis of 26 Suspected Cases," *European Journal of Gastroenterology & Hepatology* 20, no. 12 (2008): 1182–1193.

150. R. Teschke and A. Wolff, "Kava Hepatotoxicity: Regulatory Data Selection and Causality Assessment," *Digestive and Liver Disease* 41, no. 12 (2009): 891–901.

151. R. Teschke, J. Fuchs, R. Bahre, A. Genthner, and A. Wolff, "Kava Hepatotoxicity: Comparative Study of Two Structured Quantitative Methods for Causality Assessment," *Journal of Clinical Pharmacy and Therapeutics* 35, no. 5 (2010): 545–563.

152. T. P. Toohey, B. Y. Lu, and C. Wada, "Toxic Effects of Psychotropics Related to Possible p450 Enzyme Inhibition by Kava: Report of 2 Cases," *Primary Care Companion to the Journal of Clinical Psychiatry* 15, no. 5 (2013): PCC.13br0153.

153. E. Vakamacawai, E. McCaig, I. Waqainabete, and M. R. Cox, "Amoebic Liver Abscesses in Fiji: Epidemiology, Clinical Presentation and Comparison of Percutaneous Aspiration and Percutaneous Catheter Drainage," *World Journal of Surgery* 44, no. 3 (2020): 665–672.

154. B. Weise, M. Wiese, A. Plotner, and B. R. Ruf, "Toxic Hepatitis After Intake of Kava-Kava," *Verdauungskrankheiten* 20, no. 4 (2002): 166–169.

155. World Health Organisation, "Kava Extract Linked to Hepatitis," *WHO Drug Information* 14, no. 2 (2000): 98.

14653362, 2025, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/dar.14080 by Edith Cowan University, Wiley Online Library on [25/09/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

156. H. Foo and J. Lemon, "Acute Effects of Kava, Alone or in Combination With Alcohol, on Subjective Measures of Impairment and Intoxication and on Cognitive Performance," *Drug and Alcohol Review* 16, no. 2 (1997): 147–155.

157. J. Sarris, C. Stough, R. Teschke, et al., "Kava for the Treatment of Generalized Anxiety Disorder RCT: Analysis of Adverse Reactions, Liver Function, Addiction, and Sexual Effects," *Phytotherapy Research* 27, no. 11 (2013): 1723–1728.

158. A. S. Aporosa, M. Atkins, and R. Brunton, "Kava Drinking in Traditional Settings: Towards Understanding Effects on Cognitive Function," *Human Psychopharmacology* 35, no. 2 (2020): e2725.

159. T. P. Brown, "Kava in Samoa and Vanuatu," *Aboriginal and Islander Health Worker Journal* 8, no. 2 (1984): 11–15.

160. J. Cawte, "Parameters of Kava Used as a Challenge to Alcohol," *Australian and New Zealand Journal of Psychiatry* 20, no. 1 (1986): 70–76.

161. E. Fehoko, "Social Space and Cultural Identity: The Faikava as a Supplementary Site for Maintaining Tongan Identity in New Zealand," *New Zealand Sociology* 30, no. 1 (2015): 131–139.

162. S. A. Aporosa, "Is Kava Alcohol?: The Myths and the Facts," *Pacific Health Dialog* 17, no. 1 (2011): 157–164.

163. A. Jowitt and J. Binihi, "The Commercialisation of Kava in Vanuatu," *Pacific Health Dialog: A Publication of the Pacific Basin Officers Training Program and the Fiji School of Medicine* 8, no. 1 (2001): 29–37.

164. R. Gregory, "The Mental Side of Kava," *Aboriginal Health Worker* 12, no. 3 (1988): 13–17.

165. R. E. Smith, "Declarations of 'Self-Reliance': Alternative Visions of Dependency, Citizenship and Development in Vanuatu," *Oceania* 91, no. 2 (2021): 236–256.

166. M. J. Balick and R. Lee, "Traditional Use of Sakau (Kava) in Pohnpei: Lessons for Integrative Medicine," *Alternative Therapies in Health and Medicine* 8, no. 4 (2002): 96–98.

167. A. Aporosa, "Yaqona (Kava) and the School Campus: Regulation Versus Facilitation," *Australian Journal of Indigenous Education* 51, no. 1 (2022): 1–20.

168. A. Abramson, "Drinking to Mana and Ethnicity: Trajectories of Yaqona Practice and Symbolism in Eastern Fiji," *Oceania* 75, no. 4 (2005): 325–341.

169. K. J. Brison, "Constructing Identity Through Ceremonial Language in Rural Fiji," *Ethnology* 40, no. 4 (2001): 309–327.

170. C. Toren, *The Drinker as Chief or Rebel: Kava and Alcohol in Fiji* (Routledge, 2020), 153–173.

171. M. Tomlinson, "Everything and Its Opposite: Kava Drinking in Fiji," *Anthropological Quarterly* 80, no. 4 (2007): 1065–1081.

172. J. H. Shaver, "The Evolution of Stratification in Fijian Ritual Participation," *Religion, Brain & Behavior* 5, no. 2 (2015): 101–117.

173. J. D. Baker, "Pills, Potions, Products: Kava's Transformations in New and Nontraditional Contexts," *Contemporary Pacific* 24, no. 2 (2012): 233–265.

174. I. C. Webb, J. E. Chatterton, and B. L. Beyerstein, "An Investigation of Pharmacists' and Health Food Store Employees' Knowledge About and Attitudes Toward Kava," *Scientific Review of Alternative Medicine* 8, no. 2 (2005): 11–19.

175. E. B. Spillius, "Psychoanalysis and Ceremony," in *Melanie Klein Today: Developments in Theory and Practice, 2: Mainly Practice* (Routledge, 1988), 259–283.

176. D. H. A. Tecun and S. A. Siu'ulua, "Mormon Masculinity, Family, and Kava in the Pacific," (2020): 449–463.

177. J. W. Turner, "Rituals, Habitus, and Hierarchy in Fiji," *Ethnology* 31, no. 4 (1992): 291.

178. P. Jones, "Principles and Approaches to Facilitate Community Engagement: A Case Study. [This Paper Was Presented at the Australasian Drug Strategy Conference (3rd: 2004: Alice Springs, NT)]," *Public Administration Today* 4 (2005): 9–14.

179. J. Hengen, O. el-Atma, and D. W. Lachenmeier, "Kava From the Internet Trade – Food, Supplement, Medicine or Cancer Risk?," *Journal fur Verbraucherschutz Und Lebensmittelsicherheit* 9, no. 1 (2014): 3–11.

180. R. Markham, *Promoting Kava Exports, Ignoring Sustainability* (Newstex, 2022).

181. C. Kilham, "The Rising and Falling Fortunes of Vanuatu Kava," *HerbalGram* 128 (2020): 64–73.

182. E. Mills, R. Singh, C. Ross, E. Ernst, and J. G. Ray, "Sale of Kava Extract in Some Health Food Stores," *CMAJ: Canadian Medical Association Journal* 169, no. 11 (2003): 1158–1159.

183. S. M. K. Rates and L. Santos, "*Piper methysticum* Forst: A New Antianxiety Agents," *Revista Brasileira de Farmácia* 78, no. 2 (1997): 44–48.

184. C. A. Morris and J. Avorn, "Internet Marketing of Herbal Products," *JAMA* 290, no. 11 (2003): 1505–1509.

185. M. Rychert and C. Wilkins, "What Products Are Considered Psychoactive Under New Zealand's Legal Market for New Psychoactive Substances (NPS, 'legal Highs')? Implications for Law Enforcement and Penalties," *Drug Testing and Analysis* 8, no. 8 (2016): 768–778.

186. L. Lindstrom, "Kava Pirates in Vanuatu?," *International Journal of Cultural Property* 16, no. 3 (2009): 291–308.

187. H. M. O'Sullivan and K. Lum, "The Poisoning of 'awa: The Non-Traditional Use of an Ancient Remedy," *Pacific Health Dialog: A Publication of the Pacific Basin Officers Training Program and the Fiji School of Medicine* 11, no. 2 (2004): 211–215.

188. Commonwealth of Australia, *Kava and Information Paper* (Commonwealth of Australia, 1995).

189. H. M. O'Sullivan and K. Lum, "Herbal Medicine on the Rise: The Case of 'awa," *Pacific Health Dialog* 8, no. 2 (2001): 380–387.

190. I. McKay, "Kava: An Information Paper." (No Title), (1995).

191. S. Y. Mills and B. Steinhoff, "Kava-Kava: A Lesson for the Phytomedicine Community," *Phytomedicine: International Journal of Phytotherapy and Phytopharmacology* 10, no. 2–3 (2003): 261–262.

192. Australian Government Department of Health: Office of Drug Control, *Pilot Program to Ease Restrictions on the Importation of Kava for Personal Use: Consultation Paper* (Australian Government Department of Health: Office of Drug Control, 2019).

193. Northern Territory Government of Australia, *Kava Management Regulations* (Northern Territory Government of Australia, 2015).

194. B. Urquhart and N. Thomson, *Review of the Misuse of Kava Among Indigenous Australians* (Australian Indigenous HealthInfoNet, 2009).

195. A. Loughnan, "Kin Kava [Implications of the Northern Territory. Kava Management Act 1998, for Indigenous Communities in the Northern Territory]," *Indigenous Law Bulletin* 4, no. 22 (1999): 7–9.

196. P. d'Abbs, "The Power of Kava or the Power of Ideas?: Kava Use and Kava Policy in the Northern Territory," *Canberra Anthropology* 18, no. 1–2 (1995): 166–182.

197. P. d'Abbs, *A Review of Kava Control Measures in the Northern Territory* (Menzies School of Health Research, 1993).

198. M. Flynn, "Supply of Kava: Is It Another Aboriginal Offence?," *Aboriginal Law Bulletin* 2, no. 53 (1991): 10–11.

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199. P. d'Abbs, "Kava Use in Arnhem Land: The Challenge for Policy," *International Journal of Drug Policy* 2, no. 4 (1991): 17–21.

200. R. J. Gregory, J. E. Gregory, and J. G. Peck, "Kava and Prohibition in Tanna, Vanuatu," *British Journal of Addiction* 76, no. 3 (1981): 299–313.

201. J. D. Baker, "Kava Tradition and Toxicity: Local and Global Discourses About the Use and Safety of *Piper methysticum* G. Forst. (Piperaceae), an Indigenous Botanical Undergoing Pharmaceuticalization," *Dissertation Abstracts International Section A: Humanities and Social Sciences* 70, no. 3-A (2009): 923.

202. J. D. Baker, "Tradition and Toxicity: Evidential Cultures in the Kava Safety Debate," *Social Studies of Science* 41, no. 3 (2011): 361–384.

203. M. Brown, "Aina Under the Influence: The Criminalization of Alcohol in 19th-Century Hawai'i," *Theoretical Criminology* 7, no. 1 (2003): 89–110.

204. B. Strater, "Kava-Kava Revival: On the Revision of a Risk Decision," *Pharmazeutische Industrie* 77, no. 3 (2015): 294–295.

205. R. Teschke and A. Wolff, "Regulatory Causality Evaluation Methods Applied in Kava Hepatotoxicity: Are They Appropriate?," *Regulatory Toxicology and Pharmacology* 59, no. 1 (2011): 1–7.

206. M. Blumenthal, "Research & World News. *German Government Reconsiders Kava*," *HerbalGram* 67 (2005): 21–22.

207. G. Dietlein and D. Schroder-Bernhardi, "Doctors' Prescription Behaviour Regarding Dosage Recommendations for Preparations of Kava Extracts," *Pharmacoepidemiology and Drug Safety* 12, no. 5 (2003): 417–421.

208. D. Schroder-Bernhardi and G. Dietlein, "Compliance With Prescription Recommendations by Physicians in Practices," *International Journal of Clinical Pharmacology and Therapeutics* 39, no. 11 (2001): 477–479.

209. C. Cavaliere and M. Blumenthal, "Legal & Regulatory. UK Expert Committee Upholds Kava Ban," *HerbalGram* 72 (2006): 59.

210. H. Adcock, "NEWS FEATURE-Medicines Control Agency Proposes Ban for Kava-Containing Products," *Pharmaceutical Journal* 269, no. 7208 (2002): 128.

211. Unknown, "Kava: First Suspended, Now Prohibited," *Prescrire International* 12, no. 66 (2003): 142.

212. K. Mattsson and I. Nilsson, "Herbal Preparations Have Both Effects and Side Effects. Widespread Usage Dictates Knowledge Among Physicians," *Läkartidningen* 99, no. 50 (2002): 5095–5097.

213. J. Gruenwald and J. Skrabal, "Kava Ban Highly Questionable: A Brief Summary of the Main Scientific Findings Presented in the 'in Depth Investigation on EU Member States Market Restrictions on Kava Products'," *Seminars in Integrative Medicine* 1, no. 4 (2003): 199–210.

214. D. Robinson, M. Raven, E. Makin, D. Kalfatak, F. Hickey, and T. Tari, "Legal Geographies of Kava, Kastom and Indigenous Knowledge: Next Steps Under the Nagoya Protocol," *Geoforum* 118 (2021): 169–179.

215. R. Teschke and V. Lebot, "Proposal for a Kava Quality Standardization Code," *Food and Chemical Toxicology* 49, no. 10 (2011): 2503–2516.

216. T. Finney-Brown, "Need for Kava Standardisation," *Australian Journal of Medical Herbalism* 23, no. 1 (2011): 41–42.

217. Anonymous, "Medicines Control Agency Proposes Ban for Kava-Containing Products," *Pharmaceutical Journal* 269, no. 7208 (2002): 128.

218. E. Ernst, "A Re-Evaluation of Kava (*Piper methysticum*)," *British Journal of Clinical Pharmacology* 64, no. 4 (2007): 415–417.

219. N. J. Pollock, "Sustainability of the Kava Trade," *Contemporary Pacific* 21, no. 2 (2009): 265–297.

220. Australian Government Department of Health, "Pilot Program to Allow the Commercial Importation of Kava, in Regulation Impact Statement," Office of Drug Control, Editor (2021).

221. M. H. Pittler and E. Ernst, "Efficacy of Kava Extract for Treating Anxiety: Systematic Review and Meta-Analysis," *Journal of Clinical Psychopharmacology* 20, no. 1 (2000): 84–89.

222. K. Smith and C. Leiras, "The Effectiveness and Safety of Kava Kava for Treating Anxiety Symptoms: A Systematic Review and Analysis of Randomized Clinical Trials," *Complementary Therapies in Clinical Practice* 33 (2018): 107–117.

223. W. Zhang, Y. Yan, Y. Wu, et al., "Medicinal Herbs for the Treatment of Anxiety: A Systematic Review and Network Meta-Analysis," *Pharmacological Research* 179 (2022): 106204.

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