

# The Current Use of *Sakau* (Kava) in Pohnpei Island, Federated States of Micronesia

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## Abstract

In Pohnpei Island, *sakau* (kava) is a symbol of the traditional culture. Although the use of *sakau* was once limited to people of high rank and used only during ceremonial occasions, it is now consumed in bars and sold in bottles around the island. Recently, negative medical and environmental effects correlated with the increase sale of *sakau* have attracted scholarly attention. However, the current use of *sakau* is not fully understood. This study aims to describe the current use of *sakau* and consider by whom, on what occasions, and for what purpose *sakau* is consumed, and whether it continues to play a traditional role. Fieldwork was conducted from July to September 2019 in Kolonia (where people of Pohnpeian ethnicity live) and Mand (where non-Pohnpeians live). The latter was included to investigate whether *sakau* was consumed by people of ethnic groups that have never used it traditionally. Data were collected via interviews using a questionnaire, direct observation, and casual conversations. A total of 89 people (41 in Kolonia; 48 in Mand) participated in the study. Most (71% of those in Kolonia and 58% of those in Mand) reported they drank *sakau* at some point in their lives. Although the frequency of *sakau* consumption was significantly lower in Mand ( $P=.027$ ), it was consumed regardless of their original culture. Commonly reported reasons for drinking *sakau* included treating anxiety and socializing. The use of *sakau* in Pohnpeian society continues in traditional contexts, such as feasts, marriage proposals, and forgiveness. Additionally, increased consumption has been profitable for people engaged in businesses related to *sakau*.

## Keywords

*Piper methysticum*, kava, *sakau*, Pohnpei Island, Micronesia

## Introduction

*Piper methysticum* is a robust, succulent, well-branching, erect, perennial shrub belonging to the *Piperaceae* family. The succulent thrives at altitudes between 150 m and 300 m above sea level and grows well in upland forests when cultivated and in the wild.<sup>1-4</sup> In the Pacific Islands, the root of the plant is used to make a beverage called kava, *kavakava*, or *kawa*. Kava does not contain alcohol but has an intoxicating, calming effect, and promotes a sense of sociability.<sup>1,2,5,6</sup> Historically, preparing and distributing kava were highly ritualized. Drinking kava was permitted only among royalty and priests during social, ceremonial, and religious occasions, and drinking was unacceptable for women. In addition, kava was used for connecting to gods and for medicinal purposes.<sup>1-3,5,7</sup>

However, the pattern of kava use has markedly changed over several decades, and its consumption is no longer restricted. Today, people drink in kava bars, where it is served in individual cups. Moreover, people can buy fresh, dried, or powdered kava

especially in urban areas.<sup>6,8-10</sup> In Vanuatu, the sale of kava became a big business in the mid-1980s, after this South Pacific Island nation's independence from France. Consequently, kava use has become ubiquitous in Vanuatu. This increased use was partly a response to increased beer and wine prices, but also held political meaning, in that kava was one of the main ways to express regional identity in independent Vanuatu.<sup>11</sup> In Fiji, kava (*yagona*) is typically consumed in the privacy of homes, while it is still used in festive ceremonial events.<sup>12</sup>

With its increased availability, the harmful effects of kava have gained scholarly attention. Dermopathy, a skin condition characterized by drying and scaling, is commonly observed among heavy drinkers.<sup>2,9,13,14</sup> Kava causes liver damage and elevated  $\gamma$ -GTP liver enzyme levels.<sup>13,15-18</sup> Drinking kava is associated with other unhealthy lifestyle behaviors, such as smoking, alcohol consumption, and unhealthy food consumption, which are risk factors for non-communicable diseases.<sup>18,19</sup> Previous studies reported the negative effect of kava on employment due to decreased motivation resulting from kava use, and that time and money spent on drinking kava led to conflict among family members and/or the community.<sup>9,19,20</sup>

In Pohnpei Island, which is one of the islands in Pohnpei State of the Federated States of Micronesia (Figure 1), kava is called *sakau*; in this study, the authors refer to *sakau* in the context of kava in Pohnpei. James F. O'Connell, the first westerner to stay in Pohnpei, reported that *sakau* was consumed in the island during the 1830s.<sup>21</sup> *Sakau* is a symbol of the traditional culture of the island. According to Pohnpeian folklore, *sakau* was a gift from the gods. The coconut shell in which *sakau* is consumed is on the state flag and on the official seal of the governor of Pohnpei.<sup>22</sup> *Sakau* is made by pounding the root on a special stone, mixing it with water, and squeezing sap from the hibiscus plant. *Sakau* is distinguished from kava consumed in other islands by the thick, slimy consistency provided by the hibiscus sap.<sup>4</sup> Similar to other Pacific Islands, the consumption of *sakau* was limited to people of high rank and men, and was not for personal enjoyment. During feasts, *sakau* was distributed from high-ranking to lower-ranking individual using coconut shell cups. The act played a significant role in positioning social hierarchy and confirming social structure in communities. *Sakau* was also used for soliciting forgiveness from another family or when asking a father for his daughter's hand in marriage. Owning pigs, yams, and *sakau* was considered a special symbol of wealth, different from having large amounts of money.<sup>4,7,23-28</sup>

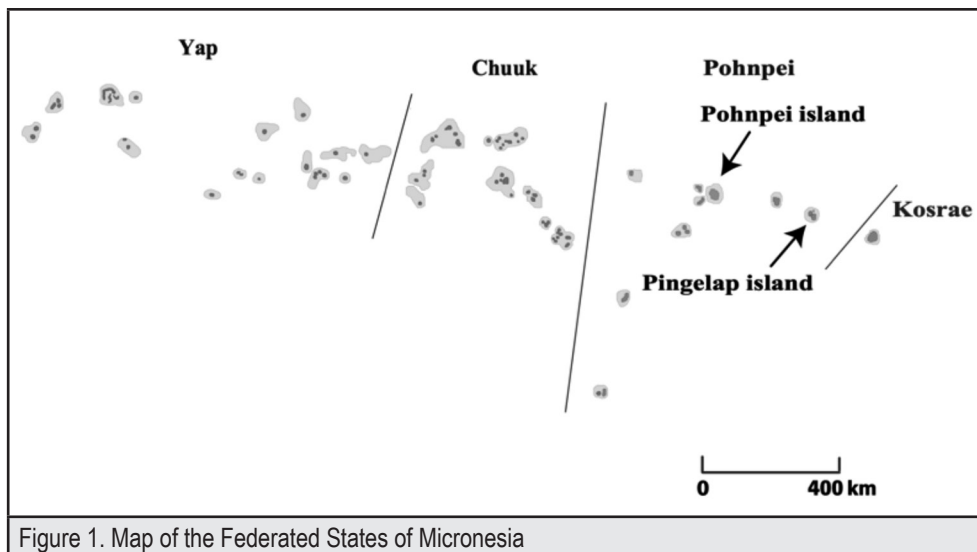


Figure 1. Map of the Federated States of Micronesia

Between 1960 and 1990, Pohnpei shifted into a new cash-based economy due to the dramatically increased subsidies from the US following the signing of the Compact of Free Association. The employment policy expanded the number of salaried employees. The people left behind by this employment began to run businesses related to *sakau* to earn money. The first *sakau* bar was opened in the early 1970s and since then, the number of *sakau* bars and retail stores significantly increased through the 20th century. During this period, the number of people engaged in businesses related to *sakau* increased to approximately 15% of the population. *Sakau* began to be prepared in bins or plastic bottles called “market *sakau*” and sold in plastic coolers along roadsides and parking lots.<sup>4,22,23,29–31</sup> This increase in *sakau* production damaged the environment. More than 70% of previously intact native forests have been degraded from increased cultivation of *sakau* since 1975.<sup>23</sup> Problems related to health and social relationships have also emerged from increased *sakau* use.<sup>4,25</sup>

Thus, the use of *sakau* has become complicated.<sup>4,23,25</sup> Few studies have reported the current use of *sakau* in Pohnpei. It is unclear who uses *sakau*, on what occasions, and for what purposes. It is unclear whether it continues to play its traditional roles. This study aims to describe the current use of *sakau* from these perspectives.

## Methods

### Study Site

Pohnpei Island consists of 6 municipalities (Figure 2). One study site was Kolonia, the state capital of Pohnpei, where the majority of commercial and public facilities are located. The second site was Mand, a small community in the Madolenihmw municipality. Drinking *sakau* is not part of the traditional

culture in Mand because its people originated from Pingelap Island (Figure 1). Pingelap Island maintains its own language and culture, and does not have a culture of using *sakau* due to its environment (atoll), which is unable to grow *sakau*.<sup>5</sup> This Pingelapese population was included to investigate whether *sakau* is now consumed by people who never used it traditionally. According to the latest census,<sup>32</sup> the populations of Kolonia and Mand are 6074 and 459, respectively.

### Data Collection

Fieldwork was conducted from July to September 2019 by one of the authors and research assistants who were fluent in English and local languages. Different sampling methods were applied

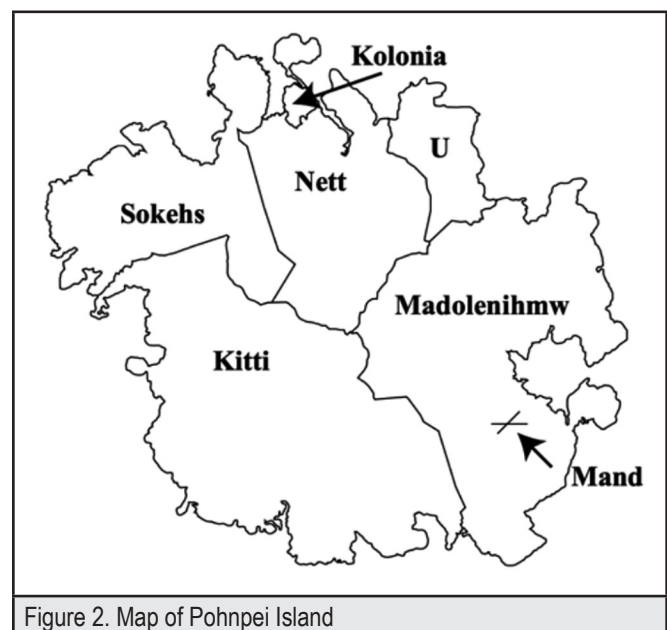


Figure 2. Map of Pohnpei Island

in the 2 regions because independent sampling for an ongoing survey in Kolonia was not allowed. In Kolonia, the Department of Public Health in Pohnpei State recruited participants by simple random sampling for the survey, and 50 individuals were selected for this study. In Mand, 50 households were randomly selected from lists of residents drawn up by a research assistant. Then one person from each household was selected via the Kish method.<sup>33</sup> Because only Pohnpeians and Pingelapese were included in this study, the numbers of the participants were 41 and 48 from Kolonia and Mand, respectively. Data were collected through face-to-face interviews using a questionnaire which included demographic information and items on the current use of *sakau*. The author also collected information related to *sakau* through casual conversations with residents and recorded field notes. Direct observation was conducted in places where *sakau* was consumed not only in Kolonia and Mand but throughout Pohnpei Island (eg, *sakau* bars, feasts, roadsides).

### Statistical Analysis

All statistical analyses were performed using R software version 4.0.2 (R Foundation for Statistical Computing, Vienna, Austria).<sup>34</sup> The gender and regional differences were assessed using t-tests (continuous variables) or Fisher's exact test (categorical variables). The statistical significance was set at *P* value < .05.

### Ethical Approval

This study was approved by the ethical committee of the Graduate School of International Cooperation Studies in Kobe University and the Department of Health and Social Affairs in Pohnpei State. Written informed consent was obtained from all participants.

## Results

Table 1 summarizes the demographic information of the participants. A total of 89 people (36% men) participated in this study. The means and standard deviations of the ages of the participants were 38.8±14.4 and 39.1±15.3 in Kolonia and Mand, respectively. Table 2 summarizes the current use of *sakau*. There were no significant differences in gender nor region of residence in the percentage of the participants who had consumed *sakau* at some point in their life. Significantly more participants in Kolonia (76%) drank *sakau* more than once a week than those in Mand (50%; *P*=.027).

Of those who had consumed *sakau* (hereafter referred to as *sakau* drinkers), 76% in Kolonia and 89% in Mand responded with “after dinner” or “before going to bed” for the occasions to drink. In Kolonia, 28% and 7% in Mand drank *sakau* on special occasions, such as feasts, funerals, and wedding ceremonies.

Field notes revealed further observations of *sakau* use in both traditional and non-traditional contexts. In one instance, the author observed *sakau* use for obtaining a woman's parents' permission to marry in a Pohnpeian household in Kitti municipality (see Figure 2). *Sakau* was prepared by men in the groom's family by the traditional pounding method and served in a coconut shell cup by a member of the groom's family to the woman's father. The father drank from the cup, indicating agreement with the marriage. The use of *sakau* in feasts was also observed in U municipality (see Figure 2), which was also prepared in the traditional way and distributed by high-ranking people. During a casual conversation, a Kolonia woman in her 60s related a story of using *sakau* as a means

| Table 1. Participant Demographics      |                  |       |               |       |          |
|--|------------------|-------|---------------|-------|----------|
|  | Kolonia (N = 41) |       | Mand (N = 48) |       | P-value* |
|  | N                | (%)   | N             | (%)   |          |
| <b>Gender</b>                          |                  |       |               |       |          |
| Men                                    | 13               | (32)  | 19            | (40)  | .50      |
| Women                                  | 28               | (68)  | 29            | (60)  |          |
| <b>Age (years)</b>                     |                  |       |               |       |          |
| Mean ± SD                              | 38.8 ± 14.0      |       | 39.1 ± 15.3   |       | .92      |
| <b>Ethnicity</b>                       |                  |       |               |       |          |
| Pohnpeian                              | 41               | (100) | 0             | (0)   | -        |
| Pingelapese                            | 0                | (0)   | 48            | (100) |          |
| <b>Employment Status</b>               |                  |       |               |       |          |
| Unemployed                             | 19               | (46)  | 18            | (38)  | .52      |
| Employed                               | 22               | (54)  | 30            | (63)  |          |
| <b>Personal Income (US \$/2 Weeks)</b> |                  |       |               |       |          |
| Less than \$100                        | 22               | (54)  | 35            | (73)  | .045     |
| More than \$100                        | 19               | (46)  | 12            | (25)  |          |
| do not know                            | 0                | (0)   | 1             | (2)   |          |

\* difference between Kolonia and Mand using t-tests and Fisher's Exact test

| Table 2. Survey Result on Current Use of <i>Sakau</i> in Kolonia and Mand |                  |      |               |       |          |
|---|------------------|------|---------------|-------|----------|
|   | Kolonia (N = 41) |      | Mand (N = 48) |       | P-value* |
|   | N                | (%)  | N             | (%)   |          |
| <b>Experience with Drinking <i>Sakau</i></b>                              |                  |      |               |       |          |
| Yes   | 29               | (71) | 28            | (58)  | .27      |
| No  | 12               | (29) | 20            | (42)  |          |
| <b>Frequency of Drinking <i>Sakau</i></b>                                 |                  |      |               |       |          |
| Everyday  | 2                | (7)  | 0             | (0)   | .017     |
| > once a week   | 20               | (69) | 14            | (50)  |          |
| > once a month  | 4                | (14) | 13            | (46)  |          |
| < once a month  | 3                | (10) | 1             | (4)   |          |
| <b>Occasions for Drinking <i>Sakau</i> (Multiple)</b>                     |                  |      |               |       |          |
| During meal time  | 0                | (0)  | 0             | (0)   | -        |
| After having dinner/ Before going to bed                                  | 22               | (76) | 25            | (89)  | .30      |
| When drinking alcohol   | 1                | (3)  | 2             | (7)   | .61      |
| Special occasions   | 8                | (28) | 2             | (7)   | .079     |
| Others  | 1                | (3)  | 0             | (0)   | 1        |
| <b>Mode of Obtaining <i>Sakau</i></b>                                     |                  |      |               |       |          |
| Always make at home   | 3                | (10) | 1             | (4)   | .015     |
| Buy/Make at home  | 11               | (38) | 21            | (75)  |          |
| Always buy market <i>sakau</i> or drink in <i>sakau</i> bars              | 15               | (52) | 6             | (21)  |          |
| <b>Reasons for Drinking <i>Sakau</i> (Multiple)</b>                       |                  |      |               |       |          |
| To relieve anxiety  | 11               | (38) | 15            | (54)  | .29      |
| I like that taste   | 0                | (0)  | 11            | (39)  | <.001    |
| To gain courage   | 0                | (0)  | 4             | (14)  | .052     |
| I am accustomed to it   | 5                | (17) | 3             | (11)  | .70      |
| Influence of friends/family   | 3                | (10) | 2             | (7)   | 1        |
| Influence of traditional  | 4                | (14) | 1             | (4)   | .35      |
| To fall asleep easily   | 6                | (21) | 2             | (7)   | .25      |
| Others  | 1                | (3)  | 0             | (0)   | 1        |
| <b>Expense for <i>Sakau</i> (US\$/2 Weeks)</b>                            |                  |      |               |       |          |
| < 20  | 15               | (52) | 27            | (96)  | <.001    |
| > 20  | 13               | (45) | 1             | (4)   |          |
| Unsure  | 1                | (3)  | 0             | (0.0) |          |

\* difference between Kolonia and Mand using Fisher's Exact Test

of asking for forgiveness. According to her, a man accidentally hit and injured his wife's uncle couple years ago. During his parole, the man prepared *sakau* for the relatives of the victim. At first, they refused to drink but eventually accepted his offer to drink after several attempts, which indicated forgiveness. On the other hand, 2 women in Kolonia stated that they drank *sakau* before sexual intercourse, which has not been reported in previous studies.

In regard to the mode of obtaining *sakau*, significantly more *sakau* drinkers in Kolonia (52%) responded that they "always buy market *sakau* or drink in *sakau* bars" than in Mand (21%,

$P=.015$ ). In casual conversation with women in Mand, one of them stated, "We prefer to make *sakau* by ourselves because market *sakau* and *sakau* bars are expensive and contain too much water, so we need to spend a lot of money to feel the *sakau* and be relaxed."

In terms of reasons for drinking, 38% of *sakau* drinkers in Kolonia and 54% in Mand indicated they drank to relieve anxiety. A few persons in Mand (4%) referenced drinking for traditional reasons. In Mand, 4% drank "to gain courage," whereas in Kolonia none did. Also, in Mand 39% responded "because I like that taste"; however, when the author drank *sakau* with villagers

in Mand, they instructed the author to “drink beer or soda, eat something like candy, snack, or chocolate, chew betel nut soon after drinking *sakau* to get rid of the taste.” Other reasons for drinking identified during conversations included “for socializing,” “for talking with people while drinking *sakau*,” and “for drinking even without money.” These were reported in both Kolonia and Mand. A man in Kolonia in his 40s stated, “when we do not have money, others pay for me, and when others do not have money, we would pay. So, we could drink *sakau* even when we do not have money and we could always drink *sakau* with many people.” Ninety-six percent of the *sakau* drinkers in Mand spent less than \$20 US every 2 weeks on buying *sakau*, while 45% of the drinkers in Kolonia spent more than \$20 US every 2 weeks ( $P < .001$ ). Participants reported that market *sakau* was priced around \$6 US per 1000 ml, that *sakau* bars were relatively expensive, and that the price was rising along with the increasing demand. A Kolonia man in his 60s said, “Recently, many people spend too much money for *sakau*. They end up wasting money and could not afford to buy food or any educational tools for their families.” Conversely, the increased demand for *sakau* was beneficial for others. Villagers reported that people engaged in the *sakau* business earned more than government employees did. A woman who sold market *sakau* in Kolonia as a family business reported her monthly sales of *sakau* totaled approximately \$7000 US.

## Discussion

This study aimed to describe the current use of *sakau* in Pohnpei and consider by whom, on what occasions, and for what purposes *sakau* is consumed, and whether it continues to play a role in traditional ceremonies.

There is increased sale of *sakau* outside homes, along with widened use of *sakau*. Although *sakau* use in the past was strictly limited to those with high rank or men,<sup>4</sup> the findings indicate that *sakau* is now consumed regardless of gender. The results from Mand indicate *sakau* is consumed by people who never used it traditionally, although the frequency of *sakau* consumption is lower than in Kolonia. This difference in consumption frequency and alternate modes of obtaining *sakau*, may be reasons for the lower cost of *sakau* in Mand. Limited places where people can easily buy *sakau* in Mand, along with significantly lower personal incomes, may be other contributing factors. The observation that *sakau* is prepared and consumed even by those without a cultural history of drinking *sakau* has also been observed with kava. Currently, kava is consumed by populations that did not drink it in the past, such as the Aboriginal community in Australia, the Maoli community in New Zealand, and in Kiribati.<sup>2,35-37</sup>

Although *sakau* is still used in traditional contexts, such as feasts, asking for forgiveness, and asking for a woman’s hand in marriage (*sakau en pahnta*) in Pohnpeian society, only a minority reported that they did so. The practice of reserving the drink for people with high rank during special occasions may

be one reason for this.<sup>4,23</sup> As the traditional culture of Pingelap Island does not use *sakau*,<sup>5</sup> it was not surprising that only 2 participants reported drinking *sakau* on such occasions in Mand.

More frequently, despite not liking the taste, respondents reported using *sakau* in everyday life, such as for the treatment of anxiety. Laboratory experiments have demonstrated that kava extract has a hypnotic effect and enhances sleep quality.<sup>38</sup> It may regulate physiological reactions during stress due to its sedative, analgesic, anticonvulsant, and local anesthetic effects.<sup>39,40</sup> Exported kava from the Pacific Islands is used as a source of pharmaceutical compounds and supplements sold in drug stores in several countries.<sup>2,7</sup> A previous study reported that the primary reason for drinking *sakau* was socializing,<sup>4</sup> which is consistent with the results from this report. In addition, *sakau* was reportedly always consumed with others, which may be interpreted as a type of socializing and how respondents “can drink without money.” In 1941, Imanishi noted that any passerby in Pohnpei could receive food from and join the gathering of any villager and this custom is still observed to this day.<sup>27</sup>

The participants reported both negative and positive economic consequences from widened *sakau* use. One participant called *sakau* a waste of money, a sentiment shared by people in other countries.<sup>9,14,20</sup> However, given that more than half the participants earned incomes of less than \$100 US per 2 weeks, a monthly *sakau* sale of \$7000 US is a lucrative business. Demand has increased, not only domestically, but also internationally. Pounded and frozen roots and liquid extract of *sakau* are exported to Guam, Saipan, Hawai‘i and other US states, and consumed by migrants from the island.<sup>23</sup> This phenomenon is not unique to Pohnpei, as other Pacific Islands also export kava for migrants living in developed countries.<sup>2,7</sup> The increased demand for *sakau* has changed the *sakau* business, which was once the only method for earning cash among the underprivileged,<sup>23,31</sup> to that of a highly profitable business venture.

## Limitations

This study is limited by the relatively small sample size, and may not be representative of the Pohnpei population. The span of fieldwork was short and the results may not fully cover other aspects of everyday life and traditional events. The structured questionnaire may have limited participant responses. Finally, the study may have overlooked the views of people who do not drink *sakau*.

## Conclusion

Currently, *sakau* is consumed in Pohnpei for treating anxiety and socializing, regardless of gender and original culture. This widespread use has been profitable for people engaged in the *sakau* business and for the country’s economy. *Sakau* continues to play a traditional role in the Pohnpeian society.

## Conflict of Interest

The authors declare no conflict of interest.

## Disclosure Statement

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