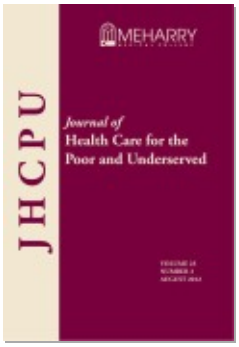

# Drug Resistance Strategies of Rural Hawaiian Youth as a Function of Drug Offerers and Substances: A Community Stakeholder Analysis

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ORIGINAL PAPER

# Drug Resistance Strategies of Rural Hawaiian Youth as a Function of Drug Offerers and Substances: A Community Stakeholder Analysis

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*Abstract:* This study examined the variations in drug resistance strategies endorsed by community members for rural Native Hawaiian youth in drug-related problem situations. Community stakeholders completed a Web-based survey focused on drug-related problem scenarios and their matched set of responses developed by middle/intermediate school youth in prior research. Mean differences were examined based on drug offerers described in the scenarios (i.e., peers/friends, cousins, and parents) and the substances offered in the scenarios (i.e., marijuana and alcohol). Compared with other strategies, *Refuse* had the highest mean scores within two offerer subgroups (peers/friends and cousins) and within both substances (alcohol and marijuana). *Leave* had the highest mean score within scenarios describing drug offers from parents. The endorsement of different resistance strategies varied based on drug offerers and substances offered in the selected scenarios. This study suggests that resistance skills in prevention should be tailored to youths' social context in rural Hawai'i.

*Key words:* Hawaiian youth, drug prevention, stakeholder analysis, resistance skills.

Prevention in rural communities has become a national priority. Emerging federal legislation (The Affordable Care Act) has included provisions for enhanced delivery of prevention interventions in rural areas,[1] which could make a significant impact on rural health and health disparities. Historically, however, research on youth drug prevention has underrepresented rural populations in their samples,[2] creating a dearth of knowledge specific to these populations. This issue is complicated further for rural Native Hawaiian youth, as there is a lack of evidence-based substance abuse prevention

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programs developed for these youth.[3,4] This has occurred despite alarming disparities in illicit drug use between Native Hawaiians and other major ethnocultural groups.[5]

The purpose of this study is to examine the variations in drug resistance strategies endorsed by community members for rural Native Hawaiian youth in drug-related problem situations. A sample of community stakeholders on the island of Hawai'i (i.e., teachers, principals, social service agency providers, and older youth) ranked drug resistance strategies used in hypothetical drug-related problem situations described in prior research.[6] Variations in the endorsement of these strategies were analyzed based on drug offerers in associated problem situations (i.e., types of individuals who offered substances in the situations—peers/friends, cousins, and parents) and the types of substances offered in these situations (i.e., alcohol and marijuana). The findings provide a typology of drug resistance strategies used in specific sociocontextual situations, and therefore have implications for the development of culturally focused drug prevention programs for Hawaiian youth in rural communities.

## Literature Review

**Native Hawaiian youth and drug use**. Over the past decade, there have been numerous studies that have described disparities in substance use/abuse for Native Hawaiian youth, compared with other major ethnocultural groups. These studies have highlighted higher rates of substance use[7–10] and earlier substance use initiation[11,12] compared with other ethnocultural groups in Hawai'i. Since the majority of Native Hawaiians reside in rural areas in Hawai'i (i.e., primarily on islands other than O'ahu[13]), substance use/abuse is considered a major issue not only related to Hawaiian health, but to rural health across the state.[14] Indeed, Lai and Saka[11] found substance use rates to be particularly pronounced within rural areas in a statewide analysis of the Youth Risk Behavior Survey in Hawai'i.

Most of the research focused on Native Hawaiian youth and drug use has been epidemiological.[3] Subsequently, very little is known about the causal factors related to youth substance use in Hawai'i, or about the culturally and regionally specific ways to intervene with this issue. Rehuher et al.[15] conducted an exhaustive review of the evidence-based drug prevention practice literature, and found only two programs that reported Native Hawaiians in their samples. Both of these programs were universal in nature, and therefore were limited in specifically addressing the unique worldviews related to substance use in rural Hawai'i described in prior research (e.g., Okamoto and colleagues[16]). A more recent comprehensive literature review has also corroborated the dearth of research focused on drug prevention interventions for Hawaiian youth,[3] highlighting a major gap in the prevention literature. Overall, the literature points to a need for the development of evidence-based, culturally focused drug prevention interventions for Native Hawaiian youth, as these programs have the potential to affect Native Hawaiian and rural health across the state of Hawai'i.

**Promoting Social Competence and Resilience of Native Hawaiian Youth**. In part to address the lack of drug prevention programs for Hawaiian youth, the National Institutes of Health/National Institute on Drug Abuse funded a five-year, pre-prevention study focused on the social and cultural context of substance use for Native Hawaiian youth

in rural Hawaiʻi. The project, entitled Promoting Social Competence and Resilience of Native Hawaiian Youth (or, PSCR), uses a mixed (qualitative and quantitative) methodology in order to identify culturally, regionally, and developmentally relevant problem situations involving alcohol and drugs for middle/intermediate school aged youth on the Island of Hawaiʻi. The overall study also focuses on identifying socially competent responses to these situations. In collaboration with state- and county-level agencies on the Island of Hawaiʻi, the overall goal of the study is to provide a scientific foundation for drug prevention programming for rural Native Hawaiian and local youth in Hawaiʻi.

To date, PSCR research has described community-level risk and resiliency factors related to drug use in rural Hawaiʻi,[16] and has identified a typology of situations involving drug offers from peers/friends and family members on the Island of Hawaiʻi (e.g., cousins, parents, extended family members[17–19]). The study has also described a typology of drug resistance strategies used in drug offer situations identified by middle/intermediate school aged Hawaiian youth on the Island of Hawaiʻi.[6,20] The present study represents the final phase in the pre-prevention process. Instead of focusing on the primary stakeholders of the future prevention intervention (i.e., the middle/intermediate school youth), the present study focuses on secondary stakeholders with a vested interest in reducing substance use on the Island of Hawaiʻi (i.e., teachers, school principals, social service agency providers, parents, and older youth), in order to validate the youth-generated findings from prior years of the overall study. While the youth-generated findings are essential to inform the overall content of culturally focused drug prevention programming, the secondary stakeholder findings are important to inform areas such as the implementation, feasibility, and adoption of prevention interventions. In recent years, these latter issues have become an important research focus at the federal level.[5]

## Methods

**Procedure**. Five middle or intermediate schools, two high schools, and four community-based organizations (CBOs) within two public school complex areas on the Island of Hawaiʻi participated in this study. Consistent with rural definitions from the U.S. Census Bureau and the Hawaiʻi Rural Health Association,[14,21] the schools and CBOs were located in areas with populations of less than 50,000. These areas also had a higher percentage of families receiving public assistance compared with the State.[13] School- and agency-based staff were recruited through a series of presentations by the research team during regular faculty or staff meetings. Presentations for older youth were coordinated in collaboration with a school-based research liaison. These liaisons were school staff members (e.g., school counselors, teachers) who were responsible for promoting and describing the study, distributing and collecting parental permission forms, and identifying space within their respective schools for recruitment presentations and survey administrations. Recruitment presentations consisted of a brief description of the previous phases of the PSCR study and the purpose of the current phase of the study (i.e., to conduct a Web-based validation survey), and a description of informed consent procedures.

Participants were allowed to complete the online survey in one of two ways:

(1) through a *group-administration*, in which participants completed the survey within a computer laboratory as part of the recruitment presentation, with the research team providing on site troubleshooting assistance, or (2) through a *self-administration*, in which participants completed the survey on their own time after the recruitment presentation. After the presentation, participants in both conditions who expressed interest in completing the survey were subsequently given a unique passcode that they were required to use to access the Web-based survey online. Participants who took the group-administered version of the survey completed hard copy versions of the consent and/or assent forms. Further, all youth participants were required to complete the group-administered version of the survey, to ensure that only youth who provided both parental consent and assent were able to participate in the study. In addition to the standard description of the survey, respondents who completed the self-administered version of the survey were also presented with a brief computer demonstration of the survey during the recruitment presentation. The consent procedures were online for the self-administered version of the survey, which required participants to check a box on the consent form prior to advancing to the survey. All research procedures were approved by the institutional review boards at Hawai'i Pacific University and the University of Hawai'i at Mānoa.

**Instrument**. The online survey consisted of fifteen different drug related problem scenarios and their matched sets of responses developed by middle school youth described in prior research[8,19] (see Table 1). Respondents were directed to select the five best and five worst responses to each scenario, and to provide a brief, typewritten justification for their first-ranked selections. The present study focused on the analysis of best responses only, as they have the most applicability toward the development of culturally focused drug prevention in rural Hawai'i. Across all scenarios, respondents evaluated a total of 413* separate responses. The mean number of responses per scenario was 27.5 (standard deviation [SD] = 9.46), with a range from 13 (Scenario 5) to 44 (Scenario 15).

In order to mitigate respondent fatigue, several features were designed into the online survey. For the selection of the best and worst responses, respondents were presented with a shopping-cart format, in which they were able to select their response using a computer mouse, which would automatically send their selection to a separate list on the same screen. This format eliminated the need for respondents to retype their selected responses. Additionally, after respondents selected their five best responses to a scenario, their selected responses were subsequently removed from the list of choices used to identify the five worst responses. This reduced fatigue by reducing the number of response options, and also prevented error from the selection of the same response as the best and the worst for each scenario. Finally, the order of the survey items was designed such that scenarios with larger numbers of responses (e.g., Scenario 4) were clustered near items with fewer numbers of responses (e.g., Scenario 5).

**Participants**. Across the 11 sites, a total of 266 passcodes were distributed, with 145 of these codes being used to access the online survey. The overall response rate

*Seven responses were *verbatim* duplications of another response within the same scenario, so these responses were deleted from the survey.

was 55%, which is slightly lower than rates reported for similar Web-based surveys (63%[22]). Seven of the passcodes used to access the survey were associated with entries that contained limited data (e.g., only partial demographic data), and therefore these entries were eliminated from the dataset. Subsequently, data from 138 respondents were included in this study. Sixty-two percent of the sample was female, 20% ages 16–21, 22% ages 22–40, and 59% ages 41–70. The majority of the sample identified as Native Hawaiian (33%), followed by White/Portuguese (28%), Japanese (16%), Filipino (9%), Hispanic/Latino/Spanish (6%), Other Pacific Islander (4%), Korean (2%), Chinese (1%), and Other Asian (1%). The majority of the sample worked within an educational setting (52%), followed by a community-based organization (26%), or as a high school student (19%). Seventy-seven percent of the sample had six or more years of experience working with youth in a professional setting. Forty percent of the sample had a Master's degree as their highest level of education, followed by a Bachelor's degree (25%), less than a high school diploma or GED (15%), high school diploma or GED (8%), Associate's degree (7%), and doctoral degree (1%).

**Data analysis**. Selected responses for each scenario were ranked from 1 to 5, with 1 as the top response. These rankings were reverse-coded, so that higher scores reflected preferred drug resistance strategies. All other responses not selected by respondents within each scenario were assigned a value of 0. Mean scores were calculated for each response. All responses were also coded into a resistance strategy category by the lead author (SO), and these categorizations were validated by another member of the research team. Prior PSCR research has identified 16 different categories of resistance strategies described by rural Native Hawaiian youth.[6] This study focused on the most common categories of resistance strategies identified in the prior study—Refuse, Explain, Refuse/Explain, Leave, Involve Others, and Angry Refusal. Responses within each of these categories were scaled together across all best-ranked scenarios for the main offerer subgroups (i.e., peers/friends, cousins, and parents) and substances (i.e., marijuana and alcohol; see Table 1 for categorizations of scenarios by offerers and substances). Scenario 4 focused on an ascribed "uncle" as a drug offerer, while Scenarios 2 and 12 focused on a broad categorization of substances and multiple substances, respectively. Because of their uniqueness, responses within these scenarios were not included as part of any scale for drug offerers and substances in this study. Table 2 provides descriptions and/or examples of each of the scaled resistance strategies used in the present study. From the total number of separate responses evaluated by participants in this study (413), the total number of scaled responses for drug offerers and types of substances were 207 and 219, respectively. The mean number of scaled resistance strategies per offerer subgroup (e.g., *Explain* used in peer/friend scenarios) was 11.50 (SD=8.88), and the mean number of scaled resistance strategies per substance type (e.g., *Explain* used in marijuana offers) was 18.25 (SD=10.04).

Repeated measures analysis of variance (RM ANOVA) was used to examine stakeholder preferences for different resistance strategies within situations involving different offerer subgroups and substances. RM ANOVA was also used to examine the variations in the use of each type of resistance strategy between the offerer subgroups. When overall significant differences were detected in each of these analyses, pairwise comparisons were made in order to examine mean differences. In order to control for

## Table 1.

### DRUG-RELATED PROBLEM SCENARIOS

| Item | Scenario | Offerer | Drug |
|---|---|---|---|
| 1 | You see some of your friends at the fair, so you go cruise with them for the night. Your friend has weed with her and wants to smoke. She offers you some. | Peer/Friend | Marijuana |
| 2 | A big, bulky boy in school is known to be the leader of a group of "tough kids," who fight and do drugs. He approaches you one day at recess and asks you if you'd like to hang out with his group. | Peer/Friend | Drugs |
| 3 | Your best friend offers you marijuana. You don't know what might happen to your friendship if you said "no". | Peer/Friend | Marijuana |
| 4 | You're at a New Year's Eve Party with your 'ohana, and your auntie's boyfriend offers you some of his beer. | Uncle | Alcohol |
| 5 | You're at a party with your 'ohana (family), and one of your older cousins offers you to take a sip of beer. You tell him you gotta go, but he keeps following you and asking you to drink some. | Cousin | Alcohol |
| 6 | Your friends bring Bacardi to school and mix it with juice. They are drinking it on campus during recess. They offer you some. | Peer/Friend | Alcohol |
| 7 | One of your classmates always hangs around with this group of older kids and they smoke weed every day. One day, your classmate asks you if you'd like to eat lunch with them. | Peer/Friend | Marijuana |
| 8 | You are at school, and some of your friends want to skip class so that they can smoke pakalolo (marijuana). They ask you to join them. | Peer/Friend | Marijuana |
| 9 | You are with a girl/boy you like and some other friends. They are all hiding in the bushes and smoking weed. They ask you if you want to try some. After you say no, they say, "Just try this once, it's cool." | Peer/Friend | Marijuana |
| 10 | Your older cousin is walking with you to the mall. He takes out some marijuana and says "don't tell my parents. You like some?" | Cousin | Marijuana |
| 11 | You are at home having dinner with your family. Your parents are drinking beer with dinner, and your mom offers you some. | Parent | Alcohol |
| 12 | On the nights that there is a full moon lots of the older kids like to go out at night because they can kanikapila (play music) and smoke marijuana and drink beer outside. Your older cousin invites you to come along. | Cousin | Drugs |

*(Continued on p. 1245)*

**Table 1.** ***(continued)***

| Item | Scenario | Offerer | Drug |
|---|---|---|---|
| 13 | Your dad, uncles, papa, and dad's friends are making pulehu (barbecue) in the yard, and you are with them. Your mom is inside the house. They are drinking a lot of beer, probably already drunk. Your dad offers you a beer. | Parent | Alcohol |
| 14 | You are at a family party where the adults have coolers full of beer. They are getting drunk, so you and your cousins can take a beer without the adults noticing. One of your cousins says to you, "Let's grab one." | Cousin | Alcohol |
| 15 | Your older brother enters your bedroom, closes the door, and asks you if you'd like to smoke some weed. | Sibling | Marijuana |

Type I errors, a Bonferroni correction was applied for multiple comparisons. Paired sample t-tests were also used to examine the differences in the use of each type of resistance strategy in marijuana versus alcohol situations.

## Results

**Resistance strategies within offerer subgroups and substances**. Mean scores for scaled resistance strategies within each offerer subgroup (i.e., peers/friends, cousins, and parents) and type of substance (i.e., marijuana and alcohol) are listed in Table 2. Table 3 summarizes the differences in mean scores for resistance strategies within each of the offerer subgroups and substances. In all of these conditions, Mauchly's Test indicated that the assumption of sphericity had been violated ($\chi^2$=93.93−263.82, *P*s<.01), therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε=0.55–0.73). In all conditions, there were significant differences in the mean scores for resistance strategies (*P*s<.01; see Table 3). *Post hoc* t-test analyses for offerer subgroups indicated that *Refuse* was ranked significantly more highly than all other resistance strategies in situations involving peers/friends and cousins (*P*s<.01). *Leave* was ranked the highest of all resistance strategies in situations involving parents, but was ranked significantly more highly than only two of the five other resistance strategies in these situations (*Refuse/Explain* and *Involve Others*; *P*s<.05). *Post hoc* t-test analyses for substances indicated that *Refuse* was ranked significantly more highly than all other resistance strategies in situations involving both substances (marijuana and alcohol; *P*s<.01).

**Resistance strategies across offerer subgroups and substances**. Table 4 summarizes the differences in mean scores for resistance strategies across offerer subgroups. In five of the six conditions, Mauchly's Test indicated that the assumption of sphericity had been violated ($\chi^2$=15.12−49.83, *P*s<.01), therefore degrees of freedom were corrected using either Greenhouse-Geisser or Huynh-Feldt estimates of sphericity as

## Table 2.

### DESCRIPTIVE STATISTICS FOR DRUG OFFERERS AND TYPES OF SUBSTANCES

| Strategy | Description and/or Example(s) | Drug Offerer | | | | | | | Substance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Peer/Friend | | Cousin | | Parent | | | Marijuana | | Alcohol | |
| | | N | M | SD | M | SD | M | SD | N | M | SD | M | SD |
| Refuse | Saying "no" to a drug offer | 115 | 1.68 | 0.74 | 2.53 | 1.41 | 0.63 | 0.60 | 129 | 1.70 | 0.80 | 1.35 | 0.67 |
| Explain | Providing an explanation for drug refusal | 116 | 0.59 | 0.25 | 0.49 | 0.27 | 0.46 | 0.52 | 129 | 0.68 | 0.27 | 0.47 | 0.32 |
| Refuse/Explain | "Refuse" used as a primary resistance strategy and "explain" used as a secondary resistance strategy | 116 | 0.90 | 0.39 | 0.76 | 0.42 | 0.30 | 0.53 | 129 | 0.65 | 0.33 | 0.83 | 0.45 |
| Leave | Walking away from the drug offer situation | 116 | 0.72 | 0.59 | 0.42 | 0.56 | 0.70 | 0.82 | 129 | 0.56 | 0.54 | 0.52 | 0.53 |
| Involve Others | Incorporating another person as part of drug refusal (e.g., "I would tell my mom that he offered me drugs.") | 114 | 0.31 | 0.46 | 0.42 | 0.66 | 0.41 | 0.58 | 129 | 0.49 | 0.45 | 0.50 | 0.62 |
| Angry Refusal | Refusal with an angry tone, often laced with profanity (e.g., "Get the hell away from me!") | 116 | 0.32 | 0.31 | 0.50 | 0.41 | 0.51 | 0.36 | 129 | 0.40 | 0.36 | 0.33 | 0.24 |

## Table 3.

### REPEATED MEASURES ANALYSIS OF VARIANCE FOR DIFFERENCES IN RESISTANCE STRATEGIES WITHIN OFFERER SUBGROUPS AND SUBSTANCES

| | MS | df | F | P |
|---|---|---|---|---|
| Offerer | | | | |
| Peer/Friend | 45.11 | 3.71 | 121.31[a] | <.01 |
| Cousin | 158.29 | 2.76 | 116.15[a] | <.01 |
| Parent | 3.40 | 3.64 | 7.07[a] | <.01 |
| Substance | | | | |
| Marijuana | 43.70 | 3.43 | 124.57[a] | <.01 |
| Alcohol | 26.26 | 3.43 | 72.05[a] | <.01 |

[a]Greenhouse-Geisser Correction applied for violations in the assumption of sphericity.

noted (ε=0.74–0.90). In five of the six conditions, there were significant differences in the mean scores for resistance strategies (*P*s<.01, except for *Explain*, $p<.05$; see Table 4). Table 5 summarizes the *post hoc* t-test analyses across offerer subgroups with significant differences. *Explain* and *Refuse/Explain* were ranked significantly more highly in situations involving peers/friends, *Refuse* was ranked significantly more highly in situations involving cousins, Leave was ranked significantly more highly in situations involving peers/friends and parents, and Angry Refusal was ranked significantly more highly in situations involving cousins and parents.

Paired sample t-tests were calculated to examine the mean differences in the endorsement of different resistance strategies across different substances. *Refuse* and *Explain*

## Table 4.

### REPEATED MEASURES ANALYSIS OF VARIANCE FOR RESISTANCE STRATEGIES ACROSS OFFERER SUBGROUPS

| Strategy | MS | df | F | P |
|---|---|---|---|---|
| Refuse | 122.71 | 1.68 | 142.83[b] | <.01 |
| Explain | 0.69 | 1.48 | 5.00[a] | <.05 |
| Refuse/Explain | 13.18 | 1.75 | 58.56[b] | <.01 |
| Leave | 3.61 | 1.81 | 9.34[b] | <.01 |
| Involve Others | 0.51 | 1.67 | 2.15[b] | ns |
| Angry Refusal | 1.29 | 2.00 | 14.06 | <.01 |

[a]Greenhouse-Geisser Correction applied for violations in the assumption of sphericity.
[b]Huynh-Feldt Correction applied for violations in the assumption of sphericity.

## Table 5.

### SIGNIFICANT MEAN DIFFERENCE T-TESTS FOR RESISTANCE STRATEGIES ACROSS OFFERER SUBGROUPS[a]

| Strategy | Comparison | Mean Difference | 95% Simultaneous Confidence Interval | |
|---|---|---|---|---|
| | | | Lower | Upper |
| Refuse | Peer/Friend-Cousin | −.85[c] | −1.15 | −.55 |
| | Peer/Friend-Parent | 1.05[c] | .84 | 1.25 |
| | Cousin-Parent | 1.89[c] | 1.59 | 2.20 |
| Explain | Peer/Friend-Cousin | .10[c] | .03 | .17 |
| | Peer/Friend-Parent | .13[b] | .01 | .25 |
| Refuse/Explain | Peer/Friend-Cousin | .14[c] | .03 | .25 |
| | Peer/Friend-Parent | .60[c] | .45 | .75 |
| | Cousin-Parent | .46[c] | .30 | .62 |
| Leave | Peer/Friend-Cousin | .30[c] | .15 | .45 |
| | Cousin-Parent | −.28[c] | −.48 | −.08 |
| Angry Refusal | Peer/Friend-Cousin | −.17[c] | −.26 | −.09 |
| | Peer/Friend-Parent | −.19[c] | −.29 | −.09 |

[a]A Bonferroni correction has been applied for multiple comparisons.
[b]P<.05
[c]P<.01

had significantly higher mean scores for marijuana offer situations, $t_{Refuse}(128)=5.01$, $t_{Explain}(128)=8.44$, $ps<.01$, while *Refuse/Explain* had a significantly higher mean score for alcohol offer situations, $t(128)=-4.43$, $P<.01$.

## Discussion

This study examined the drug resistance strategies described by Native Hawaiian youth in earlier research with a sample of community stakeholders within the same communities on the Island of Hawai‘i. The findings from this study indicate that community stakeholders endorse the use of different types of strategies based on the drug offerer within drug-related problem situations, as well as the types of substances that youth are being offered. Thus, the findings suggest that rural Hawaiian youth may need to make context-specific decisions within drug-related problem situations in order to be effective in dealing with demands to use drugs. Consistently with substance use research with middle school students from a prior phase of the overall study,[6] *Refuse* was found to be the most widely endorsed drug resistance strategy across most situations. This was found to be particularly true for situations involving cousins and in marijuana offers. Since the majority of marijuana offers would most likely occur outside of the household

setting, this strategy would appear to have the most applicability in drug-related problem situations with same-generation family members in the school and/or community.

Community stakeholders appeared inconsistent in their endorsement of drug resistance strategies for situations involving parents. Overall, mean scores for resistance strategies used in drug offer situations involving parents were low, suggesting an overall lack of stakeholder consensus regarding the best type of resistance strategy to use in situations involving drug offers from parents. These findings point to the challenges of preserving family relationships while simultaneously resisting substances. Nonetheless, in situations involving parents, stakeholders ranked *Leave* with the highest score, and endorsed its use significantly more than two of the five other strategies. Okamoto and colleagues[18] described Hawaiian youths' use of avoiding or leaving a situation as a response to drug offers from family members in rural Hawai'i. They described how these youth may move toward or reposition themselves near a protective family member as a way to deal with a drug offer from another family member. In addition to leaving the situation, the youth also manages his/her proximity to a protective family member in order to deal with drug offers from other family members. Future research should examine preferred and effective methods for dealing with parental drug offers toward rural Hawaiian youth.

*Angry Refusal* was endorsed significantly more often in drug-related problem situations involving cousins and parents. This finding is consistent with the youth-focused findings from a prior phase of the overall study.[6] Okamoto and colleagues[6] have suggested that *Angry Refusal* strategies may have a dual function in drug offers from family members in rural Hawai'i—(1) to express shock and dismay that a family member would offer substances, and (2) to express concern for the well-being of the family member. Further, research has suggested that angry refusal strategies may have a cultural and developmental significance for drug resistance in rural Hawai'i.[20,23] Further research should examine the role and function of angry refusal strategies, including the overt and underlying messages that anger conveys to family members in drug offer situations, and how these messages relate to drug resistance in rural Hawaiian communities. More broadly, future research should also examine the situational demands for aggression or violence in the context of drug offer situations in rural Hawai'i.

Regarding substances, *Refuse* and *Explain* were endorsed significantly more in situations involving marijuana offers, while *Refuse/Explain* was endorsed significantly more in situations involving alcohol offers. The overall availability of alcohol and prevalence of its use might suggest that rural Hawaiian youth may need to employ more complex drug resistance strategies in order to deal effectively with alcohol offers. This would explain the need to combine two resistance strategies to deal with alcohol offers. Future research should elucidate the varied ways in which youth should utilize multiple resistance strategies to deal with alcohol offers, as well as offers to use other readily-available substances.

**Implications for drug prevention**. Community stakeholder analyses are critical for validating the content of drug prevention programs, as well as addressing the feasibility of drug prevention efforts. Consequently, this study has implications for the development of the content and feasibility of drug prevention efforts in rural Hawai'i. It suggests that drug prevention should approach resistance skills training differently based on the

drug offerers and types of substances in drug-related problem situations. It argues for more context specificity in drug prevention for rural Hawaiian youth. In order to be grounded in the ethnic and regional culture of rural Hawai'i, drug prevention should reflect the varied responses to drug offers from different individuals and with different types of substances. This becomes a key component of youths' social competence within drug-related problem situations in rural Hawai'i. Regarding related populations, recent research focused on American Indian youth has similarly described variations in the use of drug resistance strategies depending on differences in the social contexts of these youth.[24] Thus, on a larger scale, the present study also contributes to a growing body of drug prevention research focused on indigenous youth populations in the United States.

This study points to the potential challenge in dealing with parental drug offers in drug prevention. While *Leave* received the highest score in drug offer situations involving parents, its overall low mean score suggests that it was not universally endorsed by all participants. Conceptually, one could argue also that leaving a drug offer situation from a parent is a temporary fix to a larger issue. Prevention science should consider the use of avoidant drug resistance strategies in familial contexts, and how these strategies might contribute toward the broader goal of familial substance use/abuse prevention. This is particularly relevant for rural Hawai'i, as prior research has described how rural Hawaiian communities are constituted of interconnected familial networks that function to intensify both risk and resilience related to youth drug use.[16]

**Limitations of the study**. This study had several limitations that may have affected the findings. First, the online survey was extremely lengthy. While several of the participants were able to complete it within a half an hour, the majority of them took up to an hour to complete it. This may have caused fatigue, potentially affecting the validity of the findings. A few of the participants who took the self-administered version of the survey indicated that they had difficulties exiting and re-entering the survey. This might have resulted in incomplete or lost data for several of these participants. There were substantially more scenarios that focused on peers/friends than on the other offerer subgroups. Because of this, the number of resistance strategy categories included in this study were limited, as there was a lack of variation in responses for several of these categories for cousin and parent situations (for a complete list of resistance strategy categorizations, see Okamoto and colleagues[6]). As a result, offers made by distant family members could not be compared with offers made by closer family members, offers made by younger *versus* older family members, or offers made by ascribed (*hanai*) *versus* biological family members. Future research might also include drug resistance strategies from additional family-based scenarios in order to examine the use of other relevant drug resistance categories (e.g., *Divert*, *Ignore*).

**Conclusions**. A statewide community stakeholder analysis found drug use to be the second-highest reported social issue affecting rural health in Hawai'i.[14] In order to address these health concerns, culturally and regionally relevant youth drug prevention programs for rural Hawaiian youth are necessary, but are currently unavailable. This study examined the drug resistance strategies described by youth in prior research in order to validate the findings across different offerer subgroups and substances. The findings from this study will contribute to substance abuse prevention efforts and rural

Hawaiian health, and may have applicability to the health of other indigenous youth populations and youth in the Pacific region.

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