

Methods and strategies used to recruit betel nut chewers for research in Micronesia

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Introduction

Guam is an island in the Northern Marianas home to the native CHamorus and a diverse population of Pacific Islander subgroups. According to the United States Census Guam (2020), Guam's population was 153,836, and Native Hawaiians and Other Pacific Islanders were the largest groups. Areca/betel nut chewing in Guam is prevalent in CHamoru, Yapese, Pohnpeian, and Micronesian communities (Paulino et al., 2011). According to the Guam Epidemiological Profile, 4.5% of CHamorus and 27.9% of Micronesians chew betel quid daily. Additionally, 33.9% of CHamorus and 69.6% of Micronesians add tobacco to their chew (David et al., 2023). Chewing betel nut can cause oral cancer, and adding tobacco in chew can increase the risk of oral cancer (World Health Organization. 2012). According to the 2013-2017 Guam Cancer Facts and Figures, mouth and pharynx cancer was the seventh most common cancer site for new cases and the seventh most common cause of cancer deaths in Guam (Lee et al., 2022). Health disparities are prevalent in Pacific Islander communities. There is a need for acknowledgment of the diverse populations within the Pacific Islander communities to allow for health disparities and inequities to be detected (Ro & Yee, 2010). Addressing the lack of research and representation of Pacific Islanders is vital to reducing health disparities within these communities.

The University of Guam (UOG) collaborated with the University of Hawaii Cancer Center (UHCC) to conduct research investigating the presence of areca (betel nut) alkaloids, buccal cells (short-term exposure), and hair strands (long-term exposure)

among betel nut chewers. Eligible participants were individuals 18 and older who chewed betel nut with or without tobacco for at least a year. Participants were classified into two groups: Class 1 chewed betel nut without tobacco, while Class 2 added tobacco to their chew (Paulino, 2014, 2020). The team advertised the study using various methods, and interested individuals reached out. Participants were required to answer a questionnaire and provide hair and buccal cell biospecimens. All qualified participants consented to the project, and there were no dropouts after obtaining consent. From May 2021 to May 2022, 128 betel nut chewers in Guam were enrolled in the study. The purpose of this paper is to share the methods and strategies used to successfully contact and recruit hard-to-reach populations such as betel nut chewers to improve productivity and guide future researchers focusing on Pacific Islanders. Several recruitment methods were used: online (social media platforms such as Facebook, Instagram, and WhatsApp, emails), phone calls, presentations, onsite recruitment, incentivized referrals, collaborations with UOG research studies, and broadcast and print media.

Online

Social Media: Facebook and Instagram

The rising Coronavirus (COVID-19) cases in Guam greatly restricted in-person recruitment; thus, the team focused on online recruitment. These methods included the use of social media (Facebook and Instagram), email, and WhatsApp. The team created social media posts, including study information and tailored visuals to reflect the community.

An Instagram and Facebook account for the project was created to distribute information and present the project's flyer. Weekly posts on Instagram and Facebook included betel nut and cancer facts, project information, and monthly raffle giveaways. On Instagram, keywords such as betel nut, pugua, and Guam were used as hashtags to target betel nut chewers in Guam. Buente et al. (2020) observed that #betelnut is a

hashtag that has grown throughout the years and drives social engagement. These hashtags ensured that those interested in betel nut could see the posts.

Locals in Guam use Facebook to interact with various organization project pages or groups to interact with the community. For example, there are Facebook groups for selling or trading items, making announcements, Guam jobs, and neighborhood watch groups. After getting permission from the Facebook page admins the project flyer and information were posted in various Facebook groups. The benefits of using Facebook for recruitment included reduced cost, shorter recruitment periods, better representation, and improved participant selection in young and hard-to-reach demographics (Whitaker et al., 2017).

The team also contacted various cultural organizations, such as the Micronesian Resource Center One Stop Shop (MRCOSS) by directly messaging their Facebook page. They helped distribute project information by reposting the project flyer on their social media accounts. MRCOSS is an organization that provides services tailored to the Pacific Islander communities in Guam. They are familiar with communicating with hard-to-reach communities in Guam, especially the Chuukese and Micronesian communities, who are likely to be or know any betel nut chewers.

Email

The marketing and communications team at UOG sent a mass email to the UOG Triton community. Current students, alumni, and staff at UOG were informed of the study through this method. Mayors from each village were also contacted through email. The mayor's staff provided referrals and allowed the team to conduct in-person recruitment at their offices. This method allowed us to communicate with government, schools, and companies around the island. However, emails are limited as they may end up in junk mail and have a long response time. Nevertheless, emails are reliable,

professional, and effective in communicating with large organizations or in a more formal setting.

WhatsApp

Another method of online recruitment was through the messaging app called WhatsApp. WhatsApp is a free app that relies on internet connection and can be used on smartphones and computers. Many in Guam use WhatsApp to create group chats among organizations, communities, families, and friends. WhatsApp group chats tend to be informal, which makes it more comfortable for others to ask questions and chat (Jailobaev et al., 2021). WhatsApp was used to distribute project flyers to student organizations at UOG and other personal group chats.

Team members could also communicate, readily answer interested individuals' messages, and send data collection reminders to participants. Although this method allows for quick ways to share information and gain immediate response, keeping track of where the information travels is hard.

These online methods are easy, free, and can reach a broad audience. Social media targeted younger adults and made it easy and quick for others to share information and project flyers. Pictures and graphics from social media posts captured attention and ignited interest in the study. Simple and short information on flyers ensured that information was easy to read and understand. However, not everyone has a social media account, smartphone, or internet access. Only 15% (n=19) of the sample was recruited online.

Phone calls

Interested individuals called to inquire about participation in the study. Phone calls allowed the researchers to prescreen eligibility and schedule and remind participants of data collection sessions. Finally, phone calls allow a direct connection with participants. However, a limitation to this technique is that phone numbers may be

changed, and those with pre-paid phones may have their number go out of service due to missed phone payments. Also, some individuals may only be contacted at certain times of the day because they share a phone number with family members or use landline phones.

Presentations

Virtual and in person

A research associate conducted virtual and in-person presentations about betel nut and tobacco use. On Zoom, the project was introduced to students in the UOG health science research classes. Additionally, an in-person presentation about the effects of tobacco and betel nut usage on youths was conducted at the Tully Foundation. Project flyers were also given to those in attendance.

Presentations allowed the team to pitch the project and inform others of how the study will help Guam's community and benefit their participants. When researchers show how the study can bring positive results to the community, participants will gain trust in researchers (Mendez & Arat-Cabading, 2016). The students may also be more engaged during presentations and ask questions which can lead to them referring their friends or family to enroll in the study. The team made efforts to show the benefits and importance of betel nut research and the positive impact it can bring to the community.

Onsite Recruitment

The team attended community outreaches that were CHamoru and other Micronesian cultures to conduct onsite recruitment. First, team members attended mass in different villages and distributed flyers and UOG tote bags after mass. The mass in Dededo and Tamuning was conducted in Chamorro, while the mass in Yigo was conducted in Palauan. Because the mass was in native languages, it ensured that those in attendance were individuals whose culture may practice betel nut chewing. Also, members of the church have a communal relationship. When those in the same

communal group advertise research, participants become more open and cooperative in the recruitment process (Mendez & Arat-Cabading, 2016). Several studies found that communicating with faith-based leaders is an important part of recruiting Pacific Islanders and that churches are an ideal place to discuss health information (Cassel et al., 2020; McElfish et al., 2019).

The team coordinated community outreach with UOG nursing students at Zero Down in Yigo. Zero Down is a subdivision with government housing for low-income families. During a Town Hall meeting, the team introduced themselves and distributed project flyers, tote bags, and drinks to residents. This method allowed the team to meet hard to reach populations.

The most successful onsite recruitment location was at the Inarajan Mayor's Office. The team held several data collection sessions at the Inarajan Mayor's Office. The project banner and other participants from data collection attracted passing residents, which led to them enrolling in the study. The team also visited each village's Mayor's Office and posted flyers on bulletin boards. Promotional items were also given to the mayor's staff. In the southern villages, the mayor's staff identified and referred households that are known as betel nut chewers. Community-based organizations allowed us to conduct outreach at convenient sites for participants (McElfish et al., 2019).

Onsite recruitment allowed for a more hands-on or traditional approach to recruitment. Several other studies have also taken a proactive approach to onsite recruitment, allowing for more targeted recruitment (Murphy & Herzog, 2015; Murphy et al., 2019; Dalisay et al., 2019). The advantage of onsite recruitment is that team members found places where the advertisement of the betel nut study would most likely reach betel nut chewers.

A team member explaining the project created a more reliable and engaging atmosphere between interested individuals. Also, participants are more cooperative when they can identify those in charge of the project and have an established relationship with those who endorse it (Mendez & Arat-Cabading, 2016). Onsite recruitment is free and allows the team to find the targeted population and form connections. Nevertheless, traveling to all the villages in Guam is time-consuming, and travel funds are costly. Another limitation of this method is that all team members had to wear complete personal protective equipment (PPE), which may be uncomfortable as Guam's weather is hot. Although onsite recruitment contributed to 7% (n=9) of the sample, the team was able to create connections with locals and organizations within the community.

Incentivized Referrals

Individuals who successfully participated in the study were rewarded with a \$40 gift certificate for gas or a local grocery store. A study in Hawaii found that participants preferred gift cards to local grocery stores (Cassel et al., 2020). In addition to the participation reward, incentivized referrals were advertised to recruit betel nut chewers. Similar studies in Guam have also issued incentives for participation and referrals ranging from \$20 to \$175. (Moss et al., 2015; Murphy et al., 2019; Sotto et al., 2020). The most successful way of recruiting Class 1 betel nut chewers was by incentivized referrals. According to Dalisay et al. (2019), "Seventeen out of 20 participants reported having at least one close friend who chewed betel nut" (p.7). Participants who recruited someone into the study were rewarded with a \$10 gift certificate to either Payless, a local grocery store, or 76, a local gas station for each person they recruited. When the recruitment of Class 1 chewers was low, referrals were increased to \$20 gift certificates for each person recruited. This increase in incentives further motivated recruiters to give referrals, which helped complete Class 1 recruitment. Incentivized referrals and participation also ensured that the individual referred to the study was more likely to

finish the sample and survey collection process. The team recruited 78% (n=99) of the sample through incentivized referrals. The limitation of this method is that funds are needed to purchase incentives for recruiters.

Collaborations

Past and present UOG research studies helped recruit participants. Past betel nut research, such as the Betel Nut Intervention Trial (BENIT) study (Paulino et al., 2020) was used as a basis for recruitment. Past participants who stated they were interested in future research were contacted, and some enrolled in the new study. Most Class 2 chewers were recruited from this method. The team collaborated with other UOG research studies by attending outreach together and sharing project information to their participants.

The strength of collaboration between research studies is that culturally competent researchers are familiar with recruitment. Additionally, past participants already have an existing connection and trust with the staff, which creates a comfortable recruitment process. Responses are received when participants have established relationships with those in the study (Mendez & Arat-Cabading, 2016). The recruitment process will also be more efficient as they may be more familiar with consent and data collection.

Broadcast and Print Media

Radio

The study was advertised on two local CHamoru stations, KSTO 95.5 FM/KISH 102.9 FM, for the entire month of December 2021 and was aired in the morning and afternoon. The radio ad targeted Class 1 chewers only as this demographic was challenging to recruit. Class 1 chewers tend to be older (Murphy et al., 2019). Older adults are likelier to listen to the radio and discover the project through radio ads. However, the ad was only aired for a month since the radio ad fees were expensive.

Television

A UOG Cancer Research Center representative had an interview on KUAM, a local television broadcasting channel. The interview helped share information about the study and provided contact information for interested people. The interview can be viewed on KUAM's website, YouTube account, and the Betel Nut Biomarker project's Facebook page. Having a face to the project creates a connection with interested individuals and gives them someone to relate to and trust. In addition, older adults are more likely to watch the local news on TV, which may help recruit Class 1 chewers who tend to be older in age. However, a limitation of this method is that not everyone in Guam has cable or television.

Newspaper

Local newspapers such as the Pacific News Center and the Pacific Daily Newspaper posted articles about the project and project flyer on their websites and printed them in newspapers for free. Newspapers are easily accessible and can reach those not active on the internet and hard to reach populations. Free newspapers are available in some restaurants and cafes. However, because the newspaper article was not a paid ad, it was only available in print for one day. Additionally, those with a lower reading level or with English as their second language may have trouble understanding a newspaper article.

Conclusion

The different recruitment methods of online, phone calls, presentations, onsite recruitment, incentivized referrals, collaborations with other UOG research studies, and broadcast and print media allowed the team to successfully recruit 128 betel nut chewers in Guam. The most effective recruitment method was incentivized referrals (78%), followed by online (15%), and onsite recruitment (7%). The success of recruitment through referrals made by recruiters, participants, and staff may be

attributed mainly to the established relationships between recruiters and participants. A study that explores the ties between culture and clinical research in Guam underscores the importance of individuals within the group of interest encouraging participation, which fosters collaboration and a willingness to participate of more individuals (Mendez & Arat-Cabading, 2016). The successful use of incentives is also consistent with another study on Guam, where recruitment was a challenge (Dalisay et al., 2019). The gas and grocery incentives may have motivated individuals to participate due to the financial stress during the COVID-19 pandemic. Online recruitment was the second effective method due to limitations conducting onsite recruitment posed by the pandemic. While traditional methods such as phone calls, presentations, and broadcast and print media did not yield high results in recruitment. Despite limitations, our findings present several strategies that aid in recruiting a hard-to-reach population. We shared these methods to contribute to the community of researchers in Guam and those also targeting these specific demographics. The results from this pilot study will be published in a forthcoming paper in collaboration with UHCC.

Acknowledgments

We would like to thank Jade San Nicolas Chennaux, the Guam Mayor's Office staff, the Department of Guam Public Health Laboratory, and the Diagnostic Laboratory Services for their help with recruitment, specimen collection, storage, and shipment. Most importantly, we thank our participants for their time and knowledge. This study was supported by the Pacific Island Partnership for Cancer Health Equity grant from the National Cancer Institute (2U54CA143728-11).

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