

# Health information data about Pacific Islanders in Guam: Using the respondent-driven sampling (RDS) method as a viable alternative for data collection

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# Significance

- Despite improvements in the overall health of the general population, significant health disparities across diverse populations persist.
- Understanding differential dynamics of communication and health behaviors in various cultural contexts is necessary to effectively address health behaviors among diverse populations.
- Data on minority and hard-to-reach populations are needed to inform cancer prevention and control program efforts.

# Study Objective

- ▶ To identify an efficient and cost-effective non-probability sampling strategy that can generate reasonable population estimates for the Pacific Islander population in Guam
- ▶ To test the efficacy of the respondent-driven sampling (RDS) method (Heckathorn, 1997)

# Method

- Focus group discussions to determine feasibility of using the RDS method, identify cultural factors
- A survey on health communication with the HINTS instrument as the basis
- Inclusion of additional items aimed at identifying cultural factors and communication practices that may influence health behaviors related to cancer risk and prevention in this population.
- Administration of the survey between February and March, 2013.

# Survey Questionnaire and Measures

- The questionnaire was developed based on the Health Information National Trends Survey (HINTS).
- Measures include:
  - How people access and use health information
  - How people use information technology to manage health and health information
  - The degree to which people are engaged in risk/health behaviors.
  - Cultural factors and communication practices that may influence cancer risk and prevention behaviors

# Respondent-Driven Sampling (RDS)

- Is a new form of chain-referral sampling
- Developed by Douglas Heckathorn in [1997](#), as part of a National Institute on Drug Abuse-funded HIV-prevention research project targeting drug injectors in Connecticut cities.
- Used in over 100 studies; e.g., CDC's Global AIDS Program
- Reduces bias resulting from the choice initial subjects by weighting the sample to compensate for the effects of difference in network sizes and other remaining source of bias

# Features of RDS

Similar to snowball sampling, with some modifications.

- Starts with small initial convenience sample - “seeds”
- Seeds are asked to recruit others – “first wave”
- Respondents are asked to recruit others without identifying them.
- Dual incentives are used: for participation and recruitment.
- Recruitment quotas are used.
- Uses special coupon system to track the recruitment process, i.e., who recruited whom.

# Features of RDS

- RDS creates a stochastic process in which each recruiter's characteristics (gender, ethnicity, etc) affect the characteristics of recruits **but** recruits' characteristics, e.g., ethnicity, depends only on the immediate recruiter but not on ethnicity of previous recruiters. (Markov property)
- It can produce samples that are independent of the initial subjects.

# RDS Data Analysis

In order to analyze RDS data, we need to collect:

- Personal network size (number of people the respondent knows within target population)
- Participant's coupon number
- Number of recruits

# Data collection process

- Recruitment of initial seeds
  - N=14
  - Balance according to gender, age, ethnic background, geographical representation
- Incentives – gas coupons

# Recruitment coupon

## Health Communication Survey

Come to our research site **with this coupon** to complete a survey. If you are eligible for this study, you will receive a **gift card for free gas**.

*This coupon will not be accepted if:*

- The expiration date has passed.
- The coupon holder has already taken the survey before.
- This coupon is damaged, torn, or unreadable.
- The study has reached the target size of 500 participants.



LOCATED AT THE UOG  
DEAN'S CIRCLE,  
BUILDING 27

## Health Communication Survey

*This coupon will not be accepted if:*

- The expiration date has passed.
- This coupon is damaged, torn, or unreadable.

You will receive your payment if each person you recruited:

- Is eligible and enrolled in the study.
- Completes the survey.
- Has only taken the survey once.

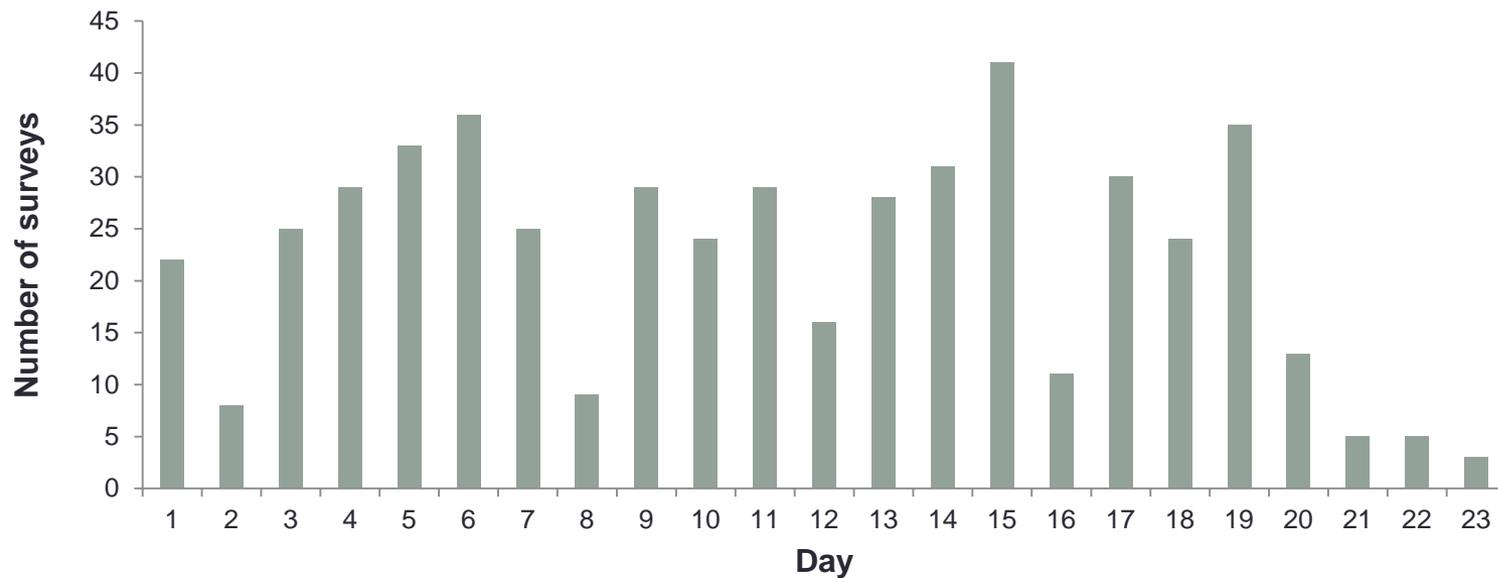


*Thank you for  
participating  
in our study!*

# Response to recruitment

- Total number of days of data collection = 23
- Limiting factor – research staff

**Data Collection Numbers (Feb. 1 - March 6)**





## Recruitment – Seed information

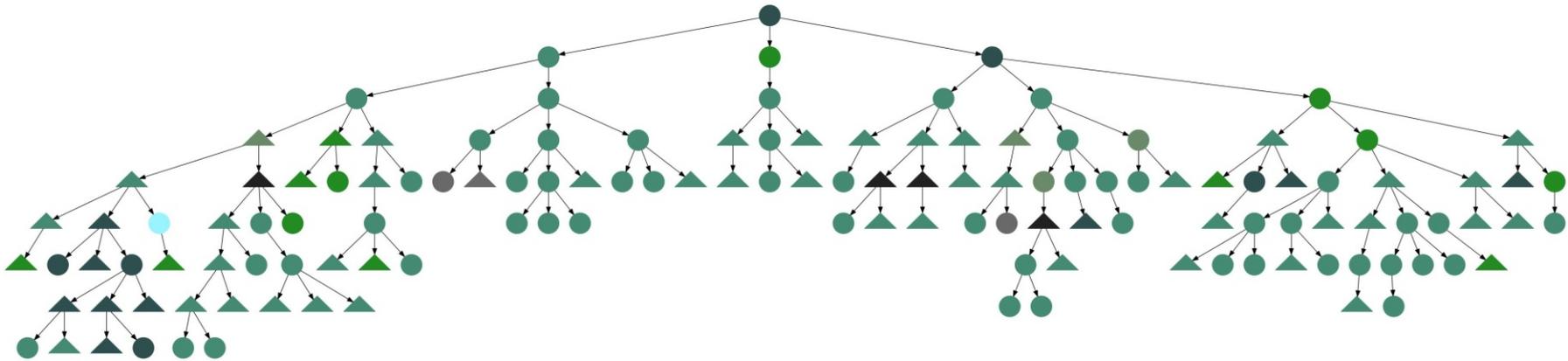
<b>Seed Number</b>	<b>Age</b>	<b>Gender</b>	<b>Ethnicity</b>	<b>Village</b>	<b>Number of Recruits</b>
Seed1	36	Female	Palauan	Mangilao	132
Seed5	58	Male	Pohnpeian	Talofofo	11
Seed6	39	Female	Chamorro	Talofofo	11
Seed12	21	Female	Chuukese	Mangilao	7
Seed19	24	Male	Filipino	Barrigada	259
Seed21	47	Female	Filipino	Dededo	1
Seed26	23	Female	Chamorro	Yona	0
Seed27	23	Female	Filipino	Yigo	0
Seed28	57	Male	Filipino	Yigo	68
Seed89	61	Male	Filipino	Merizo	0
Seed101	63	Male	Chamorro	Dededo	2
Seed133	28	Male	Chamorro	Yona	1
Seed138	37	Female	Chamorro	Yona	3
Seed149	55	Female	Chamorro	Agana Heights	2

## Demographic Comparison

		2010 Census	RDS unweighted	RDS weighted
Gender	Male	51.0	43.6	51.0
	Female	49.0	56.4	49.0
Age groups	18 to 34	36.3	66.8	35.7
	35 to 54	31.9	22.4	32.3
	55 and over	31.8	10.8	32.0
Ethnicity*	Chamorro	38.46	51.6	38.8
	Filipino	31.5	30.8	31.8
	White	8.86	2.9	10.8
	Asian	7.64	4.1	5.7
	Pacific Islander	7.13	10.0	10.3
	Other	2.22	0.6	2.5

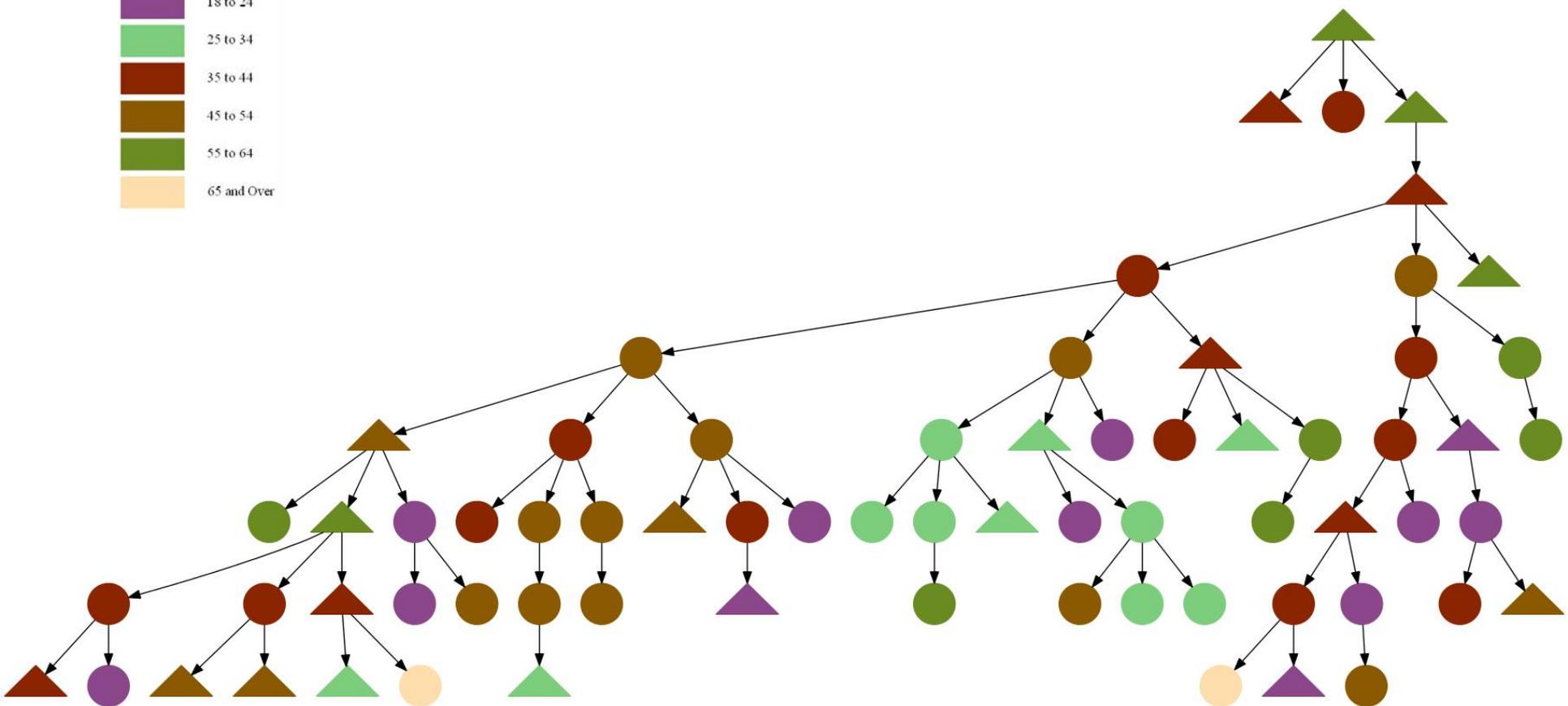
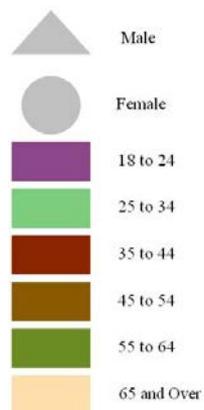
# Wave patterns by ethnicity

Seed: female, Palauan,  
36 years old



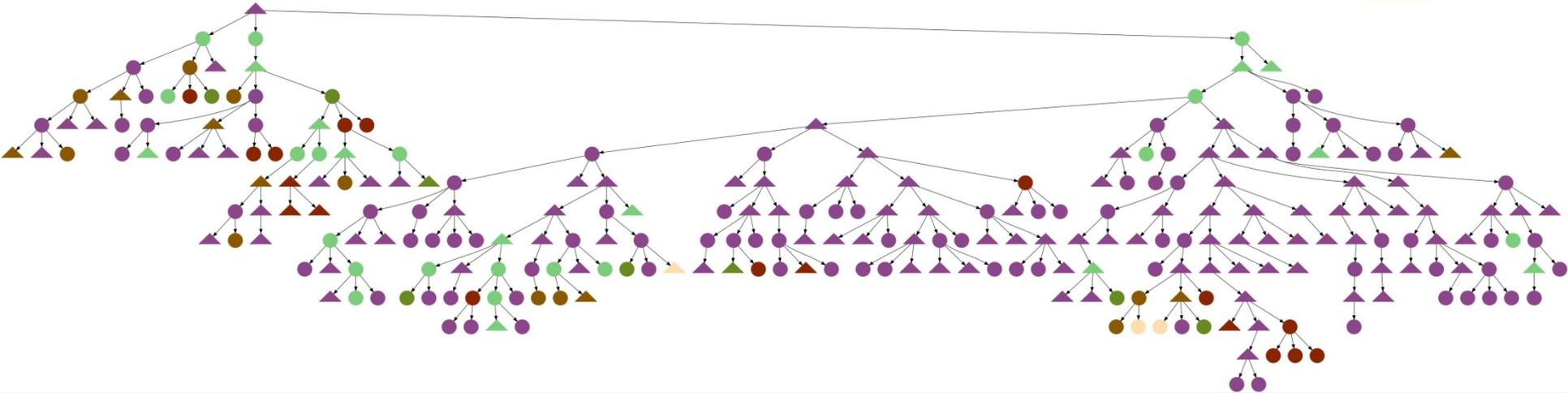
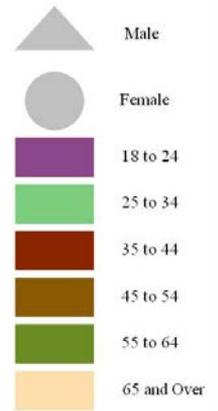
# Wave patterns by age groups

## Seed: Male, Filipino, 57 years old



# Wave patterns by age groups

## Seed: Male, Filipino, 24 years old



# Results: Language

		%
How comfortable do you feel speaking English?	Not/little comfortable	4.4
	Somewhat comfortable	4.3
	Very/completely comfortable	91.4
Do you speak any languages other than English?	Yes	66.4
	No	36.4*
In general, what language(s) do you speak?*	Native	6.0
	Native more than English	10.3
	Both Equally	45.5
	English more than native	32.7
	English	5.5

\* 2010 Census: 35% speak English only

# Health Information Sources

		%
Ever looked for information about health from any source?		78.4
Source	Internet	69.1
	Health Care Provider	11.3
	Family	4.9
Looked for information for	Myself	46.1
	Someone else	15.7
	Both myself and someone else	38.1

# Internet usage

Do you ever go on-line to access the internet or World Wide Web, or to send and receive email?

**Yes: 81.7%**

In the past 12 months, have you used the internet to look for health or medical information for yourself?

**Yes: 79.5%**

# Internet Use for Health Information

In the last 12 months, have you used the internet for:

	Yes (%)
Information about quitting smoking	12.8
Using website to help you with diet, weight, or physical activity	71.2
Visiting “social networking” site to read and share about medical topic	35.2
Participating in online support group for people with a similar health or medical issue	7.7
Find health or medical information for someone else	67.9

# Trust for Information Sources

In general, how much would you trust information about health or medical topics from

	Mean score (1-4)
A health care provider	3.6
Government health agencies	3.20
Internet	3.02
Charitable organizations	2.87
Family or friends	2.73
Newspapers or magazines	2.70
Television	2.69
Religious organizations	2.53
Radio	2.40

# Discussion issues

- Data collection procedure is more cost-effective and less time-consuming, compared to telephone surveys using RDD method and mail survey, but representativeness of sample needs to be considered
- Analysis of the relationship of HINTS items with relevant cultural variables is still ongoing
- HINTS results in Guam need to be compared with national HINTS patterns to determine differences, if any

Mahalo/ Si Yu' us Ma' ase