

# Cancer Risk in Individuals with Type 2 Diabetes and the Collaborative Development of the Ööqalat' Qa'tsit Yesni (Living a Strong Life) Curriculum



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# Agenda

**Background**

**Partnership / Workgroup  
Development**

**Asset Mapping**

**Module/Curriculum  
Development**

**Health Educator Training**

**Pilot Sessions and  
Dissemination**



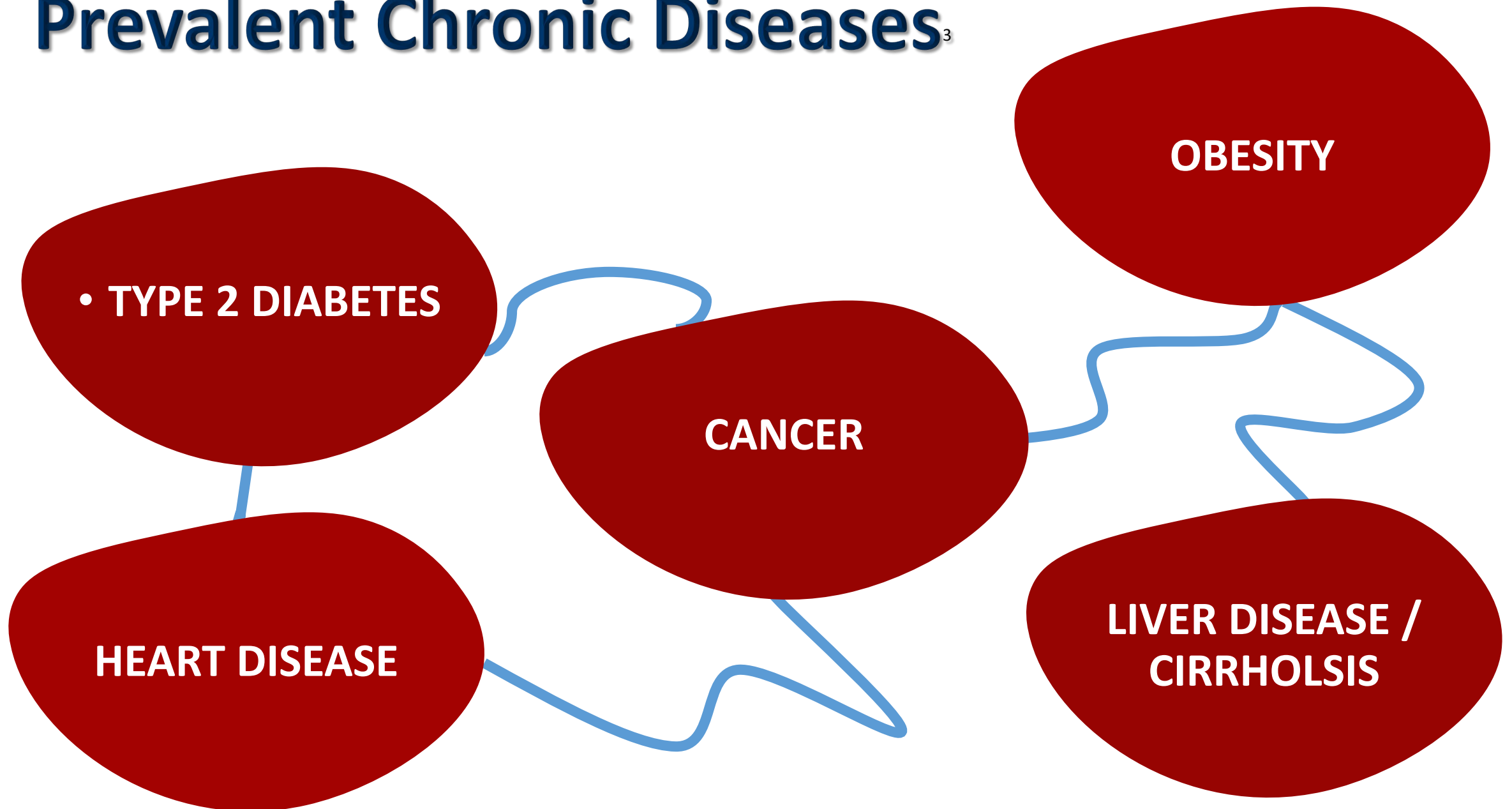
# Background

## CHANGES TO FOOD ENVIRONMENT AND LIFESTYLE<sup>1-2</sup>

- Erosion of traditional ways of life and community structure
- Drastic shift from wild food environments to built ones.
- Government Food Rations > supplemental food programs (FDPIR/Commodities).
- Food insecurity still a pressing concern.



# Prevalent Chronic Diseases<sup>3</sup>



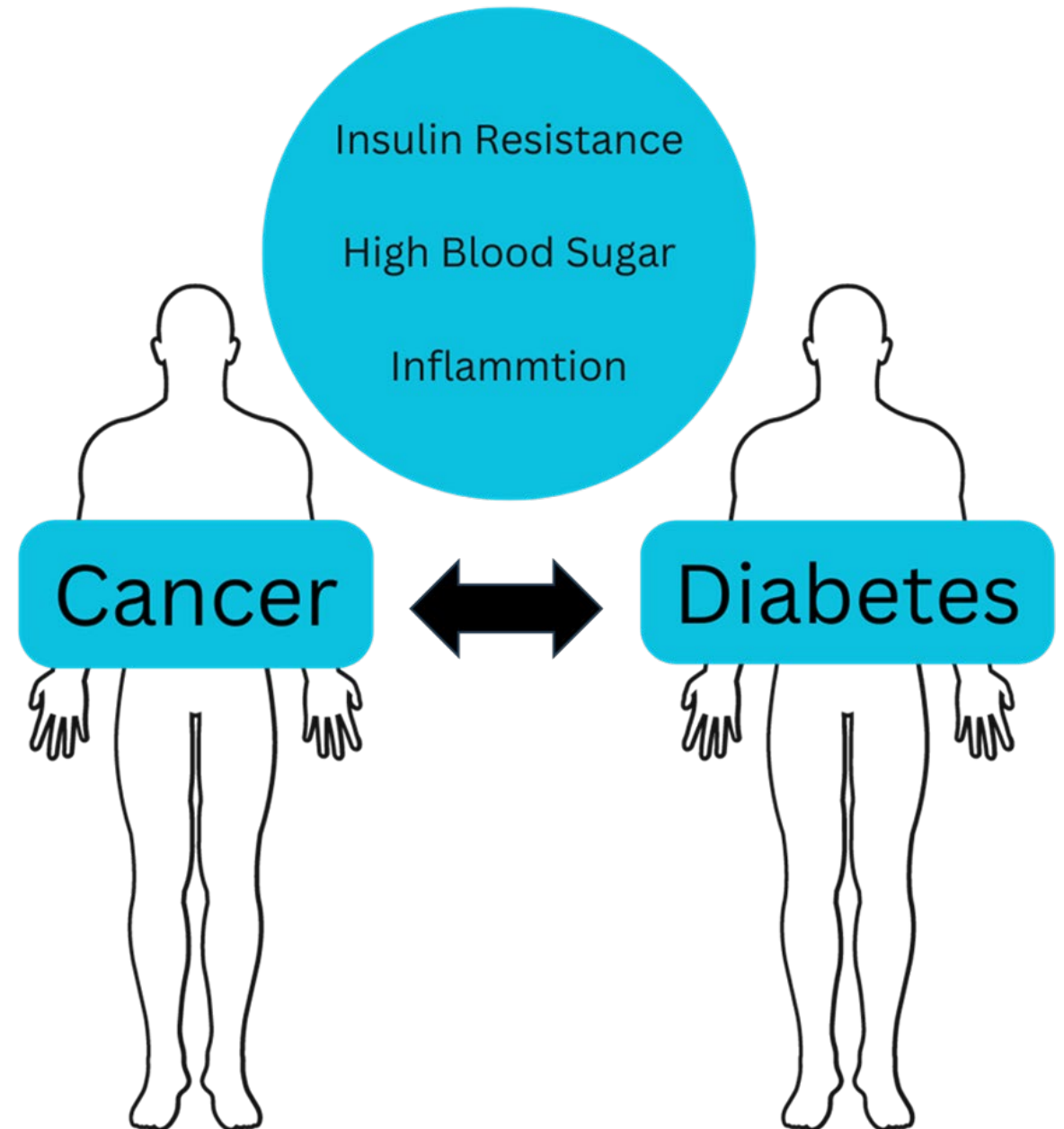
# Public Health Focus<sup>9</sup>

## Type 2 Diabetes

- Disproportionately high rates among Native Populations.<sup>5</sup>
- Increases risk for multiple chronic diseases, including multiple cancers.<sup>6</sup>

## Cancer

- Worse survival outcomes and Dx occurring at later stages of cancer.<sup>7</sup>
- Low screening rates<sup>8</sup>



2024

Standards of Care  
in Diabetes



## Special Diabetes Program for Indians

### SDPI Best Practices<sup>12</sup>



### Diabetes Education and Common Comorbid Conditions<sup>10</sup>

- Cardiovascular Disease
- Chronic Kidney Disease
- Diabetes-Related Eye Disease
- Neuropathy
- Foot Complications
- Skin Complications
- Oral Complications
- Hearing Loss
- Diabetic Ketoacidosis
- Stroke

### Cancer

**“Recommendations cannot be made at this time.”<sup>11</sup>**



Digital Image<sup>13</sup>

# Collaborative Development of the Ööqalat' Qa'tsit Yesni (Living a Strong Life) Curriculum



# Project Setting and Partnership Development

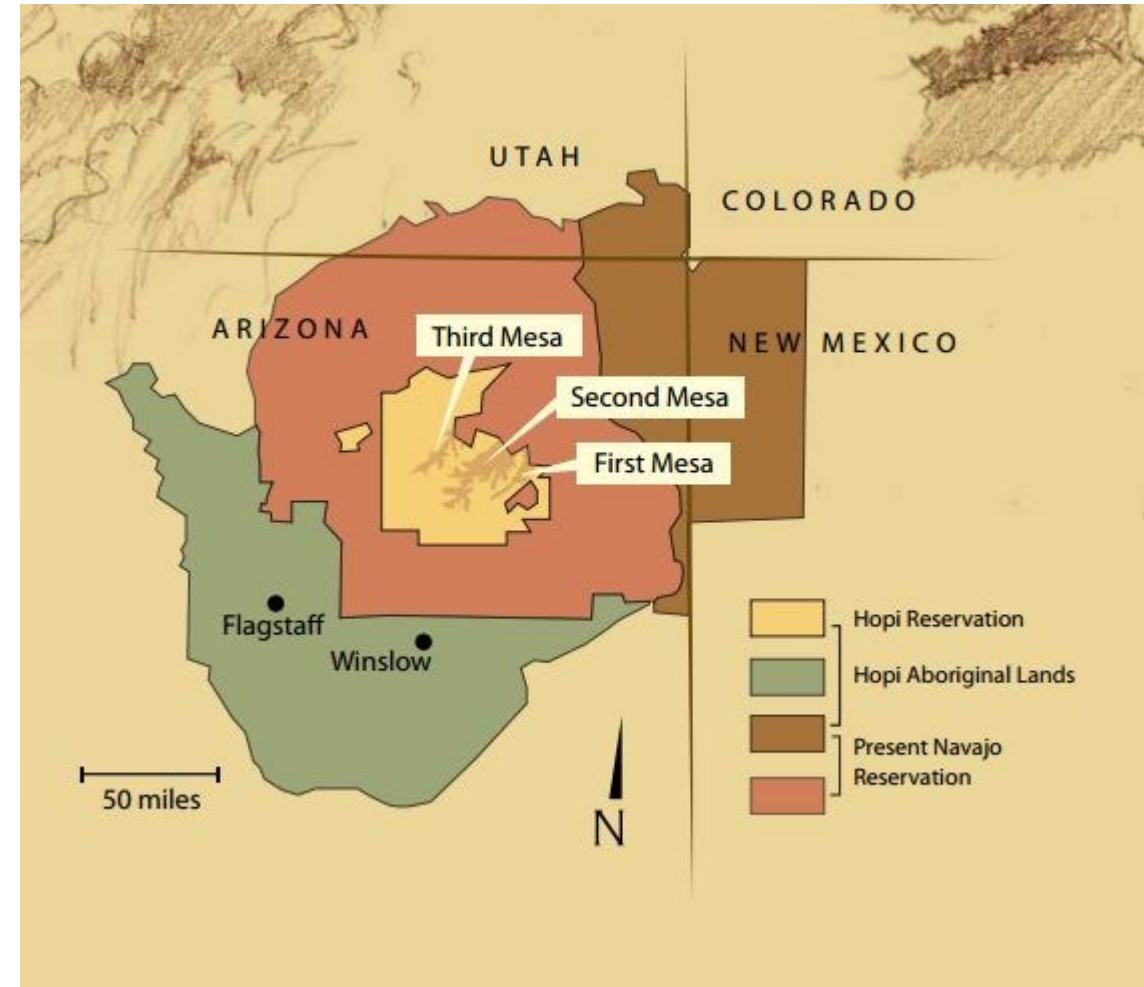
- Partnership development between NAU and the Hopi Tribe started Fall of 2022.
- Project workgroup established in January 2023 following approval from the Hopi Tribal Council Health Education and Research Committee.

## Aim 1

Determine key components of cancer prevention and T2D education and programming used by the local health programs.

## Aim2

Assess the feasibility, acceptability and knowledge gained by those with T2D who participate in the health education intervention.



## NAU – Center for Health Equity Research

Melinda Smith, Postdoctoral Scholar

Nicolette Teufel-Shone, Professor & Associate Director

## Hopi Department of Health and Human Services

Joyce Hamilton, Director

## Hopi Wellness Center

Elvia Sanchez, Manager

Laurynn Talayumtewa, Diabetes Prevention Educator

Andrea Siow, Physical Fitness Coordinator

Kaleena Kewanwylewa, Diabetes Prevention Educator

Sharon Mariano, Diabetes Coordinator

Sandra Ovah, Diabetes Prevention Educator

## Hopi Cancer Support Services

Dana Russell, Former Manager

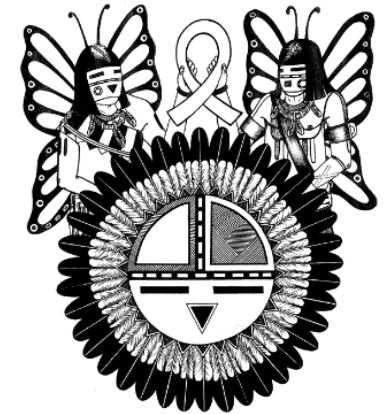
Kellen Polingyumtewa, Program Coordinator and Interim Manager

## Hopi Community Health Representatives Program

La’Nae Polingyumtewa, Community Health Representative

Charnel Talashoma, Community Health Representative

THE HOPI TRIBE



HOPI Cancer Support Services



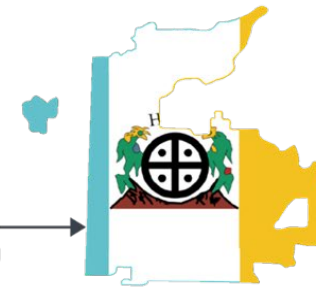
NAU

# Timeline

## Hopi Health & Edu. Committee Approval

Project team receives Hopi Tribal Council and Hopi Health and Education Comm. Approval.

JAN. 2023



### Hopi Community Assets for Health



## Community Asset Mapping

The project workgroup assessed relevant community assets and barriers

FEB. - APR. 23

## Curriculum Development

The project workgroup met 1 to 2 times a month to develop the curriculum.

MAY-OCT. 23



## Health Educator Training

The health educators completed two training sessions.

OCT. AND DEC. 23

## Pilot Sessions

Two cohorts completed the health education modules. Data Analysis

JAN. AND MAR. 2024



## Dissemination

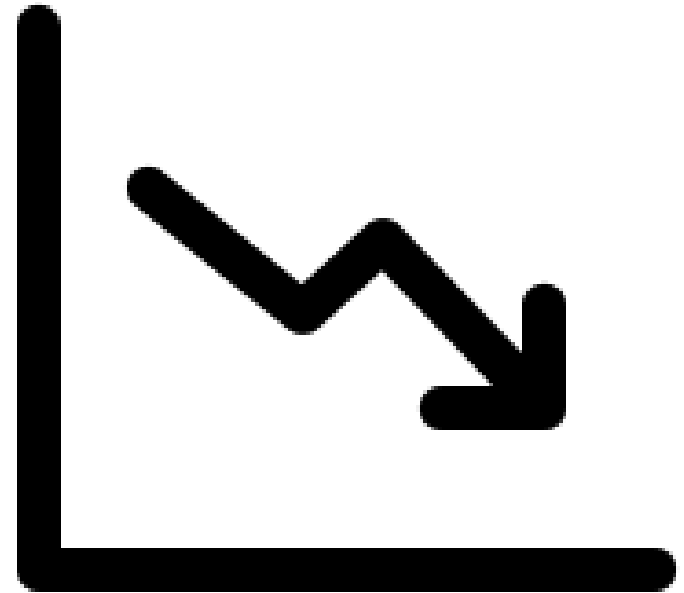
Codvelopment of two manuscripts. Local and National Presentations. Plans for Future Sessions Final Approval from Hopi Tribe

APR. - JUN. 24



# Project Goal

- The overarching goal of this health education curriculum is to reduce cancer risk among individuals living with type 2 diabetes or pre-diabetes on the Hopi Reservation.



# Objectives

## Primary:

- Increase knowledge about diabetes, cancer, chronic diseases, and risk factors among participants.
- Promote healthy lifestyle behaviors that aid in blood glucose and diabetes management, and cancer prevention.
- Help participants meet cancer screening and vaccination recommendations.
- Direct the participants to relevant resources.

## Secondary:

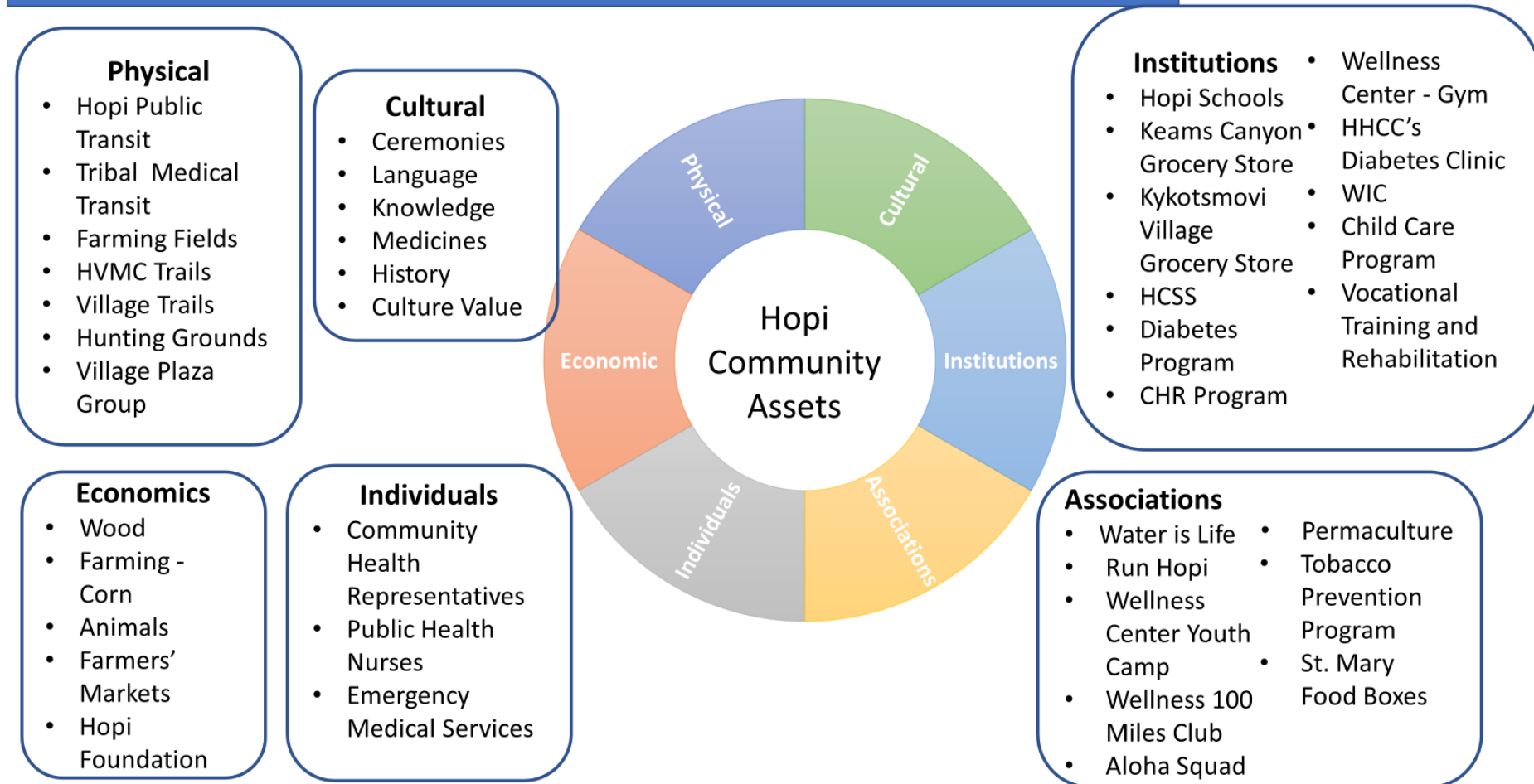
- Support the participating health programs in meeting their goals and objectives.
- Support collaboration among local health programs.

# Workgroup

- Comprised of staff, case managers, health educators, and Community Health Representatives.
- Guide the process of reviewing the local cancer and diabetes education materials / programming and related community assets.
- The workgroup played a critical part in the development, and piloting of the health education materials.
- Virtual and in-person meetings starting in January of 2023.

# Assessing Community Assets

## Hopi Community Assets for Health

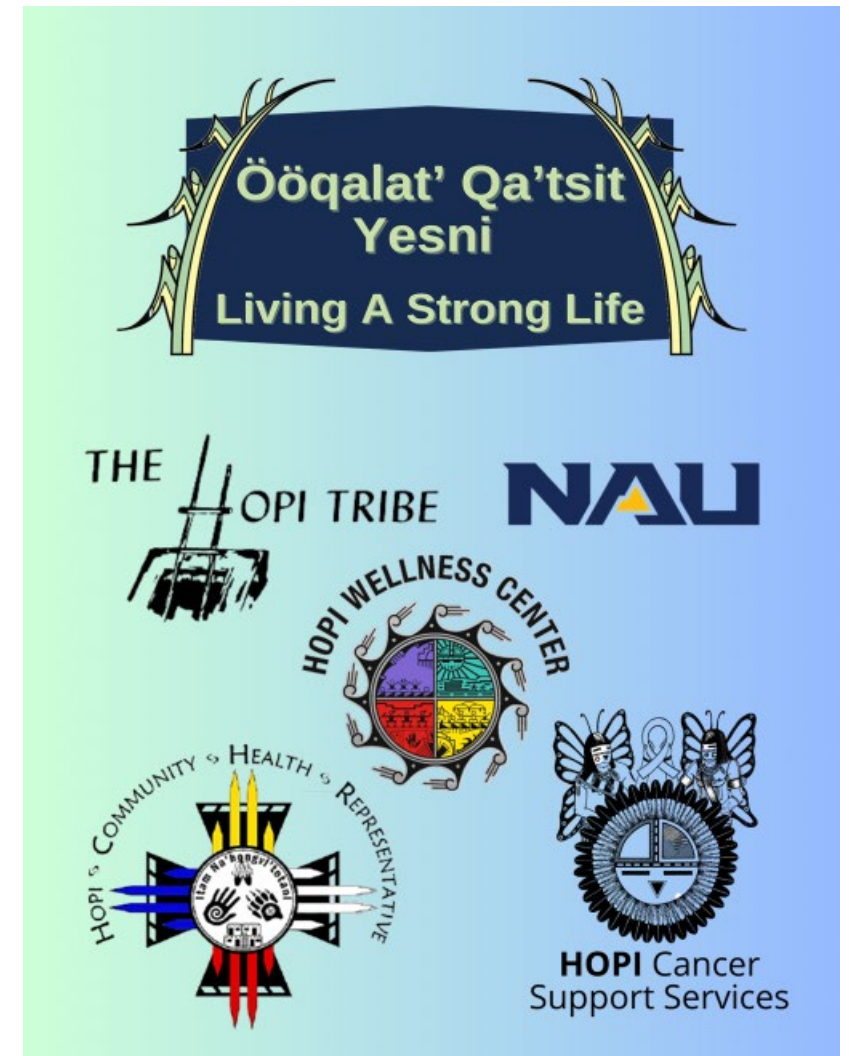


# Curriculum Development

## Module Overview

The Ööqalat' Qa'tsit Yesni health education curriculum has three modules. Each module was developed to be completed within one hour.

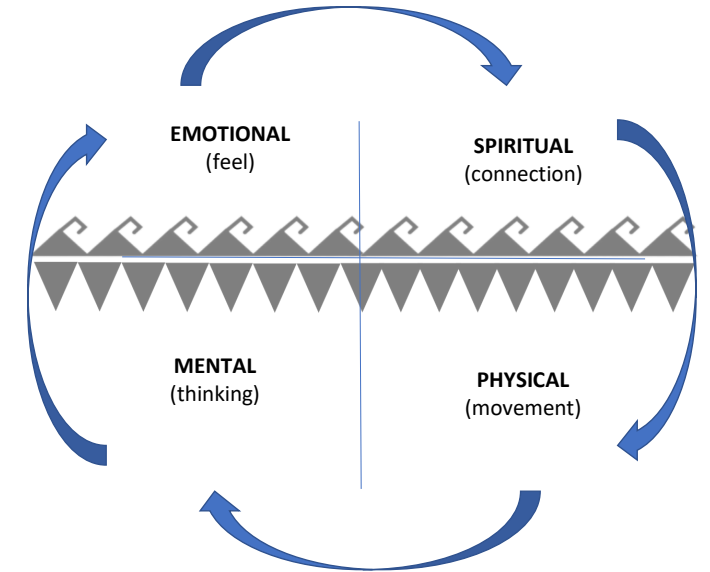
Module Title	Description
1. Chronic Disease	Module one includes a short introduction of the public health issue, and an overview of chronic disease, diabetes, cancer, the link between diabetes and cancer, and risk factors.
2. Prevention and Control	Module two focuses on recommendations to prevent and control cancer and diabetes. The topics include healthy behaviors, blood sugar management, traditional wellness, diabetes testing, cancer screening recommendations, and vaccination recommendations.
3. Resources and Support	Module three focuses on resources and advocacy. This module also includes a final review activity



# Interactive Activities

- Traditional Wellness Activity
- Chair Aerobics
- Nutrition Activities (e.g. Taste the Colors of the Rainbow)
- Recap Activity

Diabetes	
<b>Definition:</b> High Sugar Level High A1-C Not enough	<b>Risk Factors:</b> Dialysis Amputation Numbness Eating habits (Hot chips) Blindness Cramp-muscles Nutrition Stress Smoking drinking (Alcohol) minorities
<b>Protective Factors:</b> EXERCISE CHANGE EATING HABITS TESTING Eat healthy	<b>Screenings/test recommendations:</b> A1C Blood Testing Orange Dewar Test Fasting



Taste the Colors of the **Rainbow**

# Health Educator Orientation & Practice Sessions

Health Educators were guided through the Living a Strong Life Curriculum:

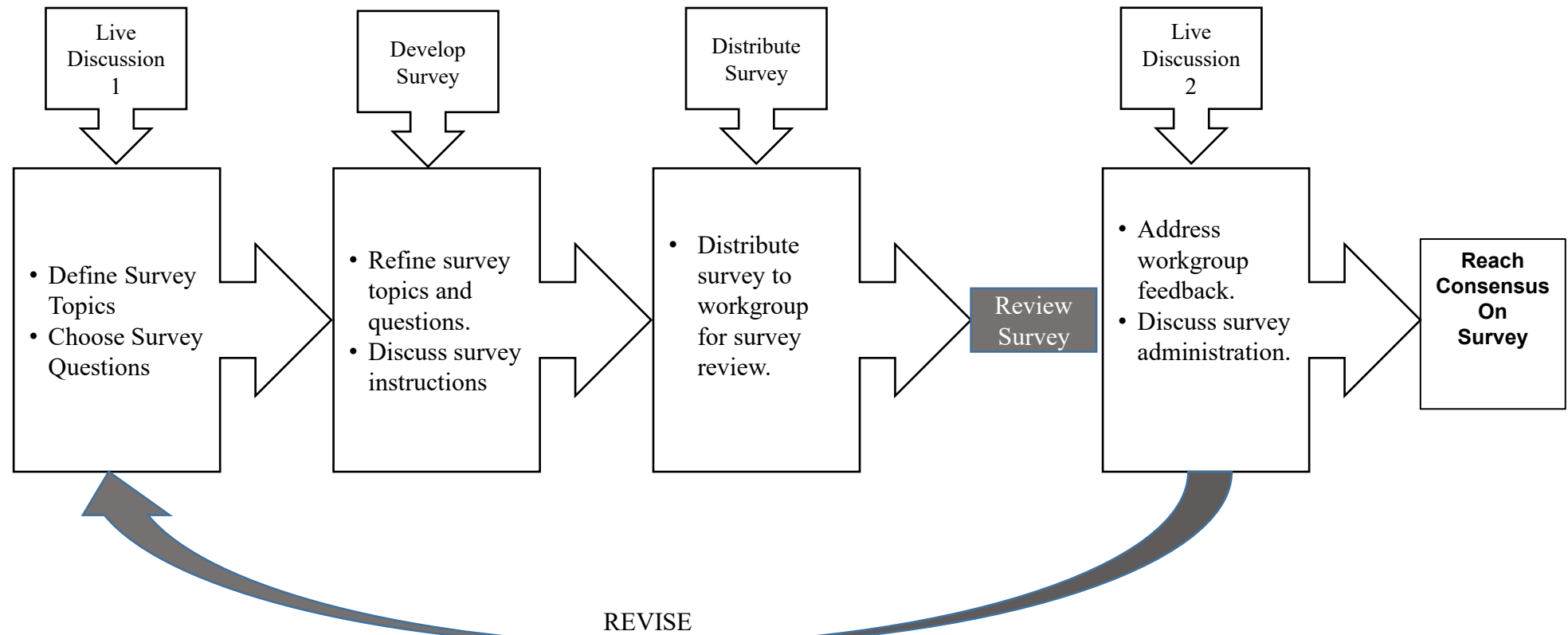
- Step-by-step guidance on different topics.
- informed consent and survey review.
- Pilot and practice interactive activities.



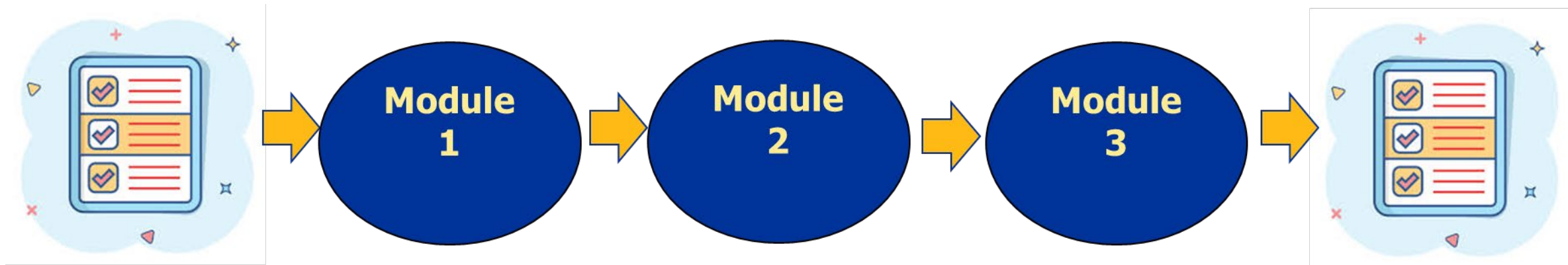
# Participants

- Two Cohorts.
- A purposive criterion sampling strategy
- Inclusion criteria: Diagnosed T2D or Pre-Diabetes, 18 - 75 yrs, lives on the Hopi Reservation, and identifies as Indigenous.
- Exclusion criteria: individuals <18 and > 75 yrs and non-Indigenous.
- Recruitment: Word of mouth, emails, mailed letters and/or flyers.

# Pretest / Posttest Survey Development



# Data Collection

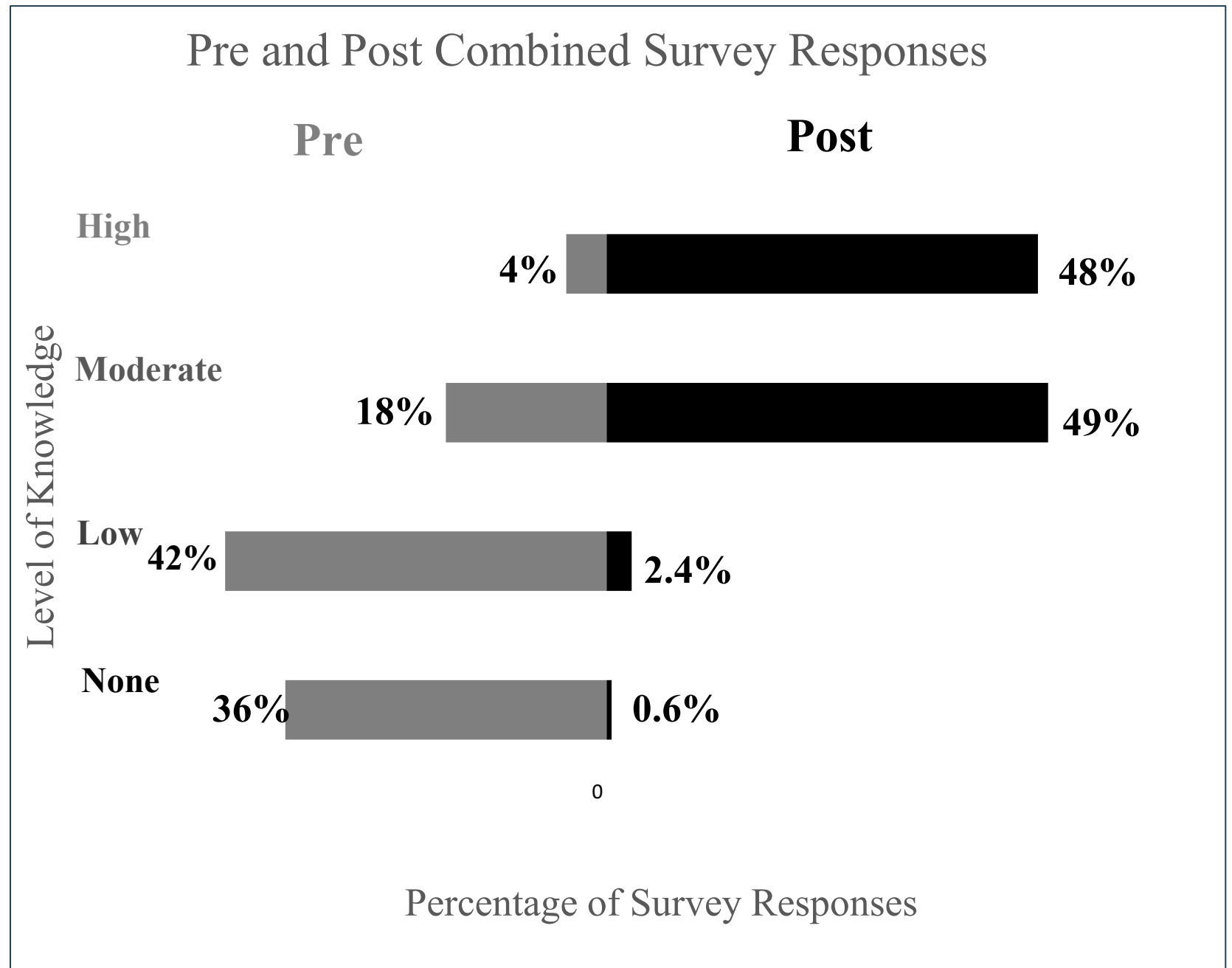


# Data Analysis

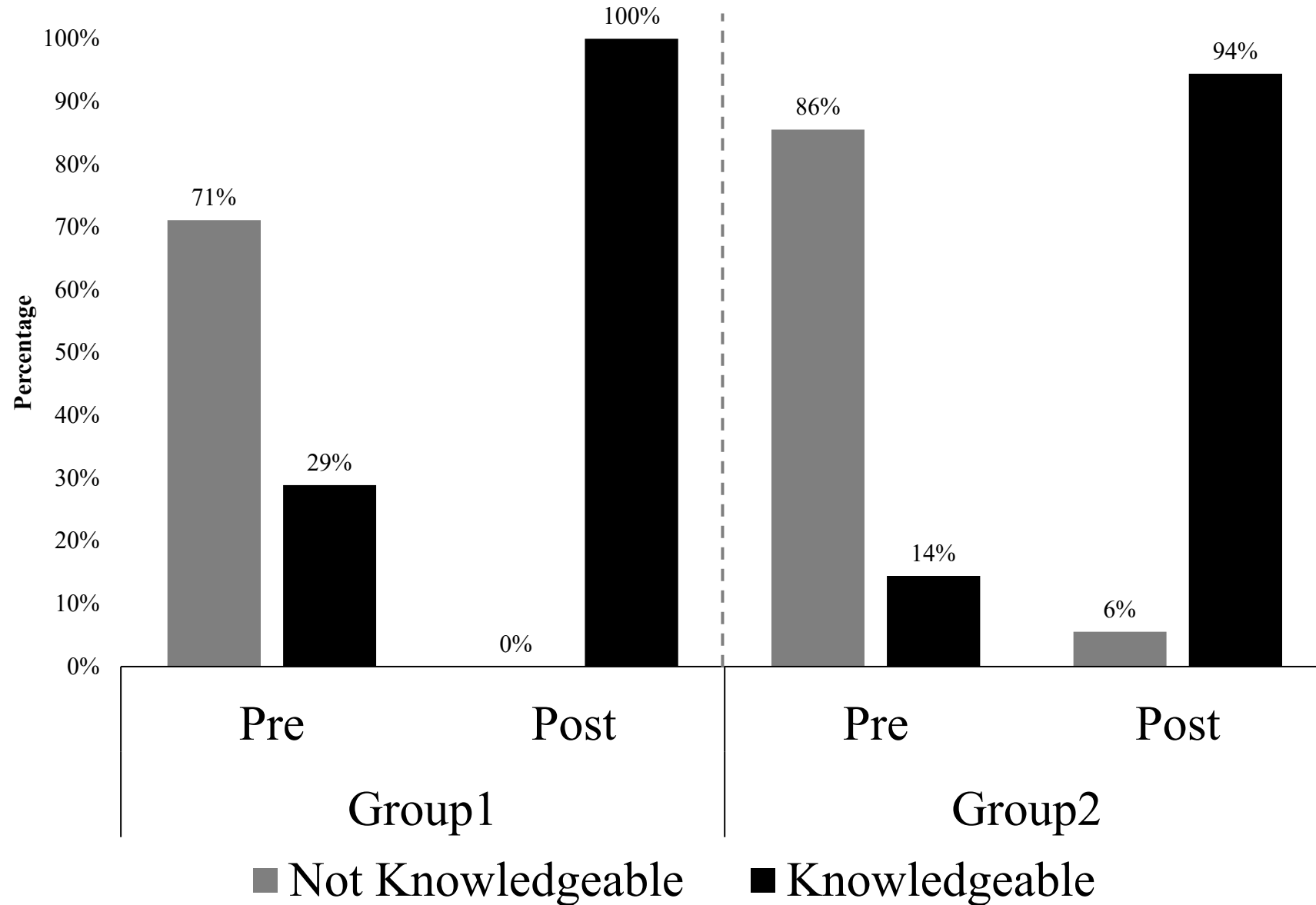


- McNamar's test > differences in pre- and post- intervention
- Mann Whitney U test > difference between the two groups.
- Thematic analysis

- All participants (n=10) had statistically significant higher post-knowledge scores ( $p < 0.05$ ) compared to their pre-knowledge scores<sup>17</sup>



# Pre and Post Dichotomized Survey Results By Group



No difference between the two groups.<sup>17</sup>

# Biggest Takeaways

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graph TD; A([Biggest Takeaways]) --- B[• Knowing Cancer Prevention and Early Detection Recommendations]; A --- C[• Understanding their Diabetes Diagnosis and Ways to Manage It]; A --- D[• Having the Knowledge to Share with Others]; A --- E[• Knowing their risk for Cancer]; A --- F[• Knowing the Risk and Protective Factors for Cancer and Diabetes]
```

- Knowing Cancer Prevention and Early Detection Recommendations

- Understanding their Diabetes Diagnosis and Ways to Manage It

- Having the Knowledge to Share with Others

- Knowing their risk for Cancer

- Knowing the Risk and Protective Factors for Cancer and Diabetes

# Suggestions for Improvement

- Increase Duration
- Invite other Healthcare Professionals
- Add topics and educational materials
- Advertise More
- More Visuals

- Common Medications
- List of Cancer Definitions
- Insulin



# Strengths and Limitations

## Limitations

- Small sample size.
- Diabetes and pre-diabetes status was not confirmed by medical records.
- Response-shift and social desirability bias.

## Strengths

- Combined Indigenous and Western knowledge.
- CBPR Approach
- All Indigenous Project Workgroup.
- Project supported and aligned with program goals and objectives.
- Increased collaboration among participating programs.

# Implications

- The Ööqalat' Qa'tsit Yesni Curriculum could be **adapted** and used by other tribal communities.
- This collaborative design process could aid in the development and implementation of other health promotion efforts in Indigenous communities.
- This project demonstrates the use CBPR and an effective community health partnership between tribal and an academic entity.



# Kwa'kwaa / Askwali

(Thank you)

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Q&A

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