RUTGERS
School of Nursing

The Use of Nutritional Knowledge Assessments to Guide Nutrition Teaching

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Introduction
o Nutrition is integral to the prevention of chronic disease, including diabetes and cardiovascular disease.
o The Office of Disease Prevention's *Healthy People 2020* initiative lists two goals related to nutrition:
   1) To increase the consumption of healthful diets and achieve healthy body weight.
   2) To increase physician office visits dedicated to nutrition counseling and education
o Yet, nutrition in primary care is minimally discussed between patients and providers.

Facts & Figures
o Just **13.8 %** of adult and child office visits **featured nutrition or diet counseling in 2010**.
o Of those adults **with cardiovascular disease, diabetes**, or **hyperlipidemia,** only **19.1 %** received **nutrition or diet counseling**.
o Healthcare providers point to **poor reimbursement rates** and the **structure of healthcare** as barriers to addressing preventative health measures, including balanced nutrition.
o **Obesity Trends**:
   • Prevalence of **obesity is 39.8** percent **in U.S**.
   • In 2016, **$1.1 trillion** spent on **chronic health**, including **nutrition-related disease.**
   • In NJ, approximately **27.3 % are obese** as of 2017 and **$2.2 billion** spent on **obesity health care** costs in 2009.

Project Focus
o This project focused on improving nutritional teaching and discussion during the primary care visit by:
   • Performing a **nutritional knowledge assessment** utilizing a Nutritional Knowledge Questionnaires for patients.
   • Identifying provider–described **barriers and attitudes to nutrition counseling** via a Likert scale survey.
   • Introducing teaching tools based on **nutritional knowledge gaps**

Project Design
o **Study Design**: Observational cross-sectional study taking place in a Primary Care Practice in Central New Jersey.
o **Population**:
   1) Adult patients (age 18 to 89) present for their primary care appointments [*Nutritional knowledge Questionnaire*]
   2) Practice site providers [*Likert Scale Barriers and Attitudes survey*]

o **Data Gathering Tools Used**:
   1) The validated and reliable **Nutritional Knowledge Questionnaire** (Kliemann, Wardle, Johnson & Croker, 2016; Parmenter and Warden, 1999).
      o Focuses on knowledge of nutrition recommendations and knowledge of food groups and nutrients.
   2) The Barriers and Attitudes Likert Scale, (based on Kushner, 1995; and Wynn, Trudeau, Taunton, Gowans and Scott, 2010).
      o Asks providers to rate barriers to nutritional counseling in primary care, including adequate time, reimbursement, patient compliance, and more.

Methodology
o Adult patients:
   ▪ Opportunity sampling
   ▪ Approached to complete Nutritional Knowledge questionnaire
   ▪ Goal of 100 subjects
o Practice providers:
   ▪ Approached for Barriers and Attitudes Likert scale survey
   ▪ 4 total providers
   ▪ Also asked to **estimate average patient score** on Nutritional Knowledge questionnaire

Results
Descriptive Statistics:
o There were 92 total participants for the Nutritional Knowledge Questionnaires
   ▪ 85 valid questionnaires; 7 incomplete.
o Average score was **62.58 percent correct** (standard deviation = 13.54).
o There were 49 females that completed the questionnaire and 36 males.
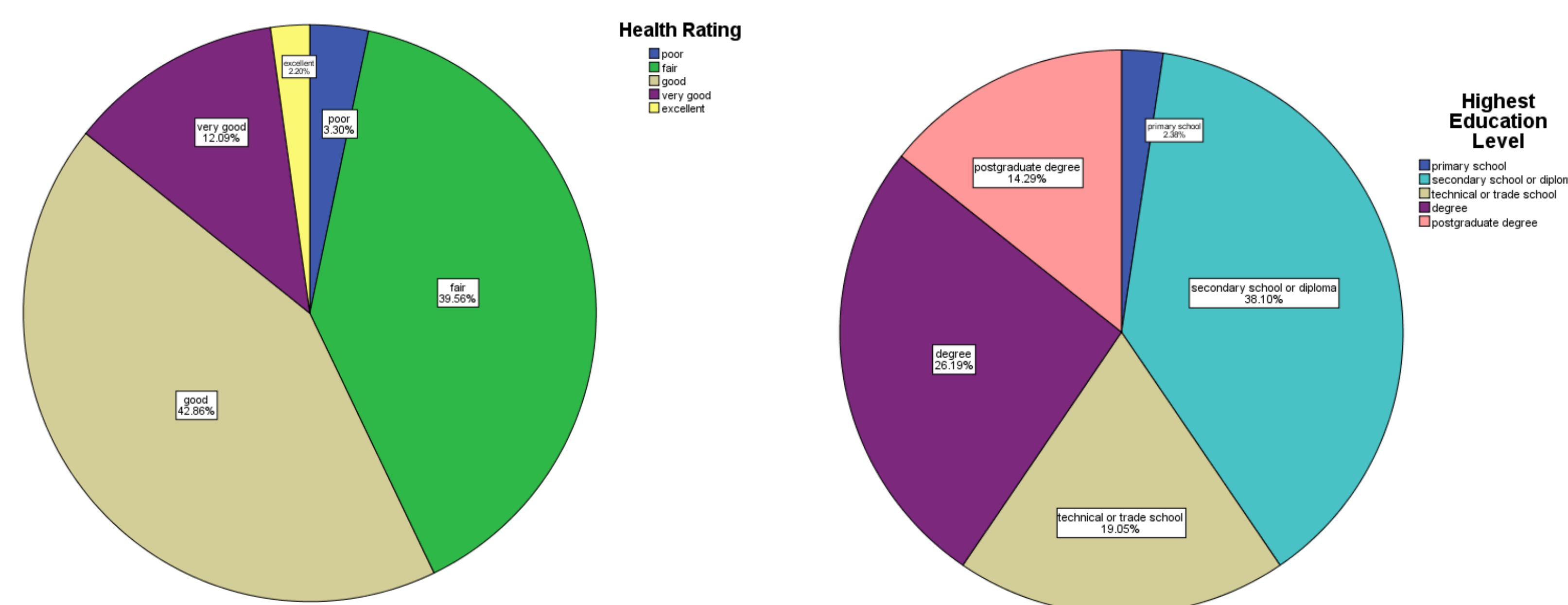
Data Analysis
o Scores on the questionnaires **increased** as the education level changed from secondary school or diploma to postgraduate degree.
   ▪ A **positive association** was found (p= 0.037, Spearman's Rank order correlation coefficient =.205).

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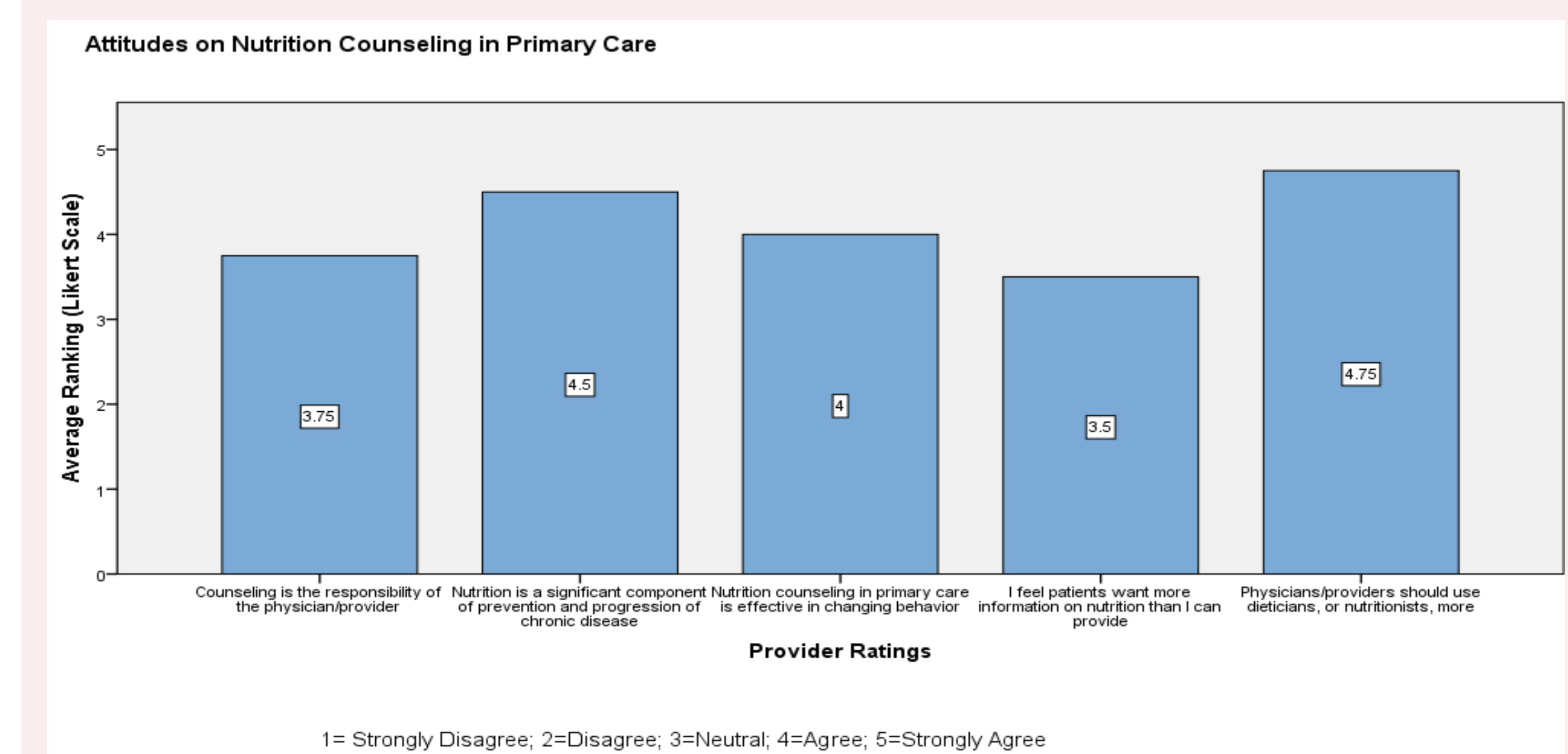
Nutritional Knowledge Gaps:
o Identified **knowledge gaps** (based on question score ≤ 33 % correct):
   ▪ Daily recommended servings of fruits or vegetables
   ▪ Unhealthiness of transfat
   ▪ Levels of sodium in processed foods
   ▪ Types of fats in certain foods (polyunsaturated, monounsaturated, saturated fat, and cholesterol)
   ▪ Association of fat and calories
o **Single** patients obtained higher average scores on the knowledge gap questions, while separated and divorced patients had the lowest scores.
   ▪ A Kuskal-Wallis test showed a **significant difference** (chi square = 12.232, df = 5, p= .032).
o Higher education level was **positively correlated** with the number of correct answers on the knowledge gap questions
   ▪ (p=.013; Sp Rank Order Correlation Coefficient = .251).
o **Positive association** between higher scores on the overall questionnaire and higher scores on knowledge gap questions

Provider Data:
o Prevalent barriers: *Lack of Time; Knowledge About Nutrition*
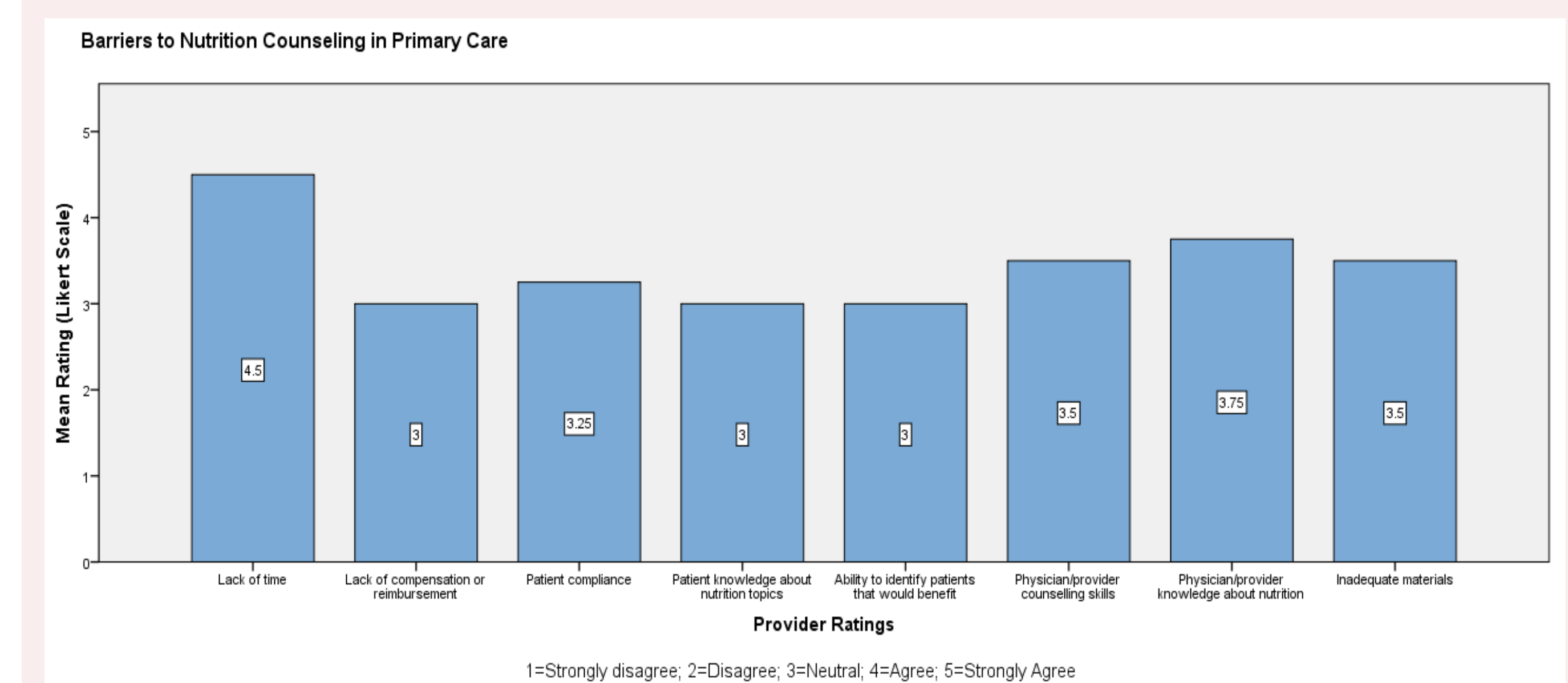
o Prevalent attitudes: *Should use more dieticians; Nutrition is significant component of prevention; Nutrition Counseling affects Dietary Behavior*

o Providers underestimated scores on Nutritional knowledge Questionnaire (predicted: 20 %, 35%, "10-15%"; Actual: 62.58 %).

Practice Enhancements:
o Targeted teaching tools used from the CDC, ODPHP, and the AHA.
o Providers acknowledged barriers, attitudes, and role of nutrition.