# Gender and Age Differences in Diabetes Self-Management Practices

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## Introduction

- Diabetes was the seventh leading cause of death in the United States.
- 29.1 million people living with diabetes.
- 21 million people are currently diagnosed with diabetes.
- 8.1 million people living with the disease are undiagnosed
- $176 billion was spent on direct diabetes medical cost.
- $69 billion on indirect diabetes medical costs on people living with a chronic diabetes condition in 2012.

## Background

- Diabetes requires effective self-management practices and monitoring of blood glucose levels to reduce complications.
- Researchers have established that challenges exist for diabetics to implement effective self-management practices.
- The nature of these challenges depends on race, age, gender and socio-economic status.

## Purpose

- This study elucidated the complex relationship between gender, age, the duration of diabetes illness, and adherence to diabetes self-management practice.
- Although some relationships between demographic characteristics and adherence to self-management practices have been investigated, the relationship between gender, age and self-monitoring of blood glucose levels and other self-management practices is poorly understood.

## Research Questions

- 1. What is the relationship between gender and adherence to diabetes self-management behaviors including: (a) availability of fruit and vegetables at home?; (b) availability of salty snacks and soft drinks at home? (c) frequency of physical activity?; (d) frequency of blood glucose monitoring?; (e) frequency of routine visits to a physician?
- 2. Are the relationships between gender and diabetes self-management behavior moderated by age?
- 3. Are the relationships between gender and diabetes self-management behavior moderated by duration of diabetes illness?
- 4. What is the relationship between diabetics' perceived health status (perceived benefit in the health belief model) and their adherence to diabetes self-management practice (outcome behavior)?
- 5. What is relationship between diabetics' level of physical, psychological, and emotional disability (perceived barrier) and their adherence to diabetes self-management practice (outcome behavior)?

## Methods

- This cross-sectional study used data from the 2009-2012 United States National Health and Nutrition Examination Survey (NHANES) to analyze the relationships between age, gender, duration of diabetes illness, an individual's perception of one's own health, fruit and vegetable consumption, physical activity, and other diabetes self-management practices in the United States.
- Moderated linear and logistic regression was used to analyze these relationships.

## Results

**Research Questions 1, 2, & 3**

- No statistically significant effects of age, gender, or duration of illness on fruit availability at home.
- No statistically significant effects of age, gender, or duration of illness on dark green vegetable availability at home.
- No statistically significant effects of age, gender, or duration of illness on the availability of soft drink at home.
- Female diabetics were more likely to visit a physician frequently.
- No statistically significant effects of age, gender, or duration of illness on blood glucose measurement.

**Research Questions 4, & 5**

- No relationship between disability status and availability of fruit at home or the availability of dark green vegetables at home.
- Those who experienced disability were more likely to have salty snacks available at home.
- No statistically significant relationship between disability status and blood glucose monitoring.
- Those diabetics who experienced disability were more likely to have more frequent appointments with a physician.
- Worse perceived health status was associated with more frequent blood glucose measurement.
- Better perceived health status was associated with more frequent consumption of salty snacks.
- No relationship between perceived health status and fruit and vegetable consumption at home.

## Discussion

- Relationship between gender and frequency of visits to a physician in diabetics is supported by previous research and can be accounted for by psychological and physiological differences between genders.
- The relationship between disability and increased likelihood of having salty snacks available at home may be attributable to psychological and physical barriers to diabetes self-management.
- The relationship between worse perceived health status and more frequent blood glucose monitoring is congruent with the Health Belief Model (HBM).
- The relationship between worse perceived health status and salty snack consumption is not congruent with the HBM model.

## Conclusion

- Age differences can predict diabetes self-management practice.
- There is a relationship between diabetics' perceived health status (perceived benefit in the health belief model) and their adherence to diabetes self-management practice.
- There is a relationship between diabetics' level of physical, psychological, and emotional disability (perceived barrier) and their adherence to diabetes self-management practice.