Literacy, Knowledge, Health Beliefs, and Self-efficacy among Urban, Low-income, Obese African American Women

Feleta L. Wilson, PhD, RN[1]
May T. Dobal, PhD, RN[2]
Cheryl Nordstrom, PhD[1]
Cheryl Schram, AAS[1]

[1]Wayne State University College of Nursing
[2]New York University College of Nursing

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Purpose of the Study

- The purpose of the study was to examine the relationships among the factors of literacy, knowledge, health beliefs, and self-efficacy among obese, low-income, African American women.

- **Research Questions:**
    - **Is there a relationship between highest grade completed in school and actual reading skills?**
    - **Is there a relationship among literacy level, knowledge about obesity and exercise, health beliefs about obesity and exercise, and self-efficacy to cope with difficulties in life?**

Background

- Obesity is recognized as a major threat to the health and well-being of the general population.

- The consequences of obesity are devastating for African American women, because obesity is the precursor to diabetes, hypertension, and cardiovascular disease.

Background (continued)

Barriers to Weight and Exercise management:

- Women who live in urban environments face physical and safety issues.

- Limited availability of healthy, affordable food choices for low-income individuals.

- Health beliefs about weight and exercise differ for African American women.

Methods

- Significance
  - Obesity was a major health concern for both staff and patients.
  - The Health Center was located in the neighborhood, easily accessible, and familiar.
  - The Health Care Providers (Physicians, Nurse Practitioners, Physician Assistants, and Nutritionist) were trusted.
- Setting of the Study
  - Federally Qualified Health Center
  - Located in Detroit
  - Two sites (one on the east side and the other on the west side of the city)

Research Design and Setting

- A descriptive cross-sectional design was used.

- The project was a collaborative effort between the Wayne State University College of Nursing and Detroit Community Health Connection, a federally qualified health center that provides care to uninsured and under-insured residents in medically underserved areas.

Instruments

- REALM Literacy Test
- Demographic Profile
- Knowledge about Obesity and Exercise

   obesity $\alpha = .86$, range=19-55
   exercise $\alpha = .57$, range=24-55

- Self-efficacy Scale

   $\alpha = .89$, range 24-50

- Health beliefs about Obesity and Exercise

   susceptibility $\alpha = .85$, range=5-25
   seriousness $\alpha = .69$, range=12-39
   benefit $\alpha = .76$, range=5-25
   barriers $\alpha = .70$, range=7-33
   motivation $\alpha = .70$, range=8-40

Results

- **Characteristics of the Participants**
  - 89 women were recruited
  - Between 21-60 years of age
  - Average REALM score: 63 (SD=5), which is equivalent to high school grade level
  - Self-report of highest grade completed: 12th grade
  - Mean BMI: 41 (SD=7.1)

Literacy Results

- Literacy was significantly correlated to knowledge about exercise ($r=0.28$, $p=.01$).

- Literacy was unrelated to knowledge about obesity ($r=0.14$, $p=.20$).

Self-efficacy and Knowledge

The relationships between self-efficacy and (1) exercise; (2) combined knowledge about obesity and exercise; and (3) health beliefs about susceptibility in women with high self-efficacy vs. women with low self-efficacy were mixed.

- Self-efficacy & Exercise
  <u>M</u>=43, SD=6.6 **vs**. <u>M</u>=41, SD=3.5;   <u>t</u>=1.94, ns
- Self-efficacy & Combined knowledge about obesity and exercise
  <u>M</u>=88, SD=12.3 **vs**. <u>M</u>=83, SD=6.6;   **<u>t</u>=2.14, p=.04**
- Self-efficacy & Health beliefs about susceptibility
  <u>M</u>=21, SD=4.0 **vs**. <u>M</u>=20, SD=4.2;   <u>t</u>= 1.83, ns

See Figure 1

Figure 1. Mean Exercise Knowledge, Total Knowledge, and HBQ Susceptibility Scale Scores by Level of Self-Efficacy
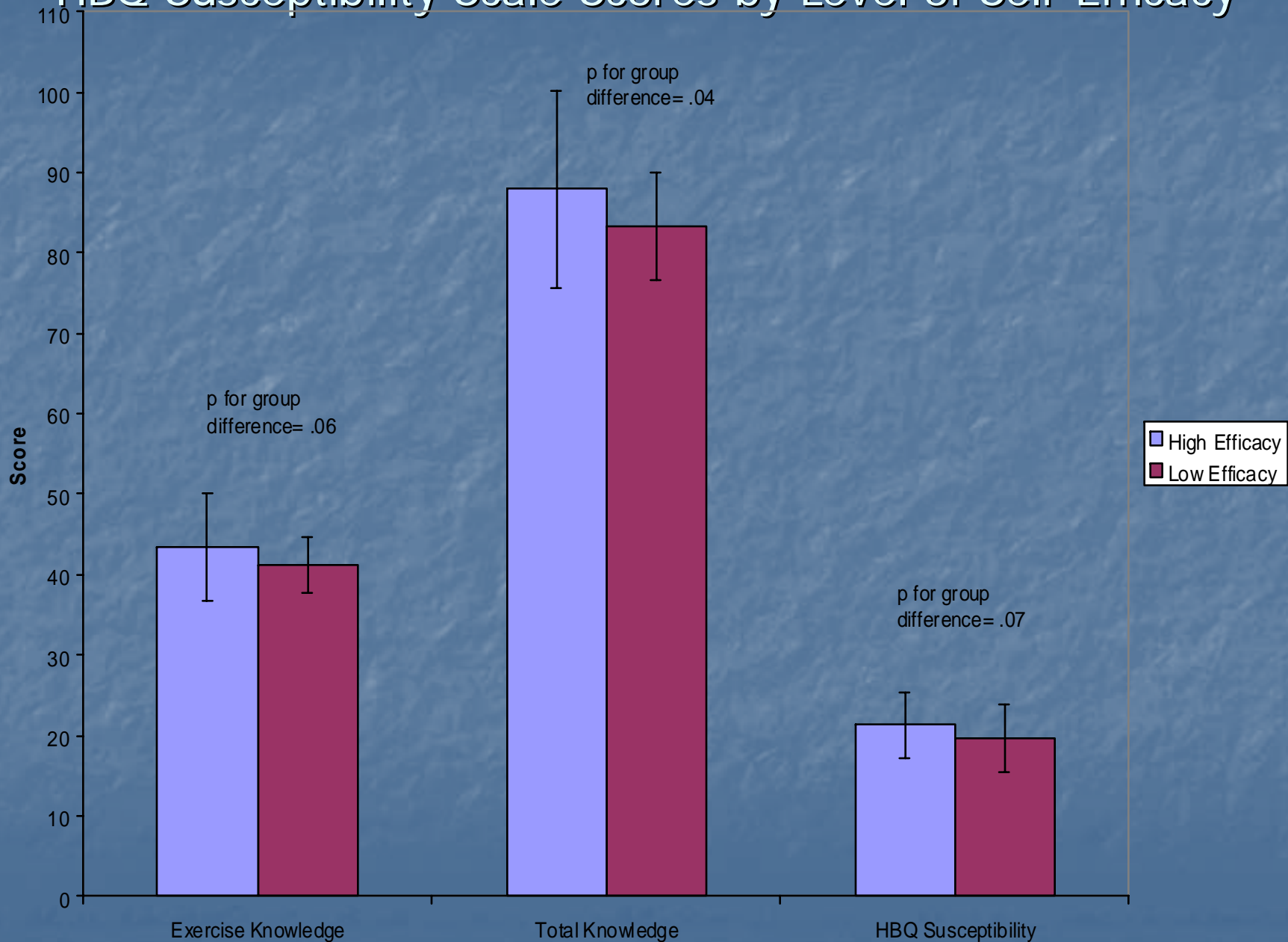
Knowledge and Health Beliefs

- Knowledge about obesity was significantly related to subscales of the Health Belief Questionnaire including
  - Barriers $r=.30, \underline{p}=.0004$
  - Susceptibility $r=.45, \underline{p}<.0001$
  - Total Health Belief Score $r=.56, \underline{p}<.0001$

See Table 1

	Obesity Knowledge	Exercise Knowledge	Combined Knowledge
HBQ Barriers	0.30*	-0.15	0.14
HBQ Susceptibility	0.45**	0.30*	0.49**
HBQ Total	0.56**	0.14	0.49**

* $p \leq 0.01$
**$p \leq 0.001$

Table 1. Spearman correlation coefficients between knowledge and Health Belief Questionnaire (HBQ) subscales

Lessons Learned

- Challenges of an academic and community - based project
  - Location, location, location
  - Academic culture and time
  - "Real world" and health center culture and time
  - Budgetary issues

Implications for Healthcare Professional

- Nurses need better understanding of the beliefs, knowledge, and self-efficacy related to weight and exercise management.

- Design and develop weight management and exercise programs specifically to meet the needs of low-income, obese, African American women.