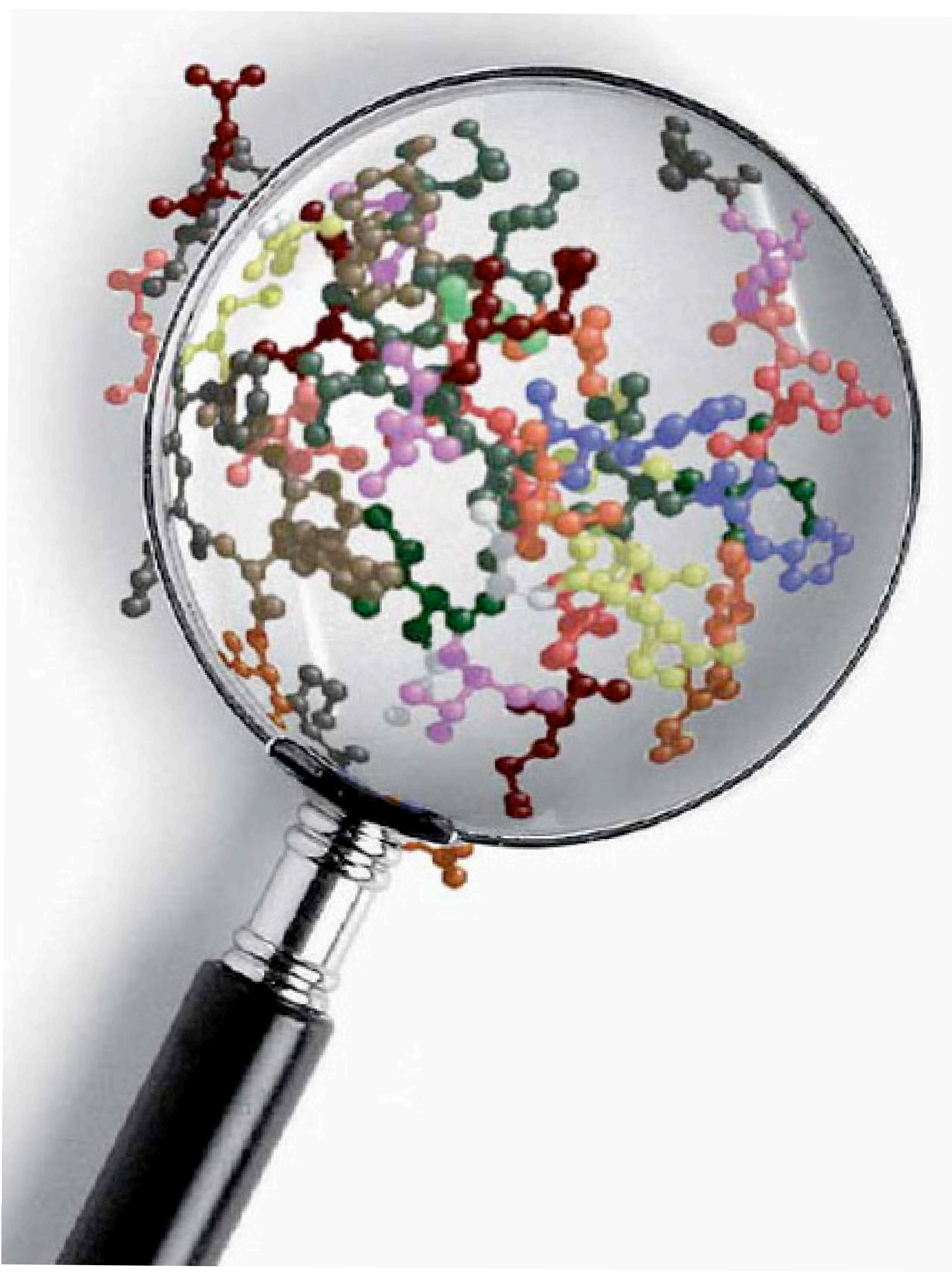


# Empowerment, Social Support, and Glycemic Control: Does a Relationship Exist?

Lynne Derezinski, RN, BSN  
Advisor: Dr. Roxana Huebscher,  
PhD, FNPC, AHNC, CMT



## Introduction

- \*Type 1 Diabetes Mellitus (DM) accounts for 5 to 10 percent of the population with DM.
- \*DM is one of the leading causes of death and disability in the United States
- \*Maintaining tight control of glucose levels can prevent or lessen complications

## Research Question

Does a relationship exist among empowerment, social support and glycemic control in adult patients with type 1 diabetes mellitus?

## Hypothesis

Participants with higher levels of diabetes empowerment, higher levels of social support, and higher levels of both will experience better glycemic control than those with lower levels of diabetes empowerment and/or social support.

## Theoretical Framework

Dorothea Orem's Self-Care Model

## Method

### Design

Descriptive, correlational

### Sample and Setting

- \*convenience sample of 7 participants
- \*obtained from one central Wisconsin family practice clinic.

## Data Collection Instruments

Three surveys:

1. A demographic questionnaire including background information and last Hemoglobin A1c (HbA1c) result.
2. The Diabetes Empowerment Scale Short Form (DES-SF), an 8-item measurement of diabetes-related psychological skills. Items are rated on a 5-point Likert scale. A score of 1 corresponded to "Strongly Disagree" and 5 corresponded to "Strongly Agree."
3. Norbeck's Social Support Questionnaire (NSSQ), a 9-item measurement of multiple components of social support. Items are rated on a 5-point Likert-like scale. A score of 0 corresponded to "not at all", 1 "a little", 2 "moderately", 3 "quite a bit", and 4 "a great deal."

## Results

**Table 1**  
*HbA1c levels, Demographic Data and Survey Scores*

Participant	1	2	3	4	5	6	7	Mean
HbA1c	6.7	6.6	8.5	6.3	8.3	9.7	7.3	7.6
Gender	female	male	female	male	Male	male	male	
Age	52	57	52	39	74	19	66	51
Race	White	White	White	White	White	White	White	
Years with Diabetes	42	50	41	2.5	30	15	38	31
Marital Status	Married	Never Married	Married	Married	Married	Never Married	Married	
Insulin Administration	Injection	Pump	Pump	Pump	Pump	Pump	Pump	
Education	Some college	Graduate degree	Some college	Some college	High school graduate	Some college	Graduate degree	
Mean Empowerment Score	4.5	4.375	4.75	2.25	5	2.25	4.125	4.535
Total Functional Support Score	3.625	3.52	3.212		3.795	2.195	3.6	3.324

## Conclusions

- 1) No significant relationship existed between empowerment and HbA1c ( $r = 0.390$ ,  $p = 0.388$ )
- 2) No significant relationship existed between total functional support and HbA1c ( $r = -0.677$ ,  $p = 0.140$ ).
- 3) An inverse relationship existed between empowerment and total functional support ( $r = -0.868$ ,  $p = 0.025$ ).
- 4) A positive relationship existed between emotional support and tangible aid ( $r = 0.953$ ,  $p = 0.003$ ).
- 5) Family and relatives as well as health care providers were the most widely recognized individuals providing social support for participants.

**Table 2**  
*Correlation Between Empowerment, Social Support and HbA1c*

		HbA1c	Functional Support	Empowerment
HbA1c	Pearson r	1	-0.677	0.390
	Sig (2-tailed)	7	0.140	0.388
	N	6	6	7
Functional Support	Pearson r	-0.677	1	-0.868*
	Sig (2-tailed)	0.140	6	0.025
	N	6	6	6
Empowerment	Pearson r	0.390	-0.868*	1
	Sig (2-tailed)	0.388	0.025	7
	N	7	6	7

\* correlation is significant at the 0.05 level (2-tailed)

## Limitations

- 1) Small sample size
- 2) Age range for inclusion limited the pediatric type 1 diabetes mellitus population
- 3) Sample homogeneity
- 4) Sampling bias
- 5) Selection bias
- 6) Location and timing of survey completion
- 7) Survey instruments.

## Recommendations for Future Research

1. Replicate the study with a larger sample size
2. Replicate the study utilizing publicity for study promotion.
3. Replicate the study to include the pediatric population in the sample.
4. Replicate the study utilizing more than one clinical site, in a variety of rural and metropolitan locations
5. Replicate the study utilizing more simplistic survey tools
6. Replicate the study utilizing diabetes specific social support scales
7. Replicate the study with researcher present during the completion of the surveys to assure completeness.
8. Utilize a qualitative study to identify how patients with type 1 diabetes maintain glycemic control including lifestyle components such as income, socioeconomic status and location of residency.
9. Replicate the study comparing the pediatric DM population with the adult DM population related to empowerment, social support and glycemic control.
10. Utilize a qualitative study to identify the role health care providers play in the support of patients by asking specific questions about the ways providers help in diabetes management and hinder diabetes management.