



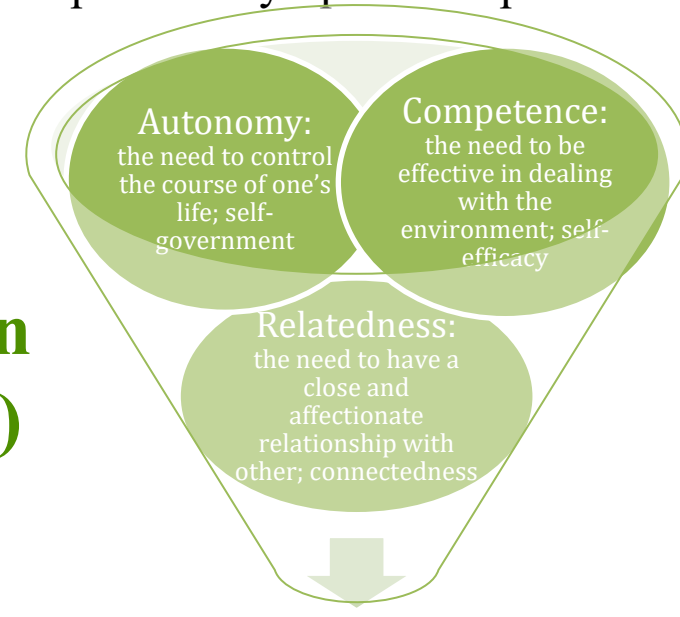
# The Relationship Among Depression, Motivational Factors, and Diabetes Management in Emerging Adults with Type 1 Diabetes

Elmenini, S., Idalski Carcone, A., and Ellis, D.  
WSUSOM, Department of Family Medicine and Public Health Sciences

## INTRODUCTION

- Type 1 Diabetes (T1D) is a chronic illness that requires constant monitoring, care, and attention to three key areas:
  1. Monitoring blood glucose
  2. Taking insulin
  3. Diet management (counting carbohydrates)
- Emerging Adulthood (EA) is a developmental stage between adolescence and adulthood
- EAs developmental tasks:
  - developing one’s own unique identity
  - establishing autonomy, executing decisions and forming independence, self-efficacy
  - developing relationships beyond the immediate family, relatedness
- EAs are at a stage of life where the focus on developmental tasks creates opportunities for competing demands, and diabetes often loses the battle for attention
- Since the start of the COVID-19 pandemic, depression rates have been on the rise, leading to renewed interest in how depressive symptoms impact health

### Self-Determination Theory (SDT)



Intrinsic Motivation:  
actions driven by intrinsic (internal or personal) rewards

## OBJECTIVES

•To assess the degree to which depressive symptoms are associated with motivational factors (autonomy and self-efficacy) and diabetes management in emerging adults with type 1 diabetes and an elevated hemoglobin A1c

- H<sub>1</sub>: The higher participants score on the depression scale (CES-D), the lower they will score on measures of autonomy (RAI) and self-efficacy (DES and PHCS)
- H<sub>2</sub>: The lower participants score on autonomy (RAI), the lower they will score on self-efficacy (DES and PHCS)
- H<sub>3</sub>: The lower participants score on autonomy and self-efficacy, the worse their diabetes management will be (DMS)
- H<sub>4</sub>: The worse participants diabetes management (low DMS score) is, the worse their glycemic control (HbA1c) will be

### Theoretical Model



## METHODS

### Design:

- Data used was collected as baseline for an ongoing clinical trial study
- Data was collected from November 2020-April 2022

### Participants (N=52):

- Identified through medical chart review and social media outreach

TABLE 1: Participant Demographics

	% (N) or Mean (SD)
Gender	
Female	63% (33)
Male	37% (19)
Age	20.8 (2.7)
Race	
African American/Black	46 (24)
White/Caucasian	36 (19)
Asian/Pacific Islander	4 (2)
Bi-Racial	10 (5)
Other	4 (2)
HbA1c	10.4 (2.1)

### Procedures:

- Remote data collection (via Zoom)
- Obtained written consent/assent
- REDCap

### Measures:

- Self-Efficacy: PHCS, DES
- Autonomy: RAI
- Depression: CES-D
- Diabetes Management: DMS
- Glycemic Control: HbA1c

### Data Analysis:

- SPSS, version 25
- Pearson’s correlations
- $\alpha = 0.05$

## RESULTS

TABLE 2: Bivariate Correlations

	RAI	DES	PHCS	CES-D	DMS	Means (SD)
Relative Autonomy Index (RAI)						0.8 (1.4)
Diabetes Empowerment Scale (DES)	<b>0.288*</b>					3.8 (0.7)
Perceived Health Competence Scale (PHCS)	<b>0.264†</b>	<b>0.282*</b>				24.9 (5.2)
Center of Epidemiologic Studies Depression (CES-D)	-0.157	-0.217	<b>-0.350*</b>			20.4 (15.1)
Diabetes Management Scale (DMS)	0.178	0.055	0.123	-0.006		64.9 (15.3)
HbA1c	-0.082	-0.076	-0.146	-0.062	-0.151	10.4 (2.1)

Note: † indicates correlation is marginally significant (0.05-0.08). \* indicates correlation is significant at the 0.05 level.

## DISCUSSION

- Study hypotheses were partially supported

### Higher depression scores were significantly associated with lower scores on the PHCS, but not the DES and RAI

- The less depressed EAs felt, the more competent they felt about their ability to perform health care tasks (PHCS)
- As symptoms of depression decreased, perceived diabetes empowerment (DES) increased but did not reach statistical significance
- As symptoms of depression decreased, feelings of autonomy (RAI) increased but did not reach statistical significance

### Lower autonomy scores were associated with lower self-efficacy scores

- The less autonomous EAs felt, the less competent they felt

### Autonomy and self-efficacy scores were not significantly associated with diabetes management

- Although EAs reporting higher scores on the RAI, DES, and PHCS also reported higher diabetes management, this relationship was not statistically significant

### Diabetes management was not significantly associated with glycemic control

- Although EAs reporting greater diabetes management demonstrated better glycemic control, this relationship was not statistically significant

### Study limitations

- Small sample size
- Restricted response range, i.e., Participants had an elevated HbA1c and elevated depression scores

### Future Directions

- More research is needed with EAs with T1D that have a full range of scores (depression, HbA1c, diabetes management, etc.) to truly assess the affect depression has on motivation, and thus, diabetes management
- Motivation is only one factor associated with diabetes and health management; other factors connected to health management need to also be assessed

## CLINICAL IMPLICATIONS

- EAs are already struggling with developmental tasks in addition to health management, without depressive symptoms hindering motivation
- Major crises like the COVID-19 pandemic may impact feelings of competency, and thus motivation
- The introduction of regular depression and motivation screenings amongst EAs may help improve health management

## ACKNOWLEDGMENT

Research reported in this presentation was supported by the National Institute of Diabetes, Digestive, and Kidney Diseases under award number R01DK116901