Attachment and glycemic control in women with type 2 diabetes: The mediating role of psychological distress

Omar Braizat¹; Richard Feinn²; Gina Abbott²; Julie Wagner³

Jordan University Hospital¹ Quinnipiac University ² University of Connecticut Schools of Medicine and Dental Medicine³

Background and Aims

The goal of type 2 diabetes management is achievement of glucose levels as near to normal as possible to delay or prevent complications. Attachment refers to the nature of early relationships between infant and caregiver, which later on develop into adult attachment patterns and shape the adult’s ability to elicit caregiving behavior from others [1]. Several studies suggests that attachment is associated with glycemic control [e.g., 2]. It is unknown what mediators link attachment to glycemic control. Certain attachment styles are prone to emotional distress [3]. This study investigated whether depressive symptoms and/or diabetes distress mediate the relationship between attachment style and glycemia in women with diabetes.

Methods

Procedures

These findings are from secondary data analysis of a study to investigate the racial discrimination and diabetes outcomes. Seventy-seven women with type 2 diabetes were recruited in Connecticut, USA, by advertisements in newspapers, radio and state employee paycheck inserts. Inclusion criteria: self-reported type 2 diabetes > 1 year, being born and raised in the US, and identifying as Black/African American or White/Caucasian/European American. Exclusion criteria: self-identified as Hispanic; known or suspected heart disease, acute medical or psychiatric problems; or drug or alcohol use disorder. Participants completed the Relationship Questionnaire and as in previous studies [e.g., 4], were divided into two groups. “Secure” or “preoccupied” attachment were combined into the *interactive* relationship style (high proximity seeking) and “dismissing” or “fearful” were combined into the *independent* relationship style (low proximity seeking).

Measures

Glycemic control was a latent variable comprised of A1c (HPLC; with the SynchronR system by Beckman CoulterTM, Inc) and 48-hour continuously measured glucose (MiniMed iPRO; Medtronic MiniMed, Northridge, CA, USA). Diabetes distress was assessed with the Problem Areas in Diabetes (PAID) scale and depressive symptoms with the Center for Epidemiological Studies of Depression (CES-D) scale. A parallel multiple mediation model with relationship style as the independent variable, glycemia as the dependent variable, and PAID and CES-D as mediators, tested indirect effects. Bias-corrected bootstrap with 10,000 replications was used to construct 95% confidence intervals.

Results

55% of participants were categorized as “interactive” and 45% as “independent”. Participants had a mean age of 55.8 (SD=11.7) years, 44% of the sample was married, and 30.6 % were using insulin. The indirect association of attachment with glycemic control through diabetes distress was significant (effect = -0.09, p=.036, 95CI=-0.19—0.01), but through depressive symptoms was not significant. A model testing the indirect association of attachment with diabetes distress through glycemic control was not significant.

Results values below are mean (SD)

characteristic	Secure/ Preoccupied “Interactive” n=44 (68.7)	Fearful/ dismissing “Independent” n=31 (41.3%)	Total n=75 (100%)	P- Value
PAID Score	46.82 (21.48)	60.74 (24.80)	52.57 (23.77)	.11
CESD Score	10.51 (9.57)	14.16 (9.02)	11.82 (9.44)	.76
CGM glucose (mg/dl)	137.95 (31.30)	155.06 (45.07)	145.44 (38.19)	.01*
A1c mmol/mol (IFCC)	48 (12.02)	56 (19.67)	51 (16.40)	.01*
A1c% (NGSP)	6.5 (1.1)	7.3 (1.8)	6.8 (1.5)

^0 = fearful & dismissing, 1= secure & preoccupied

Figure 1: Path model for parallel mediation model showing standardized coefficients (standard error). * p<.05, ** p<.01

Discussion

The main finding from this study is that attachment is linked to glycemic control indirectly through diabetes distress, but not through depressive symptoms. A main source of distress for patients living with diabetes is the burden of daily diabetes self-care. Meeting these behavioral demands is rendered easier with support from multiple sources, including physicians, diabetes educators, family members, friends and peers with diabetes. Patients with independent attachment styles may be less likely to cultivate these sources of support. Depressive symptoms and diabetes distress are related, but distinct, forms of emotional problems commonly found in persons with diabetes. Our findings are in line with emerging research that suggests that diabetes distress has a stronger association with glycemic control than do depressive symptoms [5]. Adult attachment is a rather stable characteristic, meaning that it is unlikely to change on its own in the absence of direct intervention. However, it is not wholly unmodifiable. A strength of this study was that glycemic control was modeled with a latent variable comprised of A1c and augmented by CGM. Limitations include; cross-sectional so causality and temporal ordering cannot be determined. Data were collected from a geographically limited and small sample of women, thus limiting generalization.

References

- Bretherton, I. (1992). The origins of attachment theory... Developmental Psychology.
- Ciechanowski et al: Influence of patient attachment style on self-care and outcomes in diabetes. Psychosom.Med. 2004: 66:720-728.
- Ciechanowski et al. The association of depression and perceptions of interpersonal relationships in patients with diabetes. J. Psychosom Res 2005: 58(2), 139-144.
- Ciechanowski, et al. Relationship styles and mortality in patients with diabetes. Diabetes Care, 2010:33(3), 539-544.
- Fisher et al: Diabetes distress but not clinical depression or depressive symptoms is associated with glycemic control... Diabetes Care 2010: 33:23-28.