

Assessing the readiness to transition to adult care, perceived medication barriers, and glycemic control among teens with type 1 diabetes

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OBJECTIVES

This study assessed the readiness to transition (RT) from pediatric to adult care, perceived medication barriers (PMB), and glycemic control in teens with type one diabetes (T1D).

METHODS

Design: This was a quantitative study using a cross-sectional design. **Settings:** The pediatric endocrinology outpatient clinic in King Abdullah Children Specialist Hospital, MNGHA, Riyadh, Saudi Arabia. **Sample:** A convenient sample of 83 adolescents (12-17 years old) diagnosed with T1D for ≥ 6 months, their caregivers, and their pediatric endocrinologists (n=16). Data has been collected from February to December 2019. **Tools:** The Arabic version of the Readiness for Transition Questionnaire: expected scores can range from 10 to 50 (Gilleland, Amaral, Mee, & Blount, 2012). The Treatment Adherence Barrier Scale: expected scores can range from 0 to 80 (Simons & Blount, 2007). Glycemic control was measured by hemoglobin A1c (HbA1c). **Ethical consideration:** Approval was obtained from the Institutional Review Board (IRB) of King Abdullah International Medical Research Center (KAIMRC) to conduct the study was obtained (RC20/004/R).

DISCUSSION

Glycemic control: The majority had an uncontrolled T1 [1, 2]. Previous studies attributed this to unhealthy eating and lifestyle habits [3, 4]. HbA1c was higher among male teens compared to females, which is contrary to previous reports [1, 5]. HgbA1c was not correlated with age, disease duration, insulin delivery method, which was not in agreement with previous reports [1, 6]. **Perceived Barriers to adherence (PBA):** Unlike in previous reports [7], PBA was not associated with Hb A1c, which could be because the tool utilized to measure PBA was not T1D specific. PMB was negatively correlated with teens' age, disease duration, female sex and the use of CSII [8, 9]. **Readiness to Transition (RT):** Only 6% (by parents and providers reports) and 20% (by teens' reports) of them were identified as ready to be transferred. High RT (by parents and providers reports) predicted lower HbA1c. The providers' reports of RT remained the strongest predictor of HbA1c. This may indicate the strong nature of the patient-provider relationship in pediatric care.

CONCLUSIONS

Reducing PBA and enhancing RT are equally important to reach adequate glycemic control and prevent complications. Investing in maintaining strong nature of the patient-provider relationship in pediatric care and involving adult care providers is essential. National transition readiness programs to address the unique needs of teens with T1D are required.

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TABLE 1. Demographic characteristics of teens (n=83):

Variable	M (SD)	
Age	13.65 (1.87)	
	Category	Frequency (percentage)
Sex	Male	47 (56.63%)
	Female	36 (43.37%)
School grade	Primary school	17 (21.5%)
	Intermediate	44 (52.9%)
	High school	22 (25.6%)
Disease duration	6-12 months	16 (19.43%)
	>12 months	67 (80.57%)
Insulin therapy method	MDI	60 (71%)
	CSII	23 (29%)
Comorbid conditions	No	67 (79.8%)
	Yes	16 (20.2%)
Family history of diabetes mellitus	No	51 (61.5%)
	Yes	32 (38.5%)

Note. M=Mean, SD=Standard deviation. MDI=Multiple daily injections, and CSII=Continuous subcutaneous insulin infusion.

FIGURE 1. Regression analysis: readiness to transition-adolescent responsibility (Parents):

Teen's readiness to assume full responsibility for their health				
	Not ready	Somewhat ready	Mostly ready	Ready
Teen	38 (46%)	12 (15%)	12 (15%)	19 (23%)
Parent	35 (43%)	20 (25%)	15 (19%)	9 (11%)
Provider	32 (39%)	17 (21%)	27 (33%)	4 (5.8%)
Teen's readiness to transfer from pediatric to adult care				
	Not ready	Somewhat ready	Mostly ready	Ready
Teen	35 (43%)	17 (21%)	12 (15%)	15 (19%)
Parent	30 (37.20%)	22 (27.4%)	24 (29.4%)	4 (5.8%)
Provider	32 (39%)	17 (21%)	27 (33%)	4 (5.8%)

REFERENCES

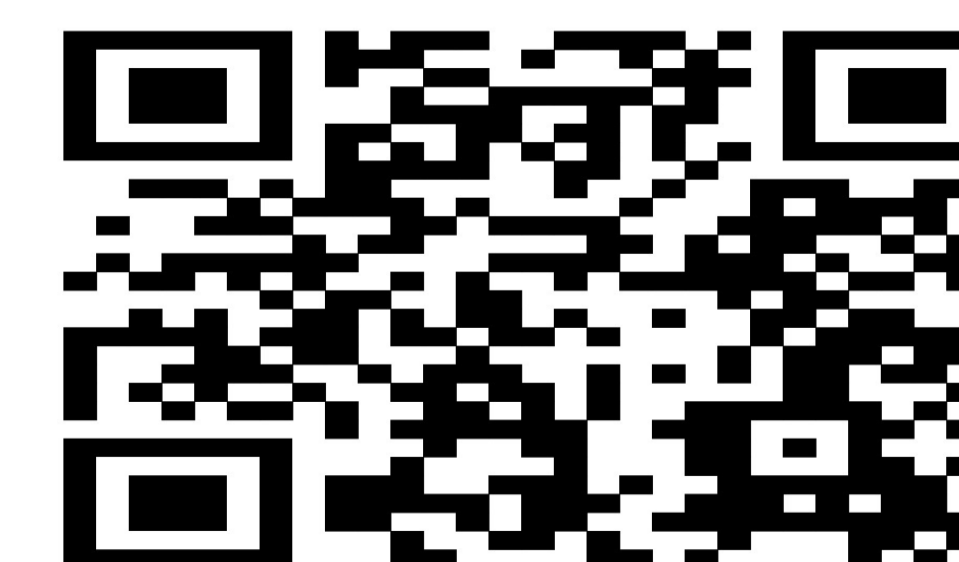
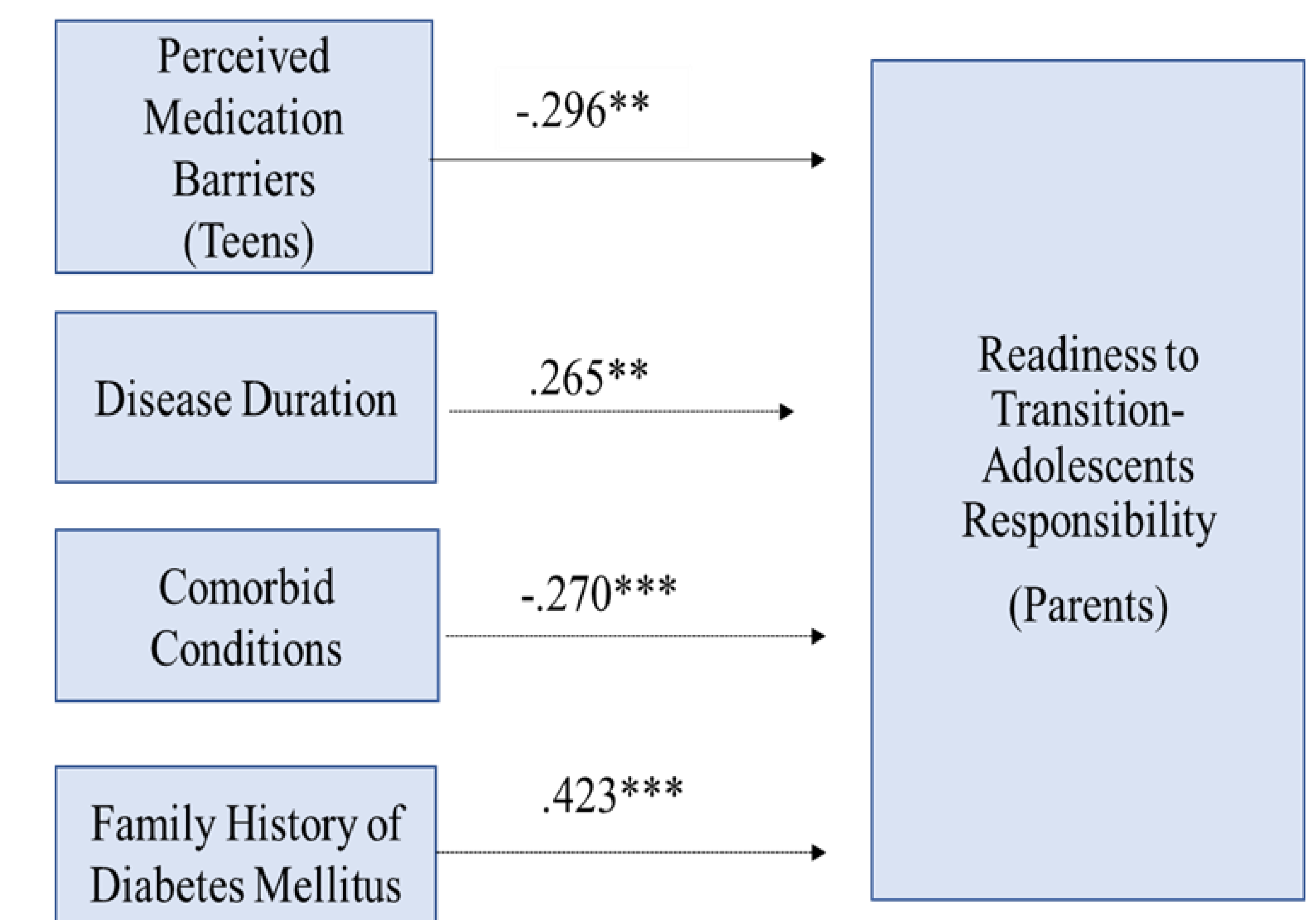
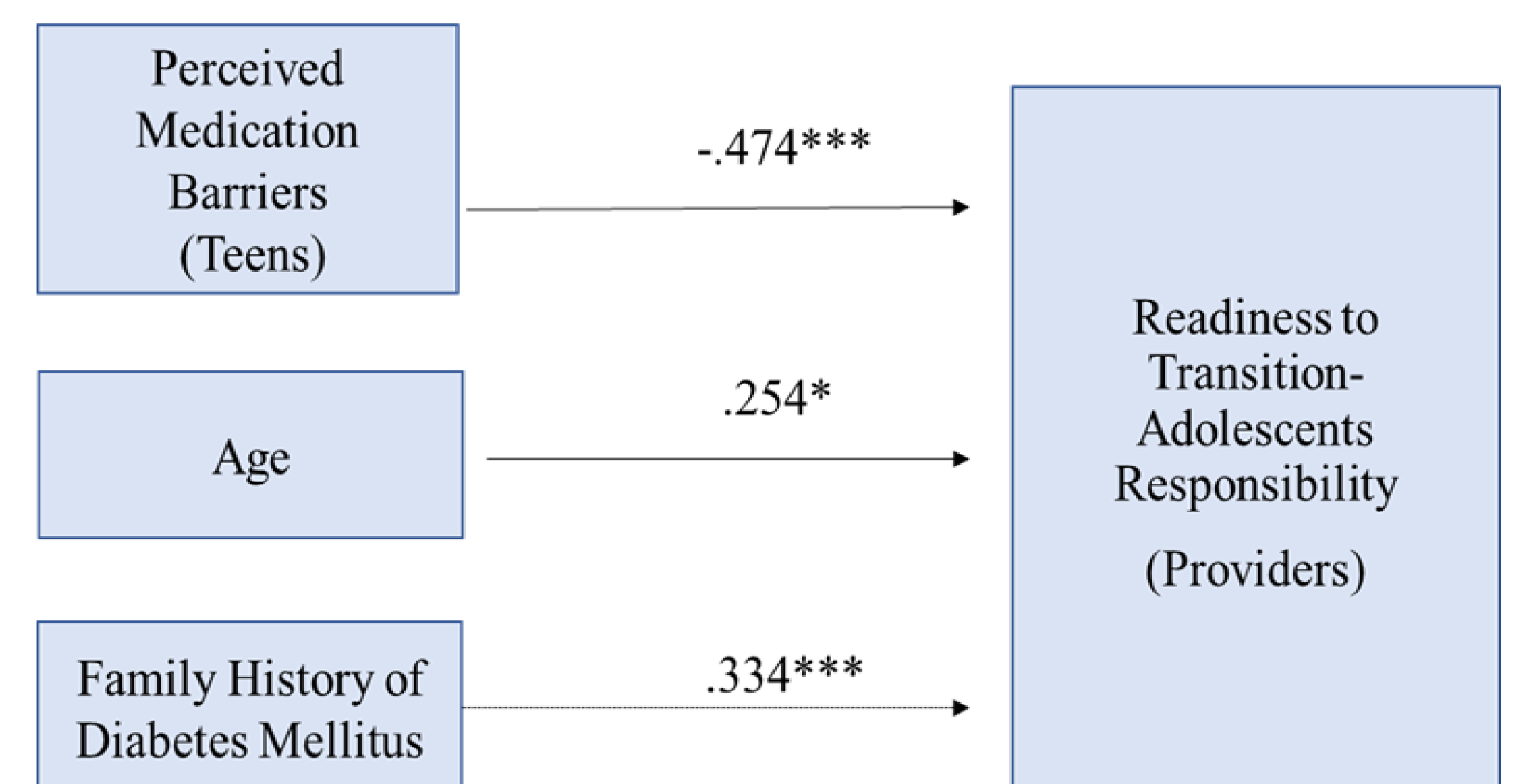


FIGURE 1. Regression analysis: readiness to transition-adolescent responsibility (parents):



Note. Interpret the significance of the regression estimates (standardized β) as * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$ (two-tailed).

FIGURE 2. Regression analysis: readiness to transition-adolescents responsibility (providers):



Note. Interpret the significance of the regression estimates (standardized β) as * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$ (two-tailed).

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