



UNIVERSITY OF
GEORGIA

Personality Factors Associated with Barriers to Medication Adherence in Adolescent and Young Adult Solid Organ Transplant Recipients and Caregivers

Kelly E. Rea, B.A.¹, Lauren F. Quast, B.S.¹, Mary Gray Stolz, B.A.¹, Cyd Eaton, Ph.D.², Ana Gutiérrez-Colina, M.S.¹, Julia LaMotte, M.S.¹, Laura L. Mee, Ph.D.^{3,4}, Gloria Chiang, Ph.D.^{3,4}, Chad Mao, M.D.^{3,4}, Rouba Garro, M.D.^{3,4}, Rene Romero, M.D.^{3,4}, & Ronald L. Blount, Ph.D.¹

¹University of Georgia, ²The John Hopkins School of Medicine, ³Children's Healthcare of Atlanta, ⁴Emory University



EMORY
UNIVERSITY
SCHOOL OF
MEDICINE



Children's
Healthcare of Atlanta

Introduction

- Adolescents and young adults (AYAs) with chronic illnesses and their caregivers often experience significant barriers to adherence, related to a variety of domains.¹
- Medication adherence is vital for maintaining organ graft health among pediatric solid organ transplant recipients.
- Caregiver personality factors have shown relations with barriers to adherence in pre-transplant populations,² however personality and barriers have not been studied post-transplant.
- This study examines the relations between personality and adherence barriers in AYA solid organ transplant recipients and their caregivers.

Methods

- Participants
 - 67 heart, kidney, or liver transplant recipients aged 12-21, and their caregivers.
- Measures
 - NEO-Five Factor Inventory³: Neuroticism and Conscientiousness subscales
 - AYA Medication Barriers
 - AYA reported: *Adolescent Medication Barriers Scales (AMBS)*⁴
 - Caregiver reports of adolescent barriers: *Parent Medication Barriers Scale (PMBS)*⁴
 - Caregiver reports of their barriers to enforcing AYA medication adherence: *Barriers to Pediatric Adherence for Parents (BPAP)*

Analyses

- Partial correlations controlling for AYA age examined relations between AYA and caregiver personality and AMBS, PMBS, and BPAP barriers to adherence

Results

Sample Demographics

	M(SD)
AYA Age (years)	16.64(1.82)
Caregiver Age (years)	46.15(8.37)
Years since transplant	7.92(5.61)

	N(%)
Organ group	
Heart	24 (35.8)
Kidney	24 (35.8)
Liver	19 (28.4)
Child Race	
White	35 (52.2)
Black	19 (28.4)
Hispanic	3 (4.5)
Asian	4 (6.0)
Biracial	6 (9.0)
Family Income	
\$0-\$24,999	13 (19.7)
\$25,000-\$49,999	20 (30.3)
\$50,000-\$74,999	11 (16.7)
\$75,000-\$99,999	6 (9.0)
\$100,000 or greater	16 (24.2)

AYA Medication Barriers: Caregiver Reported (PMBS) and AYA Reported (AMBS)

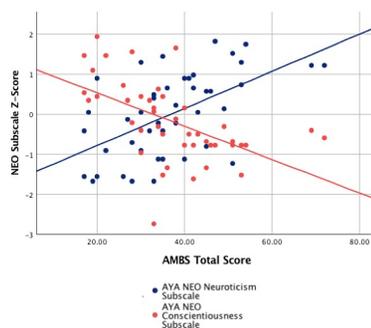
	Caregiver Neuroticism	Caregiver Conscientiousness	AYA Neuroticism	AYA Conscientiousness
PMBS: Disease Frustration/Adolescent Issues	0.08	0.01	0.25	-0.25
PMBS: Regimen Adaptation/Cognitive Issues	0.05	0.13	-0.00	-0.44**
PMBS: Ingestion Issues	-0.18	-0.19	0.16	-0.17
PMBS: Parent Reminder	0.03	-0.22	-0.00	0.22
PMBS Total Score	0.03	0.02	0.18	-0.43*
AMBS: Disease Frustration	0.14	-0.34	0.55***	-0.47***
AMBS: Regimen Adaptation	0.31	-0.27	0.50**	-0.61***
AMBS: Ingestion Issues	0.20	-0.26	0.67***	-0.47***
AMBS Total Score	0.21	-0.33	0.64***	-0.56***

Caregiver Medication Barriers: Caregiver Reported (BPAP)

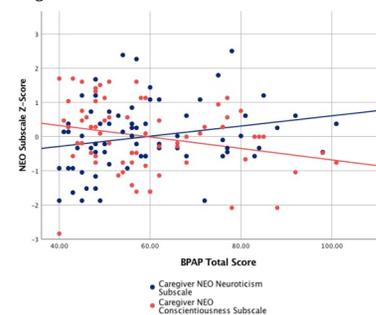
	Caregiver Neuroticism	Caregiver Conscientiousness	AYA Neuroticism	AYA Conscientiousness
BPAP Total	0.26*	-0.28*	0.21	-0.05

* $p < .05$, ** $p < .01$, *** $p < .001$

AYA NEO FFI Subscale Scores and AMBS Total Score



Caregiver NEO FFI Subscale Scores and BPAP Total Score



Discussion

- Higher AYA and caregiver reports of Neuroticism and lower reports of Conscientiousness relate to more medication barriers across domains.
- Importantly, AYA personality only related to AYA specific barriers, as reported by the AYA and, to a lesser extent, by the parent. Caregiver personality related to caregivers' barriers to promoting AYA adherence, but not AYA barriers.
- Higher Neuroticism may relate to higher barriers via stress and anxiety regarding illness and general life issues. High Conscientiousness may relate to fewer barriers through better attending, planning, and organization.
- Personality may be either a risk or protective factor for barriers to medication adherence throughout transplantation.

Future Directions

- While personality is considered relatively stable, these results show an opportunity for targeted education or intervention regarding barriers related to specific personality patterns.
- Results highlight the importance of considering both AYA and caregiver personality and their relation to barriers when considering intervention to improve adherence.

Acknowledgements & References

Acknowledgements: The authors would like to thank the Children's Healthcare of Atlanta Transplant Services staff, and the families who participated in this study. Address correspondence to: Kelly.Rea@uga.edu

¹ Hangshj, S., & Boisen, K. A. (2014). Self-reported barriers to medication adherence among chronically ill adolescents: a systematic review. *Journal of Adolescent Health, 54*(2), 121-138.

² Lee, J. L., Eaton, C. K., Loiselle Rich, K., Reed-Knight, B., Liverman, R. S., Mee, L. L., ... & Blount, R. L. (2017). The interactive effect of parent personality and medication knowledge on adherence in children awaiting solid organ transplantation. *Health Psychology, 36*(5), 445.

³ Costa, P. T., & McCrae, R. R. (1992). Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI): Professional manual. Psychological Assessment Resources, Incorporated.

⁴ Simons, L. E., & Blount, R. L. (2007). Identifying barriers to medication adherence in adolescent transplant recipients. *Journal of Pediatric Psychology, 32*(7), 831-844.