Introduction to the Special Issue on Adherence: A Tribute to Dennis Drotar

Avani C. Modi, PhD, Kevin A. Hommel, PhD, and Ahna L. H. Pai, PhD

Division of Behavioral Medicine and Clinical Psychology, Cincinnati Children’s Hospital Medical Center, University of Cincinnati College of Medicine

All correspondence concerning this article should be addressed to Avani C. Modi, PhD Cincinnati Children’s Hospital Medical Center Center for Adherence and Self-Management 3333 Burnet Avenue, MLC 7039 Cincinnati, OH 45229, USA. E-mail: avani.modi@cchmc.org

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Introduction

This special issue is dedicated to the memory of Dr. Dennis Drotar and his lasting impact on the field of pediatric adherence. Denny was born on January 13, 1945 in Elizabeth, New Jersey. He received his Bachelor of Arts in 1966 from Rutgers University, his Master of Arts in Psychology from the University of Iowa in 1968, and his PhD in Clinical Psychology from the University of Iowa in 1970. Denny was shaped by two formative experiences at the University of Iowa: (1) the novel training in pediatric psychology and (2) a clear understanding of the importance of good mentorship and training (mentor: Dr. Donald Routh). He completed his internship at Boston Children’s Hospital (1969) and postdoctoral fellowship at the University of Colorado Medical Center (1971). His first faculty position began in 1971 as an Assistant Professor of Psychology in Psychiatry and Pediatrics at Case Western Reserve University (CWRU) School of Medicine, where he became the first full-time psychologist at the affiliated Rainbow Babies and Children’s Hospital. His success was clear from the beginning, as Denny was quickly promoted throughout his career and became the Chief of the Division of Behavioral Pediatrics and Psychology at CWRU in 1996. For the last stage of his career, Denny chose to devote his time and efforts to the creation, development, and leadership of the Center for Adherence and Self-Management at Cincinnati Children’s Hospital Medical Center starting in 2007.

In an editorial regarding his own personal reflections (Drotar, 2001), Denny stated that after his sister’s death when he was 20 years old, he was driven by the compelling question “What will you do with your life in the time that you have?” The answer to this question could be measured by his track record of over 350 publications, continuous grant funding since 1972, or his countless number of successful mentees who are leaders in their respective fields. It could also be measured by the numerous awards Denny received throughout his career. In fact, his research career was so distinguished that the Society of Pediatric Psychology named their research award after Denny (Dennis Drotar Distinguished Research Award in Pediatric Psychology), which recognizes excellence and significant contributions in establishing the scientific base of pediatric psychology.

As his mentees and the first faculty of the Center for Adherence and Self-Management, we can honestly say that, in the time that he had, Denny was truly a triple threat as researcher, clinician, and mentor. He had an extraordinary impact on science, which translated to the patients and families he and his trainees cared for, as well as the relationships he cultivated, the students and trainees he mentored, and the field of pediatric psychology as a whole. One can only aspire to approximate the impact Denny Drotar has had on science, mentoring, leadership, and clinical practice.

Special Issue Content

As mentioned, Denny made significant contributions to the field of pediatric adherence, including adherence measurement, identification of factors contributing to non-adherence, and the development and testing of interventions to improve adherence. Not surprisingly, our special issue has articles that fall within these three core areas of adherence science.

The measurement of adherence has received increasing attention with the advent of new
technologies. There are strengths and weaknesses to all types of adherence measurement, including electronic monitors (McGrady et al., 2018); however, in general, these technologies can help to refine clinical decisions at point of care. This is especially true in the area of pediatric type 1 diabetes (T1D), where technology is critical in understanding adherence behaviors, including blood glucose checks, insulin dosing with pumps, adjustments to insulin pumps, and continuous glucose monitoring. In the paper by Westen and colleagues, the complexity of adherence behaviors in T1D is apparent (Westen et al., 2018). As noted by the authors, the American Diabetes Association recommends that patients engage in blood glucose checks in a multitude of situations (e.g., before meals and snacks, before sleep and exercise, during suspected periods of hypoglycemia, and to verify dose postprandially). These recommendations are further complicated by the insulin delivery method (e.g., multiple daily injections vs. subcutaneous insulin infusion). Thus, one of the key aims of this study was to determine rates of adherence to these complex behaviors across insulin delivery methods. Overall, blood glucose self-monitoring occurred only half the time for those using multiple daily injections and approximately 60% for those using subcutaneous insulin infusions with both manual and nonmanual entries. For participants who used pumps for insulin delivery, additional adherence behaviors, including entering carbohydrates, insulin bolusing, and correcting for hyperglycemic levels were suboptimal, which had an impact on glycated hemoglobin (HbA1c) results. The second article by Driscoll and colleagues further delineates how the measurement of T1D adherence behaviors can be affected by the actual clinic visit (Driscoll, Johnson, Wang, Wright, & Deeb, 2017). Blood glucose monitoring, based on downloaded blood glucose monitors, increased before T1D clinic visits in young children but not adolescents. In addition, blood glucose monitoring decreased following the clinic visits for both developmental groups. These data suggest that white coat adherence, defined as changes in adherence behaviors based on clinic visits, occurs for youth with T1D and especially younger children. White coat adherence has significant implications for clinical practice and how physicians and health-care teams interpret the blood glucose data they download during clinic visits. However, current industry software default to 2 weeks of data available during clinic downloads, highlighting the significant issue with adherence measurement in routine T1D care. Across both of these articles, data highlight the importance of examining the entire T1D treatment regimen, as adherence behaviors can vary based on the treatment task, the dosing method, and the timing of clinic visits.

Several factors have been empirically associated with adherence across multiple chronic pediatric conditions. In this special issue, we have several excellent articles examining various factors related to adherence. These factors are merely a snapshot of a multitude of potential individual-, family-, community-, and health-care system-level factors that can impact adherence (Modi et al., 2012) but cover the continuum from health beliefs and perceived barriers, to family decision-making about how the condition will be managed and how those decisions play out with regard to treatment responsibility, to family functioning and social factors that can impact adherence. Eaton and colleagues examined adherence and health beliefs, including self-efficacy, outcome expectancies, perceived barriers, and demographic risk factors in a sample of adolescents with chronic kidney disease over a 2-year period (Eaton et al., 2018). Results of this study showed that higher self-efficacy, more positive outcome expectancies, and greater family were associated with better adherence over time, and participants who were older, female, African American, or had lower family income or public insurance had poorer adherence over time. This study highlights the importance of adolescent health beliefs as well as fixed demographic factors that can impact self-management over time. Plevinsky and colleagues focused specifically on perceived barriers to adherence but did so in a longitudinal manner so as to characterize the ongoing impact of barriers on adherence to oral medication in adolescents with inflammatory bowel disease (Plevinsky, Wojtowicz, Miller, & Greenley, 2018). Over a 6-month period, increasing adherence barriers predicted poorer daily adherence. Additionally, for participants who reported no barriers at baseline, adherence did not change over time. For participants who did report barriers at baseline, adherence decreased over the 6-month period. These findings highlight the clinical implications of attending to perceived barriers to treatment adherence as they may impact long-term self-management behavior.

In the article by Miller and colleagues, children and adolescents, along with their parents, reported on their level of decision-making involvement (Miller & Jawad, 2018). This study demonstrated that several aspects of decision-making involvement, per both child- and parent-report, were associated with greater adherence over the 2-year study period, suggesting that child engagement in decision-making might be an important target of intervention. In the study by Holbein and colleagues, researchers examined allocation of treatment responsibility in adolescents with epilepsy (Holbein, Smith, Peugh, & Modi, 2018). In this study, caregivers assumed greater responsibility for scheduling appointments, and better long-term adherence was related to greater caregiver responsibility for...
antiepileptic medication. While allocation of responsibility is a fairly new area, these findings suggest it may be an important factor in self-management in epilepsy. Further, the concept of allocating responsibility for treatments is one that generalizes to most, if not all chronic conditions.

Related to the issue of how families communicate with each other and make decisions about treatment responsibility are the issues of family conflict and cohesion, which have been the focus of many adherence studies. In this special issue, Psihogios and colleagues present a meta-analysis focused on the role of family functioning in medical adherence across pediatric chronic conditions (Psihogios, Fellmeth, Schwartz, & Barakat, 2018). Findings from this study show that more positive family communication, cohesion, and problem-solving among family members are related to better adherence across chronic conditions. These authors also provide useful recommendations for enhancing methodological rigor in adherence studies.

Extending beyond the family system, Dinaj-Koci and colleagues examined the relationship between social–cognitive factors and adherence in adolescents and young adults with HIV (Dinaj-Koci, Wang, Naar-King, & MacDonell, 2018). This multisite study revealed that greater social support and self-efficacy were associated with better adherence to anti-retroviral therapy medication, with motivational readiness serving as an important mechanism of this relationship. The study also identified substance use as a risk factor directly related to poorer adherence in this population.

The development and evaluation of adherence interventions in diabetes was facilitated by extensive work by Denny and his colleagues. In fact, Denny’s work in diabetes spanned his career and included being a member of the Diabetes Control and Complications Trial Research Group that led to countless clinical and scientific advances. His studies contributed to a robust literature that demonstrated deteriorating trajectories of adherence and glycemic control in adolescents with T1D and individual, family, and systems factors that influence these trajectories. In this special issue, we have three papers focused on diabetes adherence interventions. The first is a pilot study that aimed to implement an evidence-based adherence intervention for adolescents with T1D that was delivered in the community by community health workers (Ellis et al., 2017). The authors reported clinically and statistically significant differences in HbA1c and quality of life for those in the intervention versus the standard care group 7 months post baseline. The second study is a family-based pilot intervention targeting adherence of adolescents (age 12–17) with T1D and their parents in which diabetes care providers reinforced adolescents’ diabetes-related strengths and adherence behaviors (Hilliard et al., 2018). This clinic-based intervention typically took less than 10 min for the team to deliver, was liked by providers and participants, and pre–post data indicated significant improvements in youth-rated diabetes strengths, adherence, burden, and relationship with provider, parent-reported diabetes burden, and provider-rated relationship with family ($p < .05$). Unfortunately, changes in objectively measured adherence and glycemic control were not observed. Honoring Denny’s devotion to trainees, a student commentary was solicited from his former mentee Jeannette Iskander, currently a graduate student in clinical psychology, to accompany this article. She thoughtfully considers the unique contribution of resilience-based intervention within the context of the larger diabetes adherence intervention literature (Iskander & Wildman, 2018). The final T1D intervention study in this issue addressed two critical issues facing adherence intervention research, mechanisms of the intervention effects, and sub-group effects (Lansing, Stoianova, & Stanger, 2018). The authors found self-monitoring of blood glucose (SMBG) mediated the benefits of the intervention on HbA1c and that emotional control moderated the benefits of the observed improvements of SMBG where only adolescents with poorer emotional control demonstrated improvements in SMBG. These intervention studies exemplify what Denny highlighted as the “formidable tasks” (Drotar, 2001) of implementing adherence interventions; emphasizing flexibility, convenience, and cost containment while being realistic about the work that still lies ahead to optimize adherence interventions for at-risk populations.

Conclusion

Denny’s legacy in adherence science and pediatric psychology is enduring. In this special issue, several of the articles are authored by Denny’s mentees and collaborators, including two special commentaries from Dr. Tonya Palermo and Dr. Thomas Boat, that speak to Denny’s lasting impact on research, collaboration, and mentoring (Boat, 2018; Palermo, 2018). Denny has mentored and inspired so many pediatric psychologists and pediatricians and enhanced their career trajectories. He would be so proud to know that the Journal of Pediatric Psychology now solicits student commentaries for seminal articles. Denny and his wife, Peggy Crawford, have ensured continued support for trainees via the Drotar-Crawford Postdoctoral Fellowship Research Grant in Pediatric Psychology. This award provides $10,000 to a postdoctoral fellow to support research in pediatric psychology, with mentorship from a faculty advisor. Denny and Peggy’s wish to create this fellowship award further demonstrates their commitment to training the next generation of pediatric psychologists.
As some of you may know, Denny had a wonderfully dry sense of humor, was quick to give feedback to his mentees despite not ever using a computer, and provided advice in an approachable way. In fact, his communications with us often involved quotes from musical legends or nuggets of wisdom that we often refer to with fondness. Not a day goes by that we do not ensure that our work is “value added” and that our approaches are not “draconian”—two of our favorite Denny phrases. Denny was inspiring, and it is only fitting that we end our introduction with a quote that reminds us of his impact on our careers and lives by one of his favorite musicians, Bob Dylan. “I think of a hero as someone who understands the degree of responsibility that comes with his freedom.” Thanks, Denny, for being our hero.

Conflicts of interest: None declared.

References


