

Assessing a Program to Improve Teachers' Ability to Effectively Implement Educational Accommodations for Chronically Ill Learners: Lessons from Project PENCIL

Louise C. Palmer, Rosa M. Steen, Eric C. Twombly, and Kristen D. Holtz

This research brief presents the evaluation findings of a prototype of Project PENCIL (Protecting the Educational Needs of Chronically Ill Learners), a training program to improve the ability of Kindergarten through fifth grade (K-5) teachers to provide educational accommodations in their classrooms for children with chronic illnesses. These children, or "chronically ill learners" (CIL), comprise roughly 20 percent of school-aged students in the United States. Their chronic illnesses range from mild to severe and include asthma, HIV/AIDS, diabetes, cancer, sickle cell anemia, cystic fibrosis, and more (Kaffenberger, 2006; Moonie et al., 2006; Taras & Potts-Datema, 2005). Due to their illnesses, CIL miss an average of 16 school days annually, compared with three days for typically healthy children (McDougall et al., 2004). The combination of chronic illness and school absences negatively impacts these children's academic and social experience (Kaffenberger, 2006; Shaw & McCabe, 2008; Thies, 1999).

Teachers can minimize these impacts by effectively implementing educational accommodations, such as medication management in the classroom, instruction in the child's home during absences, modified coursework, and teaching strategies that specifically encourage peer acceptance, to name a few (Friedman & Settel, 1994; Knight-Madden et al., 2011). However, many teachers lack the training to implement accommodations or to understand the underlying academic and

social needs of CIL (Kosko & Wilkins, 2009; Clay et al., 2004; Olson et al., 2004; Sexson & Madan-Swain, 1993). For example, a study of 480 school personnel, including 419 teachers, found that 59 percent of school personnel have no academic training and 64 percent have no workplace training on the needs of CIL (Clay et al., 2004).

Inadequate training relates to a relative lack of knowledge about how chronic illness affects CIL in the classroom (Olson et al., 2004; Sexson & Madan-Swain, 1993). Indeed, Clay et al. (2004) found that only 29 percent of school personnel, including teachers, were concerned that a CIL's absenteeism may impact his or her academics and only 13 percent recognized fatigue as an effect of a chronic illness that may negatively affect learning. The result of limited training and knowledge about teaching CIL and accommodating their needs has important and negative implications for teachers and CIL, including some teachers having poorer attitudes about teaching these children (Avramidis & Kalyva, 2007); their reported feelings of being overwhelmed by having CIL in their classrooms (Sexson & Madan-Swain, 1993); and their reported beliefs that they are inadequately prepared to instruct CIL and manage their medical issues effectively in their classrooms (DeSimone & Parmar, 2006; Maccini & Gagnon, 2006, Olson et al., 2004). The combination of these effects reduces the likelihood that CIL will have productive academic and social experiences in school.

Because limited or inadequate teacher training on accommodating CIL is a likely cause of poor academic and social classroom experiences for CIL, the National Institutes of Health funded Project PENCIL: Protecting the Educational Needs of Chronically Ill Learners. Project PENCIL contains web, video, and print-based components, including a print Teachers' Guide for elementary school teachers. The development and implementation of Project PENCIL relates to the linear, positive relationships between teacher training (i.e., knowledge development); improved teacher attitudes and self-efficacy; and an increase in teachers' ability to implement evidence-based teaching practices (Klingner et al., 2003) and classroom accommodations for CIL (Kosko & Wilkins, 2009). In other words, one may hypothesize that teachers who participate in the Project PENCIL training will have greater knowledge, more positive attitudes, and higher self-efficacy and will, therefore, be more likely to effectively address the needs of CIL through educational accommodations, which in turn will improve CIL's academic and social classroom experiences. This brief reports on the extent to which the prototype of the Project PENCIL Teachers' Guide indeed produces significant and positive changes in teachers' knowledge, attitudes, and self-efficacy toward accommodating CIL in their classrooms.

Methodology

The evaluation involved a two-group, pretest/post-test, quasi-experimental evaluation with 55 K-5 teachers of CIL, who we recruited nationally. Once enrolled in the evaluation, we randomly assigned teachers to an experimental group, which received the Project PENCIL training, or a control group, which received no training. The majority of teachers in the evaluation were female (89 percent) and Caucasian (89 percent). Four percent of the teachers were African American, two percent were American Indian, and five percent selected "other racial category." Five percent of teachers identified as Hispanic. The teachers in the evaluation were evenly distributed across K-5 grades and among schools characterized as low poverty (36.4 percent), mid to low poverty (21.8 percent), mid to high poverty (23.6 percent), and high poverty schools (18.2 percent), as defined by the proportion of students receiving free or reduced school lunch (Aud et al., 2012). Teachers varied somewhat in their teaching experience, though more than half have taught for 10 or more years. Most of them had some special education training, ranging from one to seven courses (67 percent), but 26 percent had no special education training. The majority (67

percent) of teachers had taught one or more CIL and all taught at public schools, which were relatively well distributed throughout regions in the United States.

The teachers in the evaluation took separate online pretest and post-test surveys that assessed their knowledge, positive attitudes, and self-efficacy on measures related to our key research question. The pretest surveys also collected demographic information. After completing the pretest, experimental group participants received a copy of the Teachers' Guide with the instructions to read it. The control group received no intervention. One week later, the participants took separate online post-test surveys, nearly identical to the pretests, but excluding the demographic questions and including questions related to participants' opinions of the Teachers' Guide for the experimental group only. Once we completed the data collection, we analyzed the data using bivariate and logistical regression procedures in STATA.

This evaluation has limitations. First, the sample size and homogeneity of participants may limit the generalizability of the evaluation results. Second, the findings suggest relatively high knowledge and positive attitudes at baseline resulting in little pretest to post-test change. Still, taken on the whole, this evaluation provides a basis for understanding the importance of training elementary school teachers on the importance of accommodating the educational and social needs of CIL.

Findings

Teachers exposed to the Project PENCIL Teachers' Guide showed minimal but important knowledge gains about certain aspects of educational accommodations for CIL.

The majority of participants had high knowledge levels at baseline, so we saw no statistically significant improvement on most knowledge measures. However, compared with the control group, the teachers who were exposed to the Teachers' Guide exhibited a significant increase in their knowledge about the types of illness-related school absences that are eligible for educational accommodations. Further, the experimental group demonstrated non-statistically significant gains in their knowledge about the school's responsibility to identify CIL in need of educational accommodations.

Teachers exposed to the Project PENCIL Teachers' Guide showed minimal attitudinal change about their ability to teach effectively with a CIL in their class.

Nearly all participants in both the experimental and control groups had highly positive attitudes toward having a CIL in their classroom at pretest. By and large, their strongly positive attitudes before the exposure to the Project PENCIL Teachers' Guide and the short time between the pretest and post-test surveys made statistically significant attitudinal improvements unlikely in the experimental group. Nonetheless, teachers who were exposed to the Teachers' Guide demonstrated a non-statistically significant increase in the percentage who stated that having a CIL in their class would not increase their workload to an unacceptable level, which serves a measure of teachers' attitudes toward CIL.

Teachers' improvements in self-efficacy to educationally accommodate CIL strongly relates to exposure to the Project PENCIL Teachers' Guide.

We observed the greatest number of statistically significant and positive changes from pretest to post-test on teachers' self-efficacy measures. Indeed, compared with the control group teachers, those who were exposed to the Project PENCIL Teachers' Guide showed statistically significant increases in their confidence to understand the impact of chronic illness on learning; develop and implement educational accommodations to help CIL succeed socially; understand their role as part of a Section 504 or Individualized Education Plan (IEP) team; work with other education and medical professionals to support CIL; work with CIL's parents to address the child's educational needs; answer other students' questions about the CIL and his or her illness; and conduct health care-related tasks in the classroom. Moreover, teachers who were exposed to the Teachers' Guide were significantly more likely to believe, after the intervention, that they can effectively accommodate a CIL in their classroom, when compared to the control group.

Discussion

The findings suggest that exposure to the prototype of the Project PENCIL Teachers' Guide produced some positive changes in teachers' knowledge, an important first step in meeting the educational and social needs of CIL in the classroom, and minimal but non-significant changes in teacher attitudes. The first finding relates to the surprising and relatively high knowledge about CIL issues at pretest. The second finding relates to the substantially positive attitudes about CIL among teachers at pretest.

The major impact of the Teacher's Guide is on teachers' self-efficacy to accommodate CIL. Indeed, on nearly every measure of self-efficacy, teachers who were exposed to the Teachers' Guide showed statistically significant improvements in their belief that they can effectively accommodate the educational and social needs of CIL in their classrooms, compared with teachers who received no exposure to the Teachers' Guide. This is encouraging news on two fronts. First, it provides evidence that Project PENCIL has some effective elements as a training program for teachers with CIL in their classrooms, even if Project PENCIL is in its formative and prototypical stage. Second, in an absolute sense, the improved self-efficacy of teachers to accommodate the needs of CIL is a vital component in the model that knowledge, attitudinal, and self-efficacy changes predict behavioral change (Bandura, 1977). It is insufficient for teachers to simply have relatively strong knowledge about and positive attitudes toward CIL in their classrooms. They must also possess the belief that they can effectively accommodate these students. These formative findings suggest that Project PENCIL has the intended effect of increasing the confidence of teachers of CIL.

Acknowledgments

This brief was made possible by grant number 1R44HD71663-1A1 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), part of the US National Institutes of Health. Its contents are the sole responsibility of KDH Research & Communication and do not necessarily represent the official views of the NICHD.

References

- Aud, S., Hussar, W., Johnson, F., Kena, G., Roth, E., Manning, E., Wang, X., & Zhang, J. (2012). The condition of education 2012 (NCES 2012-045). Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Avramidis, E., & Kalyva, E. (2007). The influence of teaching experience and professional development of Greek teachers' attitudes toward inclusion. *European Journal of Special Needs Education, 22*(4), 367-389.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.
- Clay, D.L., Cortina, S., Harper, D.C., & Cocco, K.M. (2004). Schoolteachers' experiences with childhood chronic illness. *Children's Health Care, 33*(3).

DeSimone, J. R., & Parmar, R. S. (2006). Middle school mathematics teachers' beliefs about inclusion of students with learning disabilities. *Learning Disabilities Research and Practice, 21*(2), 98-110.

Friedman, B.B., & Settel, J. (1994). What the classroom teacher needs to know about children with chronic medical problems. *Childhood Education, 70*(4), 196-201.

Kaffenberger, C.J. (2006). School reentry for students with a chronic illness: A role for professional school counselors. *Professional School Counseling, 9*(3), 223-230.

Klingner, J.K., Ahwee, S., Pilonieta, P., & Menendez, R. (2003). Barriers and facilitators in scaling up research-based practices. *Exceptional Children, 69*(4).

Knight-Madden, J.M., Lewis, N., Tyson, E., Reid, M.E., & MooSang, K. (2011). The possible impact of teachers and school nurses on the lives of children living with sickle cell disease. *Journal of School Health, 81*(5), 219-222.

Kosko, K. W., & Wilkins, J. L. M. (2009). General educator's in-service training and their self-perceived ability to adapt instruction for students with IEPs. *The Professional Educator, 33*(2), 1-10.

Maccini, P., & Gagnon, J. C. (2006). Mathematics instructional practices and assessment accommodations by secondary special and general educators. *Council for Exceptional Children, 72*(2), 217-234.

McDougall, J.K., King, G., de Wit, D.J., Miller, L.T., Hong, S., & Offord, D.R. (2004). Chronic physical health conditions and disability among Canadian school-aged children: A national profile. *Disability and Rehabilitation, 26*(35-45).

Moonie, S.A., Sterling, D.A., Figgs, L., & Castro, M. (2006). Asthma status and severity affects missed school days. *Journal of School Health, 76*(1), 18-24.

Olson, A. L., Seidler, A. B., Goodman, D. , Gaelic, S. , & Nordgren, R. (2004). School professionals' perceptions about the impact of chronic illness in the classroom. *Arch Pediatr Adolesc Med, 158*, 53-58.

Sexson, S.B., & Madan-Swain, A. (1993). School reentry for the child with chronic illness. *Journal of Learning Disabilities, 26*(2).

Shaw, S., & McCabe, P. (2008). Hospital-to-school transition for children with chronic illness: Meeting the new challenges of an evolving health care system. *Psychology in the Schools, 45*(1), 74-87.

Taras, H., & Potts-Datema, W. (2005). Chronic health conditions and student performance at school. *Journal of School Health, 75*(7), 255-266.

Thies, K.M. (1999). Identifying the educational implications of chronic illness in school children. *Journal of School Health, 69*(10).



730 Peachtree Street, NE
Suite 820
Atlanta, GA 30308
(p) 404-968-8008
(f) 404-897-3850
www.kdhrc.com
publicaffairs@kdhrc.com
Facebook.com/kdhresearch
Twitter.com/kdhresearch



LOUISE C. PALMER is a former senior research associate at KDH Research & Communication.



ROSA M. STEEN is a research associate II at KDH Research & Communication. Ms. Steen's research focuses on vulnerable populations and Latino health.



ERIC C. TWOMBLY is a principal research associate and the Director of Organizational Studies at KDH Research & Communication.



KRISTEN D. HOLTZ is the founder and president of KDH Research & Communication. Her research and applied work focus on the development and evaluation of innovative approaches for health promotion, disease prevention, and substance abuse education.

KDH RESEARCH & COMMUNICATION is a non-partisan, public health, and public policy institution. The goal of the "Informing Public Health" brief series is to disseminate innovative, objective, and timely information to solve public health and other social issues.

The views expressed here are those of the authors and do not necessarily reflect those of KDH Research & Communication, its board, or funders.

Permission is granted for reproduction of this document with attribution to KDH Research & Communication.