

EDITORIAL

Applying the Findings of Public Health Research to Communities: Balancing Ideal Conditions With Real-World Circumstances

Jaya K. Rao, MD, MHS

Suggested citation for this article: Rao JK. Applying the findings of public health research to communities: balancing ideal conditions with real-world circumstances. *Prev Chronic Dis* 2008;5(2). http://www.cdc.gov/pcd/issues/2008/apr/07_0119.htm. Accessed [date].

I have always been fascinated with quilts. The geometric patterns and vibrant colors of quilt tops remind me of the view through a kaleidoscope (Figure 1). As a quilter, I now realize that visually appealing optical illusions result from the balance of the colors, tones, and designs of fabrics within the quilt, and selecting and combining fabrics for a quilt is an art form itself. I find the boundless possibilities of fabric selection and combination the most exciting part of quilt making because I have the chance to imagine my finished quilt.

I am not alone. All quilters use their imaginations when picking fabrics for quilt projects. Nowhere is this more evident than in the classes I take at a local quilt shop. Just seeing a sample quilt is usually enough to entice me to pay the registration fee. All students bring their fabrics to the first class, and we begin the same way, ready to receive instructions in cutting and sewing the pattern from the teacher. By the end of the last class, however, our different visions become apparent as each person holds up his or her quilt: light blues and lavenders peppered with bold maroon geometrics (Figure 2); striking African block prints in shades of black, brown, and ivory; simple cotton prints in baby pastels; or any other combination imaginable. The quilts are united by a common pattern, but each is unique and beautiful in its own way.

Quilts celebrate the myriad choices of individual quilters applied to the uniform elements of a quilt pattern. At the



Figure 1. Royal Star quilt based on pattern by Debby Kratovil and pieced by the author. Photography by James Gathany, Centers for Disease Control and Prevention.

same time, we understand that our choices need balance — that large, bold prints can overwhelm delicate quilt patterns and that Christmas colors are not appropriate for a patriotically themed quilt. Applying the findings of public health research to the needs of communities requires similar attention to balance, but in public health, the balance is struck between idealized study conditions and real-world circumstances. This balance is the key to understanding the concepts of internal validity and external validity in research design. With the CONSORT (Consolidated

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the U.S. Department of Health and Human Services, the Public Health Service, the Centers for Disease Control and Prevention, or the authors' affiliated institutions. Use of trade names is for identification only and does not imply endorsement by any of the groups named above.

as important aspects of external validity that should be reported (10):

1. Recruitment and selection procedures, participation rates, and representativeness of study participants, intervention staff, and delivery settings.
2. Level and consistency of implementation among program components, settings, staff, and time.
3. Effect on a variety of outcomes (11), especially outcomes important to populations, practitioners, and decision makers (e.g., quality of life, program costs, adverse consequences).
4. For follow-up reports, information on the rate of attrition at all levels (i.e., study participants, intervention staff, and delivery settings), long-term effects on outcomes, and program institutionalization, modification, or termination.

Many of these elements are already part of *Preventing Chronic Disease's* guidance to authors of community case studies. This journal also endorses increased reporting on external validity in original research reports. To support such reporting, we

1. Encourage all authors submitting manuscripts to report on the recommended items related to external validity,
2. Ask reviewers to consider external validity when critiquing manuscripts,
3. Encourage the submission of articles that exemplify complete and thorough reporting on generalizability and external validity.

Experienced quilters can examine a pattern, visualize an array of fabrics that will result in an appealing quilt, and recognize the effort required to complete the work. Likewise, decision makers should be able to review reports of public health interventions and understand how these interventions might operate in their own community. Information on factors such as resource requirements, participation rates, and program sustainability are essential to help readers understand the applicability of public health interventions to their communities. By improving our reporting of external validity, public health practitioners and researchers will benefit as will the people they serve.

Acknowledgments

The author thanks Dr Lynne Wilcox for her comments on earlier versions of this editorial.

Author Information

Jaya K. Rao, MD, MHS, Centers for Disease Control and Prevention, 4770 Buford Hwy NE, MS K-45, Atlanta, GA 30341. Telephone: 770-488-5091. Email: jrao@cdc.gov. Dr Rao is the Science Editor Fellow at *Preventing Chronic Disease*.

References

1. Moher D, Schulz KF, Altman D. The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomized trials. *JAMA* 2001;285(15):1987-91.
2. Shadish WR, Cook TD, Campbell DT. *Experimental and quasi-experimental design for generalized causal inference*. Boston (MA): Houghton Mifflin; 2002.
3. Glasgow RE, Green LW, Klesges LM, Abrams DB, Fisher EB, Goldstein MG, et al. External validity: we need to do more. *Ann Behav Med* 2006;31(2):105-8.
4. Glasgow RE, Emmons KM. How can we increase translation of research into practice? Types of evidence needed. *Annu Rev Public Health* 2007;28:413-33.
5. Green LW, Glasgow RE. Evaluating the relevance, generalization, and applicability of research: issues in external validation and translation methodology. *Eval Health Prof* 2006;29(1):126-53.
6. Glasgow RE, Klesges LM, Dziewaltowski DA, Bull SS, Estabrooks P. The future of health behavior change research: what is needed to improve translation of research into health promotion practice? *Ann Behav Med* 2004;27(1):3-12.
7. Rao JK, Anderson LA, Inui TS, Frankel RM. Communication interventions make a difference in conversations between physicians and patients: a systematic review of the evidence. *Med Care* 2007;45(4):340-9.
8. Glasgow RE, Lichtenstein E, Marcus AC. Why don't we see more translation of health promotion research to practice? Rethinking the efficacy-to-effectiveness transition. *Am J Public Health* 2003;93(8):1261-7.
9. Glasgow RE, Green LW, Ammerman A. Final summary and recommendations from meeting of health

journal editors on external validity reporting issues: Chapel Hill, North Carolina, April 17-18, 2006. <http://www.re-aim.org/Documents/Editors%20Mtg%20synopsis%20-%20July%202006.pdf>. Accessed May 29, 2007.

10. Glasgow RE, Green LW, Ammerman A. A focus on external validity. *Eval Health Prof* 2007;30:115-7.
11. Tunis SR, Stryer DB, Clancy CM. Practical clinical trials: increasing the value of clinical research for decision making in clinical and health policy. *JAMA* 2003;290(12):1624-32.