

COMMENTARY
BY
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Dr. Walker and his colleagues have provided early glimpses of what is likely to be an important study examining risk factors and mediating/moderating processes underlying alcohol use among American Indian adolescents and women. Their presentation deserves resounding accolades both for tackling an important research question with a powerful, although challenging, design and for providing a rich description of their process in doing so. In addition, their work naturally leads to a discussion of several lacunae still plaguing longitudinal research.

Accolades

The work of Walker and his colleagues advances previous efforts in several crucial ways. First, it focuses on an *urban* Indian sample. Since urban Indians represent half of the nation's Indian population, thorough investigations of developmental processes within this group are important. We need to understand both the similarities and differences in the lives of urban Indian youth and families compared with the lives of those living on or near a reservation. We should not automatically assume that risk and mediating processes such as ethnic identity, community attitudes, or participation in cultural activities will operate similarly in such different settings.

A second strength of this study is the two-pronged approach to generating a sample. Much legitimate criticism has been leveled at studies relying solely on school-based samples. Those children and adolescents who are present in and sufficiently connected to schools to participate in research conducted there are likely to represent the "cream of the crop" — those from the most stable living situations, the most organized families, and in general, the healthiest children. When researchers rely solely on school-based samples, we give no voice to those who live in more stressful environments, who are already experiencing troubles, and who are already feeling disconnected or pushed away from school. While the authors' child sample was younger than those most vulnerable to this criticism, they still sought a non-school-based sample to supplement their school sample. Going this extra mile is exemplary and will speak legions to concerns about generalizability as causal models are analyzed and interpreted.

Third, the importance of gathering longitudinal data cannot be overemphasized. Cross-sectional data can offer important snapshots of trends across time. Yet only data gathered repeatedly from the same participants will permit an understanding of individual-level development

that is essential to building relevant and effective treatment, prevention, and promotion programs. Despite its importance, though, longitudinal designs present myriad obstacles, obstructions, and opportunities for failure. Not surprisingly, few researchers have tackled such designs — and Walker and his colleagues have admirably related a number of the trials and tribulations they have encountered in trying to implement their longitudinal design. In many areas, they provide important details about what worked, what didn't work, and why. Most important, their follow-up rates are phenomenal. We can all learn from their successes.

Lacunae

In reading this article, and thinking about NCAIANMHR's longitudinal work through the Voices of Indian Teens and Pathways of Choice projects (Mitchell et al., in press), four broad lacunae or gaps emerge: (a) methods for handling missing data points, (b) how to deal with inconsistent answers, (c) inclusion of culturally relevant constructs and measures, and (d) responsibilities to the communities. Each of these is relevant to any longitudinal research effort, and all need our best thinking about how to handle them.

Missing Data Points

The more times we try to find research participants, the more pervasive concerns about missing data points become. Clearly, Walker's follow-up rates to date do not raise this concern. However, many others will have less stellar follow-up rates, and will need to consider analytic options. Once we fail to find a respondent in a longitudinal design, is the only choice to eliminate that person from the cohort for the remainder of the study? If so, the representativeness of the sample quickly dissipates, since those participants who are under greater stress and are more troubled are likely to participate less consistently. However, a number of research participants are likely to move in and out of the research sample across the years, and we need to stay poised to include as many of those as we can *whenever* they may appear. Yet, many of the most commonly utilized statistical techniques are not well equipped to incorporate missing data points easily. Thus, we need to be creative about how to include these people. For example, we could discern how they differ from those who participate more consistently; we can then explore different ways to compensate with "substitute" data points based on data from those subgroups which most resemble those who have fewer data points. In addition, newer analytic strategies such as hierarchical linear modeling (Bryk & Raudenbush, 1992) — which models individual-level parameters of change rather than average change across subjects — holds promise in beginning to deal with such problems.

Inconsistent Answers

The more often people are asked the same questions, the more likely they are to give inconsistent answers. Within one data collection period, researchers have ways of assessing this: asking several questions about the same construct, statistics such as Cronbach's alpha help to determine the internal consistency of answers to that group of questions. Answering the same question *across time*, though, raises different issues. Within a longitudinal design, we hope to differentiate inconsistent answers from true change. Some inconsistencies in fact cannot be differentiated from change: consider a "not at all like me" to "very much like me" scale from 1 to 5; if a teen answers "5" at Time 1 and "1" at Time 2, is that an inconsistent answer or a sign that something in that youth's life has changed dramatically? Using quantitative research designs, we simply cannot know; we generally just accept the answers. However, some inconsistent answers cannot be as easily accepted: at Time 1, a teen says one of her parents died at some time in the past; at Time 2, she says that no parent has ever died. What might this mean? Perhaps she answered incorrectly at one of the time points; perhaps her family configuration changed, and she is simply thinking of different people the second time. As before, we can't know from her responses in a survey or interview. More importantly, though, what shall we do with her data? We could simply delete all of her information, and information from any other participant who answers any such questions inconsistently across time. Analytically, this approach is a conservative one, helping to reduce the potential instability of subsequent statistical tests. However, if answering inconsistently is related to other important variables — e.g., gender, age, poverty, family stability — such elimination introduces a number of new and equally serious biases threatening the generalizability of the results from the sample to the population of inference or to other populations. We again need to grapple with meaningful ways to try to keep such data in our models.

Cultural Relevance

The study described here has thoroughly utilized current empirical literature to select measures which are psychometrically strong within this Indian sample. In this way, the researchers have focused on culturally *appropriate* measures of constructs reported to be important in the general population. This is an absolutely critical first step, and the authors are to be commended for their work. However, a second step has not been taken: incorporating culturally *relevant* constructs and measures — those aspects of adaptive and maladaptive development which represent the "epicenter" or heart of satisfying, happy, and healthy life within Indian communities. For example, is "religiosity" the most relevant construct to capture the spiritual aspects of lives within an Indian community? Do questions about "religious affiliations" and "attendance at religious activities" capture the essence of what for many is likely to be a very rich, complex, and powerful aspect of

life? Perhaps “spirituality” is a better construct — one closer to what community members would recognize as a critical mediating process protecting against substance abuse. We need to utilize community members more integrally — through key informant interviews, or focus group discussions, or advisory committees — to help guide selection of the constructs of greatest relevance and to help determine the best ways to ask questions about those constructs.

Responsibilities to the Communities

Longitudinal designs require a research “presence” within a community over a long period; maintaining contact with participants across long periods of time cannot be accomplished by simply showing up on occasion, as the research design dictates. With longitudinal designs, the community is not simply another “laboratory”. To conduct longitudinal research within communities — any communities — we need to build and nurture relationships between researchers and community. For instance, we need to make special efforts to relay the importance of the research and findings that are emerging *as they emerge*. In community-based research, waiting until all of the data are collected, cleaned, analyzed, and interpreted is a luxury we can ill afford. Instead, we need to provide feedback in meaningful formats — formats that are responsive to the interests and needs of the community and the research participants, while not compromising needs of the research design. Such efforts rarely include the scientific manuscripts so central to the professional advancement of most researchers. Yet if we are thoughtful and sensitive about community involvement in a variety of aspects of the research process, we may also be offered chances to participate in special ways in the community itself. Without a doubt, such opportunities are the rare and precious rewards of a community researcher.

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