

## **Practice-Based Evidence: A Novel Concept for Self-Report Physical Activity Measurement**

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The 2-day meeting held in Bethesda, MD on self-report physical activity covered a multitude of topics to understand the current scientific evidence and craft recommendations for future research. Although much has been done, more research remains to be conducted to develop the most reliable and valid self-report physical activity instruments and also to develop feasible methodologies to employ the instruments across multiple populations and settings. Once data have been collected, though, there is the ongoing challenge of disseminating such information to researchers, students and trainees, and, ultimately, practitioners. As self-report physical activity measures are being used in the field, there is additionally an ever-present need to give feedback to researchers so that these measures can be further refined. In this commentary, we suggest ways and provide an example to augment collaboration between researchers and practitioners to construct a practice-based evidence for self-report physical activity measurement.

The “research-to-practice” pathway typically results in what is referred to as evidence-based practice. Evidence-based practice is associated with recommendations being developed once an adequate amount of quality research exists that can be synthesized, analyzed, scrutinized, and interpreted.<sup>1</sup> The ultimate goal is the conscientious, explicit, and judicious use of current best evidence in making decisions. Indeed, we now have evidence-based medical practice,<sup>2</sup> evidence-based public health practice,<sup>3,4</sup> and, more recently, evidence-based physical activity interventions.<sup>5</sup> The recommendations, however, are often viewed with caution as the precise understanding of how to implement them outside of the sterile and controlled research environments from which they emanate to the real world settings of practice are extremely limited in most cases. As a result, there have been calls for more systematic translation and dissemination research to fully grasp how recommended

procedures, policies or programs can be implemented by practitioners.<sup>3,6,7</sup> In addition, careful attention to and documentation of modifications and adaptations of the research-derived approach as it is implemented in practice is required as resources, timelines, professional experience of staff, characteristics of participants, and other factors may vary widely between the research and practice settings.<sup>8</sup> Certainly, one protocol size does not fit all!

Translation and dissemination research is one method to explore the implementation of programs initially incubated with funded research in the field of public health practice. However, the need to more rigorously evaluate programs being delivered by practitioners has also been suggested.<sup>1</sup> Termed, practice-based evidence, such knowledge informs the delivery of field-based programs and forms the basis of a feedback loop to not only better inform future practice, but also new research. For example, the tactic of thorough evaluation has recently been employed to gain deeper understanding of how communities, schools, and other entities can effectively implement environmental and policy strategies to improve physical activity and healthy eating in children, as well as identify areas where additional research is warranted.<sup>9</sup> To date, this type of endeavor has not been connected to any form of physical activity measurement.

As noted by many who presented at the NCI/ACSM/CDC-sponsored meeting on self-report physical activity, the need to strengthen the evidence-based practice in physical activity measurement is paramount. Some means to attain this goal include the following: 1) conduct high quality reliability and validity studies, 2) develop multi-disciplinary teams to address issues of culture, language, cognition, and literacy, 3) include practitioners on research teams, 4) house a well-supported clearinghouse of self-report physical activity instruments, 5) enhanced training on physical activity measurement, and 6) encourage journal editors to accommodate a full description of the processes by which a self-report physical activity instrument is to be administered (eg, via an appendix or web link). These and other advancements will be welcome additions to the field, but even more may be needed.

We suggest the application of the concept of practice-based evidence to help advance the field of self-report physical activity measurement to develop the best evidence to inform decision-making. Such a call to action

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primarily, but not solely, rests on the shoulders of public health and other practitioners who desire to monitor physical activity, especially changes in physical activity behavior resulting from an intervention. Self-report physical activity measures can be administered more efficiently than objective physical activity methods in large groups of participants with regard to cost, staff training, participant burden, and time. Thus, they will remain a significant contributor to population-based surveillance, and program/intervention evaluation, particularly in adult populations. The question lingers, however: “Will the concept of practice-based evidence for self-report physical activity measurement be accepted by researchers and practitioners?”

The answer to that question lies in forging meaningful interactions between researchers and practitioners by the following examples: 1) establishing professional work connections between researchers and practitioners, 2) improving the value practitioners have in performing detailed documentation and evaluation of self-report physical activity measurement processes, and 3) establishing outlets for practitioners to share findings.

Researchers and practitioners both have key roles to play in advancing practice-based evidence as it relates to physical activity measurement. Practitioners may wish to consult with developers or experienced users of self-report physical activity instruments to determine suitability for their project and target population, as well as to gain insights on how to most effectively implement procedures to obtain, manage, analyze and interpret data. Researchers should strive to be available for such consultation, which may be done for little monetary compensation. Furthermore, those involved in research should encourage practitioners to closely monitor and document the procedures they employ when using self-report physical activity tools and reiterate the importance of such information to improve the overall field of physical activity measurement. Graduate students and post-doctoral trainees may play an important role in this process as they often interact both with senior scientists, as well as community leaders and practitioners when research projects are implemented in community settings. Thus, students and trainees working on the “front-lines” of research and physical activity programs have the opportunity to help translate information from research to practice and vice-versa.

As these research-practice relationships are established, there will be a much greater likelihood of identifying channels for disseminating lessons learned. Such channels may be presentations at professional meetings, addendums to peer-reviewed publications or technical reports, or submissions to credible physical activity measurement clearinghouses. We provide a brief example based on one of the authors experiences.<sup>10</sup> An opportunity presented itself to facilitate the delivery of physical activity programs to older adults in several communities. There was a strong desire to monitor changes in physical

activity during a 12-month intervention, and a self-report questionnaire was deemed appropriate due to the large number and varied geographic location of participants. The identified tool had previously been used in community-based research projects with reliability, validity, and sensitivity to change results having been published. However, before making a final decision, the researchers involved with developing the questionnaire were consulted. These researchers were extremely pleased to have been contacted and provided significant time and consultation to the project. Together, the researchers and practitioners worked to construct adaptations to the instrument before utilization. These adaptations included enlarging the font size, modifying the instruction page with a more real-life appearing example, inserting shading of alternate lines of text and arrows to better ensure attainment of complete and accurate data, adding culturally relevant activities for one of the target populations, and having the questionnaire translated into Spanish and then back-translated into English to verify exactness. These adaptations have been made known to others over time by word of mouth, although there never has been a formal attempt to publicize or disseminate the adapted versions of the instrument. This is unfortunate as this questionnaire is still highly utilized by many doing physical activity research and promotion with older adults. Having an avenue to share the practical findings will serve to inform the practice-based evidence. Fortunately, such an opportunity now exists with the *Journal of Physical Activity and Health's* public health practice section.

The process described and information obtained in the example above was extremely well-suited to augment the practice-based evidence of self-report physical activity. We strongly encourage other researchers and practitioners to contemplate how they can also provide meaningful contributions to the field. One example is to have practitioners add to the field by writing methodological papers detailing the success (or failure) of adaptations and implementation of self-report physical activity measures. We further recommend that journals consider including “lessons learned from the field” sections where both researchers and practitioners can describe the processes and adaptations required to effectively utilize self-report physical activity measures.

Researchers will continue to rigorously investigate the reliability and validity of self-report physical activity instruments, as well as report on their use in physical activity interventions. However, practitioners need to be engaged to gain a deeper understanding of how to successfully employ such tools in multiple venues and populations. The extra time and effort required by practitioners to evaluate and report on their use of such physical activity measures will lay the foundation for practice-based evidence that is greatly desired, but sorely lacking. We urge all involved entities to leverage their interests to help create this knowledge base to strengthen the field of self-report physical activity measurement.

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