The role of theory in clinical prevention research

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Globally, the top causes of preventable death are related to lifestyle such as sedentaryism, diet, smoking, alcohol use, and unprotected sex. Primary care clinicians address these prevention dilemmas through the judicious use of clinical practice guidelines, critical observation and knowledge of local community conditions. Definitions of prevention science emphasize its interdisciplinary framework and research-based theoretical models of risk and protective processes. The goal of prevention research is to develop a science-base to prevent or ameliorate high-risk behaviors, occurrences of disease/disorder/injury, or the progression of detectable but asymptomatic disease. Prevention research, an important focus of Family Practice, is represented in this issue in reports of prevention services research by Graffy et al., Debar et al., and Murray et al., behavioral research by Wilson et al. and Temple-Smith et al., and screening and treatment research by D’Ambrosio et al. and Lagro-Janssen et al.

Successful prevention involves partnership between clinicians and patients within a shifting landscape of changing costs and benefits. The need to coordinate medical, social and behavioral resources in a comprehensive approach adds complexity to already taxed primary care systems. Health services research often involves multiple components and pathways broken down into critical factors. With these challenges in mind, one might ask, “Does theory have a role to play in reducing the complexity of prevention research that aims to address the physical, psychological, and social nature of the disease causality and prevention?”

Theory links primary care clinicians and researchers in the dual goals to improve patient outcomes and advance science. Theory, whether grounded in experience, ideas, and hunches or in formal models, provides a systematic approach to health improvement often improving the participatory exchange between clinicians and researchers. Theory provides a common language that focuses the balance between practice and science. Theory also links the dual quest to use evidence-based practice and practice-based evidence to maximize internal and external research validity. Examples of formal theory related to changing clinician or patient behavior are numerous and include Health Behavior Model, Social Cognitive Theory, Transtheoretical Model, and clinician-patient communication models. Clinical systems or organizational change is addressed in a range of organizational development and change theories and models of innovation adoption and diffusion.

Theory is often underreported in published research despite calls for a more explicit integration of theories and conceptual frameworks in medical research. Without theoretical detail, efforts to aggregate results in systematic reviews and to develop programs of research are hampered. Publication guidelines prescribe the inclusion of research models and theories in the background sections of publications. The plea for theoretically informed research occurs throughout medical, public health, and behavioral domains.

In what ways can theory support prevention research and practice for clinician researchers unfamiliar with theoretical models? First, theory enables clinicians and researchers to precisely describe and operationalize key factors and associations during the research development phase. Since multiple factors contribute to preventive behavior, theory specifies the context and boundaries of the research setting, such as the health system, the clinic, the community and family, and the individual. Within defined contexts, we can develop predictions of organizational, social, psychological, or cultural interactions. It is through the hypothesized relationships that we can best examine the dynamics or mechanisms of prevention. Precise measures of key constructs and outcomes, along with well-defined associations, improve research precision.

Intervention planning and preliminary testing prior to large scale implementation is assisted by a well-explicated theoretical model. Iterative cycles of testing and model refinement occur during testing in diverse settings and populations and capture with-in group differences or setting-level variables that assist in intervention adaptation during the implementation phase. At this stage new collaborative relationships or organizational linkages are established and a conceptual model can help partners understand respective roles and accountabilities for the planned intervention. Participatory research methodology helps clinicians and researchers work more effectively with community experts to negotiate roles to integrate theoretical perspectives at all stages of research.
Finally, key theoretical constructs and associations can be used in efficacy trials, tests of effectiveness, and adoption and sustainability studies. The theory’s developmental stage will inform the choice of study design and advance the goal of understanding causal relationships. Proximal outcomes may be more sensitive indicators of intervention effect and more easily measured than long-term outcomes. Theory is useful in explaining the conditions that contributed to minimal or no measurable intervention effect and directs attention to needed change to improve outcomes. Finally, a study’s theoretical model assists in the assessment of the benefits and costs of engaging in a specific prevention practice.

Going forward, primary care practice-based research networks, active internationally (see Kruschinski et al.), continue to be well positioned to apply theory to clinical research, including studies focused on preventive practices, health services improvement, or treatment effectiveness. Practice-based research networks have the necessary community context for translation and dissemination studies and engage a significant proportion of racially and ethnically diverse population. Affiliations with academic researchers and credibility with community leaders are assets that save research costs of engaging in a specific prevention practice.

References


