THE TERRA MODEL (TRANSLATIONAL ENVIRONMENTAL RESEARCH IN RURAL AREAS): COMPARISON OF RESEARCH UTILITY ADDRESSING SUBSTANDARD HOUSING IN THE U.S. AND PERU

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Purpose: The TERRA model was developed to inform and provide structure for family-level environmental health research conducted in rural settings. The model was developed iteratively with input from nursing scientists at Washington State University and Montana State University. The goal of the model was to provide clarity in regard to key concepts addressing environmental health disparities. Because environmental health disparities are inherently multi-dimensional, the model differentiates between macro- and ecologic-level concepts and those more proximal to family-level perceptions and actions.

Description of theory: Concepts in the TERRA framework include macrodeterminants, environmental health inequities, environmental health risks, environmental health mental models, interventions, and outcomes. Macrodeterminants are defined as ecologic-or societal-level antecedents of environmental health and include: 1) physical-spatial characteristics, 2) economic-resource opportunities, and 3) cultural-ideologic norms. Macrodeterminants set many of the parameters for family level environmental health, including opportunities for employment, housing, and health. Family level environmental health inequities occur when macrodeterminants and societal-level opportunities are differentially distributed so that those who are poor, underemployed, marginalized, or act outside prevailing social norms lack access to fundamental health resources. Household environmental health risks are multi-faceted and can range from structural problems (e.g., inadequate weatherization) to agent-specific risks addressing carbon monoxide, radon, and lead. Nursing interventions are most effective when they address environmental health risks as well as family members’ perceptions of those risks.

Internal consistency: To date the TERRA model has been used to broadly inform family-level intervention research. As a result it has undergone neither empirical testing nor expert review. The model was used in a 4-year randomized controlled trial in which a home-based intervention was tested. Recently the TERRA model has been used by faculty in Peru to inform programs addressing wood stoves and respiratory health. Peru faculty adapted the Terra model to address the context, scope, and goals of their own research. Compared with efforts in the U.S., the Peru work is broader, addressing housing quality as one facet of economic development in rural communities.

Logic linking the theory to practice: Because of the broad nature of TERRA concepts, there is evidence that the model can guide research and practice initiatives in rural Peru, the U.S., and elsewhere.

Conclusions and implications for rural practice: The lack of models, frameworks, and approaches applicable to family-level environmental health research is extremely limited. There is benefit in advancing a theoretical as well as an empirical dialog about the complex challenges that rural low-income families face as they work to reconcile limited resources with competing needs addressing health access and housing adequacy.

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