



Response to Invited Commentary

Riley et al. Respond to “Co-occurring Health Conditions and Life Challenges”

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We appreciate the insightful commentary provided by Dr. Coughlin (1) that accompanies our article (2) on the overall health status of homeless and unstably housed women. In particular, we commend the way in which Dr. Coughlin frames the challenges surrounding comorbidity within this population. As he points out, the burden of mental and physical illness is extremely high among homeless women, and we agree that more attention should be given to the presence of trauma-related disorders when considering the conditions impacting their health and well-being. Each condition does not occur in isolation; rather, the conditions influence each other as well as the risk for developing additional comorbidities.

Co-occurring disorders are less often studied than specific conditions for a variety of reasons; among them are the challenges of valid measurement and deduction of meaningful results. For example, issues of nonindependence, confounding, and interaction between the conditions must be taken into account (3). An approach commonly used to measure comorbidity is a sum of the conditions present; however, unless weighted, it will assume the same influence from conditions that have different impacts on health, will not account for interaction between conditions, may be susceptible to ceiling effects of some condition measurements (4), and may change over time (5). Similarly, assessing the influences of comorbidity on a separate outcome is complicated. Simple adjustment approaches, such as using multiple interaction terms, render the interpretation of results challenging, if not untenable. Conversely, if adjustment is not made for the influences of comorbidity, results may inappropriately assign causal effect to a single condition, which may result in negative clinical implications (6).

The overwhelming number of interrelated comorbidities among unstably housed persons creates a paradox. A better understanding of comorbid conditions is needed to improve prevention, intervention, and effective treatments, yet their complex associations make interpretation of their combined and condition-specific effects a formidable challenge. We join

Dr. Coughlin in calling for more attention to comorbid conditions among unstably housed individuals. We further suggest that this call embrace a combination of approaches, including the assessment of specific conditions, combinations of co-occurring conditions, and indices of overall health status, as multiple perspectives will offer a more comprehensive understanding of this complicated situation.

By assessing overall health status, our paper offers a broad view of factors that influence the total burden of illness that, by its nature, integrates the effects of all disorders present in an individual (including interactive effects). As the objective of our study was to measure overall health status, analyses did not include specific conditions as outcomes of interest, nor did they consider influences of specific conditions as exposure variables because the effects were part of the outcome measure. Overall, this analysis offers a different type of information from those considering specific health conditions. For instance, although the assessment of 1 or multiple co-occurring conditions may provide guidance for diagnosis and treatment, understanding influences on overall health status provides context for a treatment plan. In our study, unmet subsistence needs had a stronger influence on overall health than a variety of previously established predictors and, thus, the implication is that the treatment plans offered may not be as effective at improving overall health until an unstably housed woman's subsistence needs are met. We look forward to considering this analysis in combination with our forthcoming studies on specific mental health conditions. In addition, we hope that these results can be used with other condition-specific investigations to inform health-care delivery, research, and policies that improve the health of homeless and unstably housed women.

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