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Shifting from policy relevance to policy translation: Do housing and neighborhoods affect children's mental health?

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Abstract

The impact of housing and neighborhood context on children's mental health, as addressed by Flouri and colleagues [1], is an important, understudied topic in social epidemiology. Although the vast majority of this body of research has been descriptive, generating translational research is essential. This article offers guidance on interpreting evidence from observational studies for translation into policy, related to three policy-relevant elements of housing: receipt of affordable housing subsidies, the target population to which results generalize, and operationalization and modeling of neighborhood context. Policy translation is imperative for understanding which levers outside the health sector can be manipulated to change fundamental causes of mental health related to housing and neighborhood. Shifting from policy relevance to policy translation may be challenging, especially for understanding social causation in observational studies, but it's a necessary shift for improving population health.

Keywords

Neighborhood; policy; translation; social epidemiology; housing

Flouri and colleagues [1] address an important, understudied topic in social epidemiology: the joint role of housing and neighborhoods to produce mental health. Housing satisfies not only a basic need of shelter, but is a source of physical and chemical exposures, a source of psychosocial stress, and since homeownership is a primary source of household wealth, housing is a main component of socioeconomic position. Moreover, since housing units are inseparable from their location, neighborhood context is an integral aspect of housing.

Flouri's article improves on prior evidence on the health influence of housing and neighborhoods, including by leveraging a longitudinal design, by controlling for some variables that pattern residential selection, by focusing early in the life course, by testing both housing and neighborhood context, and by incorporating family context and processes as mediators. While all of these have been articulated as needs for strengthening the

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literature, an equally pressing need is translational research [2]. Since the vast majority of research on the social determinants of health has been descriptive, it is not clear which interventions or policies may best improve health. Even studies explicitly testing the effects of social or economic policies cannot guide us much because until recently, few policies have considered health in their logic models or as outcomes [3].

Translational research may be generated by studying housing policies, which generally fall into two categories, both of which are necessary to address housing and neighborhood inequality: place based or neighborhood revitalization interventions improve conditions in disadvantaged neighborhoods; and people-based interventions (often subsidies) relieve housing costs and expand the range of housing choice, to facilitate moves to better units and neighborhoods. Housing mobility policy is one promising people-based policy that alters housing and neighborhood context, as well as health. For example, the Moving to Opportunity (MTO) demonstration tested effects of randomizing a housing subsidy voucher to low-income families living in public housing within high-poverty neighborhoods, for health outcomes 15 years later. This experimental evidence is strong that mental health of women and their daughters benefited from moves into private rental units in lower-poverty neighborhoods. Some results are puzzling however, including that adolescent boys not only failed to benefit from these same relocations, but that their mental health was harmed [4]. This adverse effect is disturbing since this voucher-based program is based on the largest federal affordable housing policy in the US. Some research has shed light on these perplexing opposite effects of the policy by gender. For example, not all boys were harmed; the harm was concentrated in boys in vulnerable families at baseline, including those with health or developmental problems [4]. Such findings are policy relevant because they identify vulnerable subgroups who may need additional program elements in order to thrive with the policy.

While studies explicitly testing policies like MTO often have straightforward policy implications, less guidance has been provided for how evidence from observational studies can be interpreted for translation into policy. Three elements of housing in Flouri's article are particularly policy relevant: receipt of affordable housing subsidies, the relevant target population to which the results generalize, and operationalization and modeling of neighborhood context. I discuss implications for policy translation below.

Policy Translation of Affordable Housing Subsidies

Flouri's article tests whether social rental housing is associated with children's mental health. In the United Kingdom (UK), two affordable housing policies, each targeted at low-income households, are in great demand: (1) social rent housing, which is a place-based affordable housing policy, and (2) housing benefits, which are (people-based) government subsidies provided within the social security system to qualified low-income households to offset housing costs. These are important antipoverty policies; for example, social rental housing cuts housing costs in half, and provides renters with better physical environments and more tenure security compared to the private rental sector [5].

Despite the policy relevance of Flouri's social rent exposure, the degree to which the findings can be translated to policy depends on several assumptions for causal inference, including exchangeability and consistency. For example, there is likely violation of exchangeability between families receiving social rent, and those not. Indeed as the authors themselves suggest, given its low-income eligibility criteria, social housing at the individual level is a marker for disadvantage. Although income was collected in the Millennium Cohort Study, it was not modeled as a covariate in Flouri's analysis. Therefore, residual confounding by baseline socioeconomic position (namely income, but also unemployment or other measures of disadvantage) looms as a core limitation of interpreting the social rent coefficient in Flouri's models as causal. Notably, US populations receiving place-based housing assistance are vastly more disadvantaged, and exhibit worse health burdens, than the general population [6]. Therefore, it is unsurprising that Flouri and colleagues documented that children living in social housing exhibit markedly higher mental health problems than children living outside social housing. Such evidence aligns with a body of research on the income gradient in child development.

The consistency assumption for causal inference requires that the exposure be defined unambiguously, e.g. in terms of form or dose, and this assumption may be violated in observational studies [7]. A social exposure that is naturally occurring is usually not the same as (often discrete) exposures that could be manipulated by a policy or intervention. Policies can manipulate many different exposures, which may all be conflated in an observational study, and some of these exposures could inform policy. For example, one could test social rent paired with housing benefits compared to either or neither; or test length of time in social rent; or test its use during certain periods of life. Ultimately, a key goal for translation is to determine which elements of housing subsidies are causal for health, and which are simply correlates, given the clustering of disadvantage.

Policy Translation Given Generalizability

Aside from internal validity of findings, policy translation also concerns generalizability of findings. Heterogeneity in effects across subgroups can result in apparent disagreement between observational and experimental evidence [8]. For policy translation, it may not be relevant whether the causal effect is present among all populations, particularly if the policy is not a universal one; it is more relevant whether the causal effect is present among the subpopulation eligible for the policy. However, Flouri's study conflates the target population with the manipulable (policy-relevant) exposure. The counterfactual contrast that Flouri's study makes (at the individual level) is those living in social rent, compared to those living outside social rent, in a population based cohort sample (of all incomes). But those living outside social rent are not a true counterfactual to those in social rent, including primarily because many are not income-eligible for the policy. The proper comparison is those living in social rent, versus not, among those eligible for the policy (assuming exchangeability). Therefore, honing the exposure, as well as the target population to which a policy would be applied, is necessary for policy translation.

Policy Translation of Neighborhood Context

Studies operationalizing single measures of neighborhood context may be less policy relevant than those operationalizing multiple combined indicators. Compilation measures emphasize the accumulation of opportunities (or disadvantages) across quality of life domains, and are conceptually appealing since households use multiple criteria to select a neighborhood, not just one. Opportunity mapping is one technique to characterize neighborhoods via compilation measures, derived from multiple quality of life dimensions, to identify access to opportunity rich residential areas. This method is being increasingly adopted by housing agencies and advocates to guide translation, including to target neighborhoods for affordable housing development, for neighborhood revitalization, and for household moves using housing subsidies [2,9].

A related issue for policy translation is the degree to which a neighborhood variable can be interpreted as causal, which as discussed above for the individual-level social rent coefficient, is limited by residual confounding. In the case of neighborhood exposures, violations of exchangeability are classified under the term “residential selection”, which has been discussed as the most debilitating problem plaguing neighborhood research [2]. In line with the majority of neighborhood effects research, Flouri did adjust for some residential-related selection by family’s own social housing, maternal education, ethnicity, and maternal age at first birth. But three strong selection factors are income, wealth, and residential preferences, which were uncontrolled, leaving the door open to bias, and constraining translation.

Notably – and this point is little discussed– there are still policy-relevant implications of self-selection of households into certain types of neighborhoods. An important goal of urban planners is to create neighborhoods that attract residents, in other words, to encourage self-selection [10]. Yet the problem remains that selection is nonrandom, but strongly patterned by race/ethnicity and socioeconomic position. So the disadvantaged cannot exercise the same degree of choice to select a high-quality neighborhood [2].

Conclusion

Policy translation is imperative for understanding which levers outside the health sector (e.g. in the housing or community development sector) can be manipulated, to change fundamental causes of mental health related to housing and neighborhood. Shifting from policy relevance to policy translation may be challenging, especially for understanding social causation in observational studies, but it’s a necessary shift for improving population health.

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