Addressing social determinants of mental health: a new era for prevention interventions

Kirkbride et al[1] provide a comprehensive overview of the social determinants of mental health. Their paper reviews the evidence for the causal influence of those determinants on population mental health and demonstrates the potential for prevention interventions that address those determinants across the life course. They argue convincingly that we stand at the threshold of a new era in prevention interventions for mental health globally – namely, those that focus on the social determinants of mental health.

Among the many contributions of their paper, several aspects stand out. First, the authors place a strong emphasis on a social justice framework when characterizing social determinants. As they point out, these are fundamentally a product of inequitable social and economic systems, which concentrate power and privilege in the hands of a few. Inequities in the distribution of mental health in populations are a product of experiences of exclusion and discrimination brought about by fundamentally unjust social systems. Second, the authors provide compelling evidence of causal links between social determinants and mental health outcomes, at both the individual and the wider social levels. These are documented with a strong emphasis on marginalized groups, which are frequently exposed to intersecting social determinants. Third, their review of the observational and intervention research strongly emphasizes a life course approach, demonstrating how early exposure to adversity carries lifelong mental health consequences, and why early intervention is so important. Fourth, they carefully document the evidence for social interventions that span the continuum of universal, selective and indicated prevention. Finally, their review demonstrates the modifiability of many social determinants, and the need to integrate a social determinants framework into existing, largely individually focused clinical treatments.

There are three key areas for future development of research on social determinants of mental health, which Kirkbride et al mention, but are worth highlighting here. The first is the need for more longitudinal observational research. Currently there is limited evidence on causal pathways linking social determinants to the mental health outcomes of populations. A recent study commissioned by the Wellcome Trust involves landscaping of longitudinal mental health datasets around the world and is a key step forward in advancing the field[2]. This study has compiled more than 3,000 longitudinal datasets from 146 countries, improving their accessibility and opening possibilities for further analysis and enrichment.

The second area for future development is the evaluation of prevention interventions that address the social determinants of mental health. Three key steps are necessary if we are to prevent mental illness by addressing its social determinants. First, we need to build more robust theoretical models, mapping out the pathways by which social interventions yield mental health improvements. These may include distal socioeconomic mechanisms (for example, the mediating role of income instability in the association between economic recessions and the incidence of anxiety disorders) and more proximal neuropsychological mechanisms (such as the mediating role of self-regulation in the relationship between multi-dimensional poverty and adolescent depression). Second, we need to design studies that can test these mechanisms, for example by conducting randomized controlled trials that include analysis of key mediators in our hypothesized causal models. In order to demonstrate that a mediator is a causal factor, there must be a temporal relationship between that mediator and the outcome, a dose-response association, evidence that no third variable causes changes in the mediator and the outcome, robust experimental research and a strong theoretical framework[3]. Third, it is vitally important that we share data across diverse settings, because context really does matter when it comes to addressing social determinants. For example, specific experiences of multidimensional poverty or humanitarian emergencies brought about by climate change will vary substantially by context and will require diverse measurement and intervention approaches. There are also likely to be diverse mediators which may serve as targets for interventions. All of this requires an inter-disciplinary effort, bringing together economists, epidemiologists, mental health specialists, neuroscientists and people with lived experience, to develop shared approaches to these complex challenges.

As an example of this effort, in the *Improving adolescent mental health by reducing the impact of poverty (ALIVE)* study, we are designing and evaluating a selective prevention intervention to reduce the incidence of depression and anxiety among adolescents living in urban poverty in Colombia, Nepal and South Africa[4]. Our hypothesis is that multi-dimensional poverty increases risk for depression and anxiety among adolescents both directly and through its negative impact on self-regulation. By self-regulation we mean the capacity to set goals and maintain goal-directed behaviour, despite emotionally salient and challenging environments[5]. Our four-arm pilot trial includes an economic intervention (cash transfers, financial literacy, negotiation skills, and information about returns to education); an intervention designed to strengthen self-regulation; an intervention that combines economic and self-regulation components; and a control arm. The study includes detailed cultural adaptation and validation of key measures, and strong involvement of adolescents in the design and delivery of the research in each country site.

The third key area for future development is research on the social determinants of mental health in low- and middle-income countries (LMICs). As Kirkbride et al point out, most of the evidence on the social determinants of mental health (including observational and intervention research) originates from the Global North. It is vital that this trend is reversed. Most of the world's poor and vulnerable populations live in LMICs. The world's children and adolescents are concentrated in these countries (90% of the world's 1.2 billion adolescents live in LMICs[6]), making the

argument for early life course interventions even more cogent. Although LMICs are highly diverse, they share a heightened vulnerability to looming climate change, conflict, and food insecurity. If we are to take seriously Kirkbride et al's call for a social justice approach to the social determinants of mental health, and develop population level interventions that have the potential to globally prevent mental health conditions such as depression, anxiety and psychosis, it is essential that greater research funding and policy attention is allocated to LMICs.

Kirkbride et al's paper is a landmark contribution that signals a growing community of practice across low-, middle- and high-income countries. Crucial for the future of this field is more robust engagement with policy makers and implementers in national governments and international aid agencies – such as multilateral development banks – to facilitate partnerships in funding, scaling up and evaluating the population level impact of interventions that address the social determinants of mental health.

Crick Lund
Centre for Global Mental Health, Health Service and Population Research Department, King's College London, London, UK; A.J. Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, South Africa

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Challenges in implementing interventions to address the social determinants of mental health

It is easy to agree with Kirkbride et al[1] that a causal link exists between social factors and later mental health. Indeed, when the term "social factors" is defined as broadly as it is in their paper to include biological exposures due to the physical environment, we know from population genetics that social factors (i.e., the environment) are the most important causes (i.e., heritability is less than 50%) of most mental disorders[2]. Furthermore, as genetic disorders cannot be prevented other than through lifestyle changes, it is easy to agree that broadly-defined social determinants are the most modifiable causes of mental disorders[3].

Much more interesting issues are those involving complexities in the implementation of interventions. To this point, even though broadly-defined social determinants (i.e., the environment) are more modifiable than other (i.e., genetic) determinants of mental health, this broad statement provides little guidance for action. It is important to appreciate in this regard that when "social factors" are defined as broadly as they are here, any policy is an "intervention". This means that the fields of macroeconomics, community psychology, and health care policy, as well as all policy decisions regarding such things as housing, preschool education programs, foster care and community policing, become of psychiatric interest. But these policies influence much more than mental health. And mental health is seldom a major consideration of policy makers in these areas. Even if it was, the population-level effects of these policies on mental health are largely unknown. And the complexities involved in providing even rough estimates of these effects are daunting.

Other complexities exist in designing interventions even in situations where causal effects are clear and where there are no competing interests across outcome domains. Indeed, there is often a trade-off between population optimality with respect to a point estimate and to a variance of the desired outcome. To illustrate, consider the question of where to build the next firehouse in a large metropolitan area where risk of a fire varies across neighborhoods (e.g., poor neighborhoods with older construction at higher risk), individual-level risk of death when a fire occurs also varies across neighborhoods (higher in neighborhoods with older construction), and expected number of deaths when a fire occurs varies in a different way across neighborhoods (e.g., higher expected number of deaths in high-rise buildings with many residents and exclusive egress via elevators than in smaller low-rise buildings). Given these and other inputs, operations research models can determine the optimal location for building the next firehouse to minimize overall population loss of life. However, the optimal location from that perspective might increase inequality of risk, which means that quite a different location would be selected if the goal was to equalize risk of death rather than to minimize loss of life. How do we decide which location to choose? The answer is anything but clear when competing considerations exist and resources are constrained.

Similarly difficult decisions are made every day on a smaller scale by practicing psychiatrists as they decide how to allocate their fixed clinical resources. These decisions are made in the context of higher-level decisions about allocation of health care resources (e.g., to community prevention vs. treatment). And these health care system-level decisions, in turn, are made in the context of even higher-level government decisions about the organization and financing of health care and the relative allocation of public resources across multiple sectors. Decisions at lower levels are inevitably constrained by prior decisions made at higher levels.

What are psychiatrists to do in the face of this complexity? Most psychiatrists focus on optimizing the resources available to them in their practice. Other psychiatrists consider social determinants of health in clinical decision-making[4]. And, at the extreme, some few psychiatrists change profession and become health care administrators or politicians to increase their impact on population