Social capital interventions in public health: moving towards why social capital matters for health

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Social capital is defined as the resources—for example, the exchange of favours, the maintenance of group norms, the stocks of trust and the exercise of sanctions—available to members of social groups. A social group can take different forms, such as a workplace, a voluntary organisation, or a tightly knit residential community.[1 2] Scholars have assumed that high stocks of social capital exert their effect on health outcomes in a multilevel fashion as it provides both individuals and communities with the resources to deal with adversities, which in turn is salutary for individual health outcomes.[3–5] Therefore, scholars and policy makers need to consider social capital as a starting point to improve individual health outcomes. Although a multilevel social capital intervention can be problematic to design, costly and difficult to implement, it may involve greater success affecting the environment of a whole group.

In this editorial, we first summarise the status quo of research on social capital interventions in public health. Second, we highlight that researchers have generally approached social capital from a somewhat simplistic and binary assumption that social capital is either beneficial or has no effect. We postulate that research may advance by empirically answering the question why and *how* social capital is related to health outcomes, as this question has been largely left unanswered.

SOCIAL CAPITAL INTERVENTION FRAMEWORK

We recently performed a systematic review in which we classified manuscripts developing social capital interventions with an emphasis on improving health outcomes. Yet, despite enthusiasm of policy makers for decades to implement social capital interventions, in this review we could only include 17 papers that analysed the effect of social capital interventions on health outcomes.[1]

In this systematic review, we developed a framework to distinguish between individual level, community level and multilevel social capital interventions and to investigate if in those interventions social capital served as a target, channel or mediator and segmenting variable. On the one hand, an individual level social capital intervention involves the exchange of resources between members of a social network.[6 7] As an example, Fujiwara *et al* developed a programme to create a home visitation service for mothers with newborns. The objective of the home visit was a health check-up for the newborn and the mother and consultation on parenting in general. This home visit programme used social trust and sense of security in the community, two forms of social capital, as mediators to reduce stress in mothers of newborns.[8] On the other hand, a social capital intervention at the community level should facilitate groups to organise and act as a collective.[9 10] An example would be the Kids First intervention. The vision of the programme is that vulnerable children enjoy a good start in life. Kids First brings the community together through conducting broad and targeted community consultations, and developing partnerships. The programme enhances institutional social capital by increasing social resources, in this case by hiring locally and encouraging staff to deepen connexions with the community.[11] A multilevel intervention is a combination of an individual and a community level intervention. An example of this type of interventions is to enhance social capital by tackling loneliness among elderly by building social networks at the intrapersonal level and promoting social participation at the community level.[12]

In the framework we developed, we propose that social capital can serve as a target, channel or mediator and segmenting variable of the intervention.[1] When social capital is the intervention target, the manipulation consists of activities that directly build or strengthen social capital. Channel or mediating interventions seek to leverage social capital that already exists or create new forms of social capital as an intervening factor between the intervention and the desired outcome. Segmentation involves the identification of subgroups in the population who may selectively benefit (or not) from interventions. Combining these two typologies yields a 2×3 matrix of possible intervention types, defined by the level of the intervention (at the individual vs community level, multilevel interventions involve a combination of the two levels) and the role of social capital in the intervention (ie, as the target, channel or the segmenting variable) (see figure 1). More details and examples of the role and level of social capital in our framework are developed in Villalonga-Olives *et al*.[1]

Importantly, our review revealed two omissions in research on social capital interventions in public health, namely a lack of research on the effects of multilevel interventions and a predominance of research on the direct effect of social capital interventions rather than indirect effects due to mediation or moderation effects of social capital interventions.

TOWARDS WHY COMMUNITY SOCIAL CAPITAL IS RELATED TO HEALTH OUTCOMES

Within this research, scholars increasingly apply multilevel regression models.[8 13 14] When possible due to data availability, multilevel analyses have been the way forward, as not taking into account the multilevel nature of public health research on social capital ignores the problem that individuals who live in the same social community share (community level) variance that may be different from individuals living in other social communities.[7 15] The advantage of multilevel regression analyses is that this type of analyses adopts the so called 'nested variance' in the statistical equation and accounts for it.

Nonetheless, multilevel regression analyses have left the question *why* or *how* social capital is related to health outcomes unanswered. For instance, the association between social community mechanisms that involve social capital and health outcomes may be mediated or moderated by social community mechanisms and/or individual psychosocial mechanisms (eg, individual coping, social support,[6 10] or individual health behaviour).[16] However, these indirect multilevel mechanisms are rarely the topic of empirical research. Although there are several ways to analyse multilevel mechanisms, we wish to highlight one type of analysis in specific that has the potential to unravel complex

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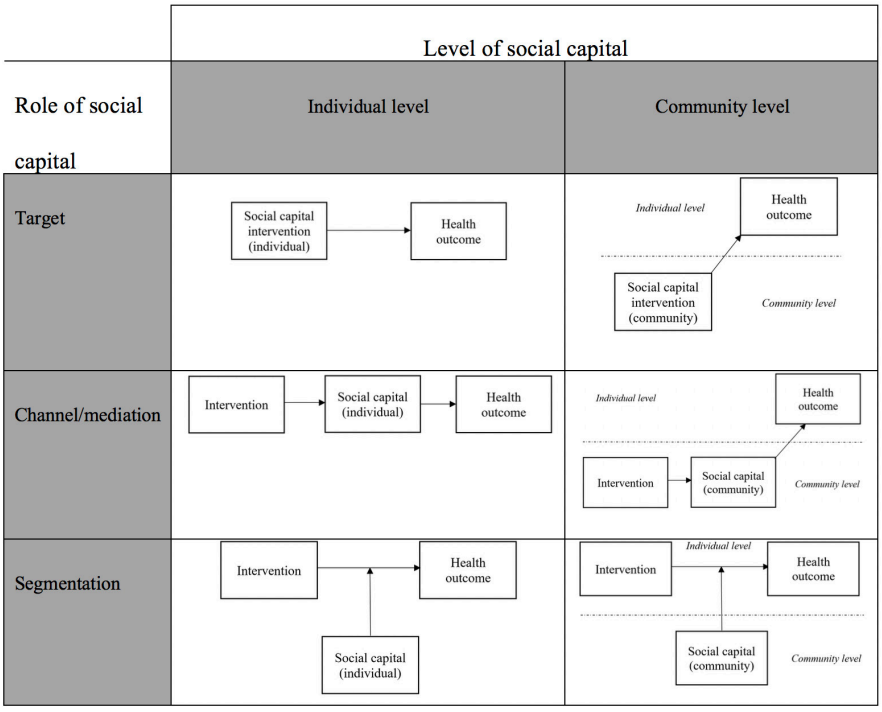

Figure 1 Classification of social capital interventions by combining two typologies. Multilevel interventions involve a combination of the individual and community levels.

sequential multilevel mechanisms: multilevel structural equation modelling (Ml-SEM).

Multilevel structural equation models allow for the estimation of direct and indirect sequential relationships between observed and latent variables on multiple levels (eg, individual and community level).[17] To underscore the potential of Ml-SEM in social capital research, we refer to a paper by Wind and Komproe.[10] They showed that community social capital is salutary for individual mental health as it exerts its effect via a complex sequence of social community factors and individual health mechanisms. First, in the aftermath of a natural disaster, in communities with high stocks of social capital residents of resilient communities had more resources at their disposal, and were therefore more successful in solving collective problems. Also, within these communities there was more trust among its residents. Second, as a result of this fruitful social community mechanism individuals applied less individual coping strategies and less individual social support from close ones. Thus, in communities with high social capital adversity was less demanding for individual psychosocial resources. Third and finally, this 'conservation of individual resources' ultimately decreased the association between the individual emotional response to a disaster and post-traumatic stress. Through this complex multilevel mechanism individuals in communities with high social capital suffer less from disaster-related distress. As such this paper illustrates the potential of Ml-SEM to unravel complex sequential multilevel mechanisms that explain how community social capital may be related to individual health outcomes.

We hasten to add that within such multilevel sequential mechanisms scholars need to be mindful of the reciprocal relationship between social capital and health, that is, the problem of endogeneity: social capital may influence health outcomes but health outcomes, on the other hand, may also influence social capital. For example, people with better health may participate more in their social community. Rocco *et al*[18] confirmed this reciprocal association.[18] They showed a causal and positive relationship between self-perceived health and social capital does exist and that it acts in both directions. To dissect these reciprocal associations, scholars need to adopt research designs that allow to dissect causal mechanisms, such as longitudinal studies and randomised control trials (RCTs), a research design that has not been applied in social capital intervention research thus far.

If scholars start applying techniques such as Ml-SEM in public health research on social capital interventions—preferably with longitudinal studies and RCTs—they may provide empirical evidence for the more discerned and realistic notion that social capital may be beneficial for some and perhaps even deleterious for other groups (the so called 'dark side' of social capital).[19] Also, they may reveal that rather than the traditionally researched direct effect social capital may have an indirect effect as underscored in our framework. However—notwithstanding its potential—this technique (Ml-SEM) has hardly been applied in public health research on social capital. We refer to Rabe-Hesketh and colleagues for an in-depth reading on Ml-SEM.[17]

CONCLUSION

In this editorial we summarised the status quo of social capital interventions in public health research, introduced a useful categorisation within this domain, and suggested that the way forward is to answer why or *how* social capital is related to individual health mechanisms and health outcomes. In order to answer this question, scholars need to adopt longitudinal designs or RCTs to dissect the reciprocal association between social capital and health outcomes and to rely on statistical analyses that go beyond mere (correlational) multilevel regression models.

By dissecting the multilevel mechanisms that associate social capital to health outcomes, scholars will contribute to the debate whether to intervene at the community or individual level to mitigate health problems. The importance of community interventions that foster social capital has been privileged over the sole implementation of individual psychological interventions.[20] Certainly, the clear advantage of community social capital interventions over traditional individually oriented interventions, is that they represent the possibility of promoting positive outcomes effectively with relative few resources.[20] Yet, adopting a multilevel approach implies that both individual and community interventions may not only geared toward the same end of improving individual health,[21] but may also exert their effect on health via the same individual mechanisms.

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