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## Integrating Social Epidemiology Into Public Health Research and Practice for Maternal Depression

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The impact of maternal depression on women and their families has been well documented. Given the prevalence and impact of this problem, one important strategy is to strengthen and expand our public health approaches.

Although principles of social epidemiology are increasingly used in the field of maternal and child health, few public health efforts to address maternal mental health have incorporated ecosocial frameworks such as community connectedness, quality of social relationships, and social capital.

One method to augment current public health approaches to maternal depression is through the incorporation of a perspective focusing on community, cohesion, group membership, and connectedness—a concept often described as social capital. We describe the relevance of this ecosocial perspective for mental health promotion programs for mothers. (*Am J Public Health*. 2011;101:990–994. doi:10.2105/AJPH.2010.196576)

**DEPRESSION IS THE LEADING** cause of disability for all ages and both sexes worldwide.<sup>1</sup> The public health significance of depression in women is undeniable, with lifetime rates between 10% and 25%.<sup>2,3</sup> The childbearing years are a particularly high-risk period for major depression in women because the increase in the risk of depression rises steeply for females just as they enter the fertile period of their lives.<sup>2,3</sup> Evidence shows that mothers of young children and new mothers have rates of depressive symptoms ranging from 12% to 20%, with even higher rates for adolescent and low-income minority women.<sup>4–7</sup> Despite the availability of effective treatments, depression remains undertreated.<sup>8–11</sup> In primary care settings, close to 75% of depressed women of childbearing age do not receive any mental health treatment.<sup>9,10,12</sup>

Three public health approaches to address depression in pregnant and parenting women are commonly used. The first approach, screening for depression in obstetrical settings, has been

recommended in the research literature,<sup>13</sup> adopted as a best practice guideline,<sup>14</sup> and mandated as a standard medical practice in some states.<sup>15</sup> Despite the plausibility of this approach, studies from other general health care settings do not generally show that patient outcomes improve as a result of screening.<sup>16,17</sup> Recent studies with diverse samples of pregnant and postpartum women have found that screening has either no or minimal effect in ameliorating depressive symptoms or increasing use of behavioral health care.<sup>18–20</sup> The second approach to maternal depression has focused on the provision of social support through home visitation.<sup>21</sup> The third approach has focused on the promotion of help-seeking for maternal depression via large-scale media campaigns.<sup>22</sup> With the exception of home visitation conducted in the postnatal period by trained health care professionals,<sup>23</sup> the effectiveness of each of these strategies has been limited.<sup>21–25</sup>

The limited effectiveness of current public health approaches means that new strategies must be

developed to address depression in women. Depression constitutes one of the largest public health problems facing women of reproductive age. This fact, and the need for new public health approaches, necessitates the development of communitywide public health promotion efforts to reduce the burden of depression in mothers.

### SOCIAL EPIDEMIOLOGY AND MENTAL HEALTH PROMOTION

Ecosocial frameworks are increasingly used to examine both chronic and infectious diseases such as cancer,<sup>26,27</sup> diabetes,<sup>28,29</sup> and AIDS and other sexually transmitted infections.<sup>30</sup> The community-level promotion of physical activity through increased (1) opportunities for physical activity, (2) policies supporting physical activity, and (3) improvement of built and natural environments to support active living<sup>31</sup> is an example of the application of an ecosocial framework to a public health problem. Increasingly, principles of social

epidemiology (e.g., life-course models and neighborhood-level exposures) are used in perinatal epidemiology, for example, to determine the impact of discrimination on birth outcomes.<sup>32</sup> However, few public health programs targeting maternal mental health have incorporated broader ecosocial frameworks such as community connectedness and quality of social relationships (e.g. trust, reciprocity, values) into the promotion of maternal mental health. One method to augment current public health approaches to maternal depression is through the incorporation of community-level approaches that focus on fostering community cohesion, group membership, and connectedness.

### DEFINING SOCIAL EPIDEMIOLOGICAL PRINCIPLES

A first step in expanding public health promotion for maternal depression is to define the social epidemiological terms—social networks, social support, and social capital—as they relate to the field of maternal mental health. “Social networks” refer to the networks of individuals, organizations, programs, or other entities that are specific to an individual or group.<sup>33</sup> Evidence suggests that multiple network characteristics, such as the density, homogeneity, and range of the network, affect mental health and that the size of networks alone, as opposed to their characteristics, does not consistently predict positive mental health.<sup>34</sup> Yet few interventions use the characteristics of social networks to promote maternal mental health.

A frequently examined social concept in maternal and child health research is “social support,” which is one type of resource that flows through social networks. In

general, social support is support that is provided by other people and arises from relationships with other people. Social support can take four forms: instrumental (i.e., help with tangible needs), emotional (i.e., demonstration of sympathy and care), informational (i.e., provision of advice), and appraisal (i.e., help in decision-making).<sup>35</sup> Specific to maternal mental health, the provision of social support to women in the postpartum period through home visitation by health professionals has been shown to prevent the onset of postpartum depression.<sup>22</sup> More broadly, social support has been associated with health benefits ranging from lower morbidity and mortality,<sup>36</sup> improved outcomes following myocardial infarction and stroke,<sup>37,38</sup> decline in CD4 levels in HIV-infected men,<sup>39</sup> and resistance against the development of infectious disease.<sup>40</sup>

Public health approaches to maternal depression can be expanded beyond the size of social networks and the presence of social support. In addition to network characteristics, measures of the quality and the values accrued through social networks have become one area of interest to public health; these values are referred to as “social capital.” Specifically, the term refers to levels of interpersonal trust and norms of reciprocity and mutual aid that act as resources for individuals and facilitate collective action.<sup>41,42</sup> In a synthesis of the application of concepts of social capital to modern sociology, sociologist Alejandro Portes proposes a definition that is most applicable to the study of maternal mental health: social capital is “the ability of actors to secure benefits by virtue of membership in social networks or other social structures.”<sup>43(p6)</sup> Derived from research and literature in

sociological and political science and coined by the French sociologist Pierre Bourdieu in 1986,<sup>44,45</sup> the term has often been loosely defined depending on the context, discipline, and research question. (For a more comprehensive review of controversies in the definition of social capital, see Wakefield and Poland<sup>46</sup> and Kawachi et al.<sup>47</sup>) Debate continues as to whether social capital is appropriately measured on an individual or a community level.<sup>48,49</sup> Measured on a community level, social capital brings an ecological perspective to maternal mental health and is distinct from the terms social network and social support, which in maternal and child health are usually measured at the individual level.

### SOCIAL CAPITAL AND MENTAL HEALTH

A growing body of research using the concepts of social capital shows that the extent to which we feel meaningfully connected to each other and to our communities is a powerful determinant of health status.<sup>50–52</sup> Despite variation in the definition of social capital, including the level on which it is measured (individual vs community),<sup>53</sup> most studies,<sup>50,54–57</sup> but not all,<sup>53,58,59</sup> have found that communities high in social capital yield residents with higher self-perceived health.

The strongest associations between social capital and health have been found for mental health. Again, most<sup>60–65</sup> but not all<sup>51,66,67</sup> of the studies examining the effect of social capital on mental health have found a significant inverse association between level of social capital and mental illness when social capital is operationalized as social cohesion, reciprocity, membership in organizations, and

trust in others and society. Inverse relationships between social capital and suicidal ideation,<sup>63</sup> general mental distress,<sup>52</sup> depressive symptoms, psychosis,<sup>68</sup> substance use,<sup>69</sup> and aggression<sup>60</sup> have also been demonstrated.

Interestingly, these studies of social capital and mental health have not specifically examined the ways in which gender may matter. Women and mothers have different histories, experiences, and institutional relationships than men, suggesting that measures and conceptualizations of social capital that examine gender may be important. To date, only a handful of studies have specifically investigated gender as a mediator or moderator in the relationship between social capital and health. With few exceptions,<sup>64,70</sup> social capital has larger effects on the health of women than of men.<sup>56,57,61,71,72</sup> Thus, it may be particularly important to consider social capital in the promotion of women’s mental health.

### USING SOCIAL CAPITAL TO ENHANCE MATERNAL MENTAL HEALTH

The experience of motherhood presents an interesting example through which to consider a gender-based view of social capital. A woman’s connection and experience with her community change across her life course, especially from pregnancy to motherhood. The integration of concepts of social capital into public health approaches toward maternal mental health should include the development of communitywide approaches. For example, pregnancy would be reconceptualized not as an exposure but as an intertwined social and biological process capable of altering susceptibility to mental illness.<sup>26</sup>

Mothers, who may bear most of the burden of child care and family responsibilities, potentially experience community through newfound resources and reciprocal relationships (child care or employment) that change with the birth of a child. A child's attendance at school or day care exposes mothers to new norms related to gender and parenting. How a mother experiences these new situations and what she derives from them are likely to have profound influences on her mental health. Although the level at which social capital is measured affects this discussion, plausible mechanisms by which social capital affects the mental health of mothers, with specific considerations of the potential for community-level solutions based on these mechanisms,<sup>50</sup> are as follows.

First, social capital may influence the health behaviors of mothers by influencing the diffusion of health information. The theory of diffusion of innovation suggests that innovative behaviors diffuse much more rapidly in communities that are cohesive and in which members know and trust one another.<sup>73</sup> An example is the recently published finding that a higher level of civic engagement generated through ties to community groups is associated with better recall of health messages when controlling for gender, education, and income.<sup>74</sup> This finding would suggest that mental health promotion efforts targeting mothers could be successfully delivered through community organizations in which high levels of cohesion and trust are maintained.

Second, recent evidence from criminology literature suggests that the extent to which neighbors are willing to exert social control on deviant behavior (i.e., collective efficacy) may influence the

prevention of crime.<sup>75,76</sup> As applied to mental health, communities can act to develop social norms that influence behaviors that may reduce stigma associated with depression or its treatment. An example is the One Hundred Intentional Acts of Kindness Toward Pregnant Women Project.<sup>77</sup> Although no evaluation of its effectiveness has been completed, the objectives and theoretical underpinnings behind the project expand the menu of preventative programmatic options to address maternal depression and include changes in community support and norms. The program, started in 2001 by Healthy African American Families II, was a media campaign aimed at increasing community support for pregnant African American women in south and central Los Angeles. The One Hundred Acts were compiled from the input of women from several focus groups who were asked to name five things they wished their families, friends, and even strangers could do to make pregnancies better. Responses included ideas such as giving up a seat on the bus and respecting pregnant women. Publicity included placement and broadcasting in churches, barber shops, and other community-based locations where high levels of trust and reciprocity were present to promote awareness and create a supportive community.

Third, evidence suggests that socially cohesive neighborhoods are more successful at uniting to ensure that budget cuts do not affect local services.<sup>78,79</sup> Methods to assess community assets and needs through the use of community-based participatory research could be undertaken.<sup>80</sup> The trust and reciprocity developed through these academic-community partnerships could facilitate community-level

social capital by encouraging members of communities to work together to solve health problems such as increasing treatment resources for maternal mental health.

Fourth, a growing body of theoretical and empirical literature<sup>66</sup> suggests that the central mechanism by which social capital increases treatment effectiveness is the promotion of systems integration, which in turn fosters conditions of trust, cooperation, and coordination.<sup>81,82</sup> The Substance Abuse and Mental Health Services Administration's Systems of Care grants, awarded at the state level to create unified systems for the treatment and prevention of mental illness in children, are examples of programmatic approaches that recognize that strengthening the linkages between family, school, and community increases community-level social capital, and that this in turn promotes better treatment outcomes.<sup>83</sup> Similar systems of care could be created for maternal mental health.

### An Agenda for Communitywide Maternal Mental Health Promotion

Depression in women of child-bearing age is a large public health problem and the number one complication of childbirth. The beneficial effects of social capital on mental health are well documented.<sup>84</sup> However, the fact that women, and mothers in particular, have different histories, experiences, and institutional relationships than men argues for the communitywide public health promotion of maternal mental health to accommodate these facts. Invoking a social capital approach to maternal mental health requires the development of communitywide solutions to change norms and increase trust and linkages among

systems. We present four points for an agenda for communitywide maternal mental health promotion using concepts of social capital.

First, move beyond social support to incorporate social capital. The types of connections that may benefit maternal mental health are not necessarily limited to the provision of social support through home visitation and individual-level outreach. It is not simply the presence or absence of support and networks, but the quality, trust, reciprocity, norms, and values accrued through networks and support on a communitywide level that are the focus of social capital and can be harnessed for public health intervention. Thus, these variables should be tracked and incorporated into public health programming and evaluation.

Second, increase an individual's connection to community as a focus in the prevention of mental illness in mothers. Increasing social capital in a community is one way to reduce the psychosocial stress experienced by pregnant women. One example is the National Strategy for Suicide Prevention, designed by the Centers for Disease Control and Prevention (CDC). The strategy is a comprehensive and integrated public health approach to the prevention of suicide. One of its primary aims is to promote opportunities and settings that enhance connectedness among persons, families, and communities.<sup>85</sup> The CDC defines connectedness as the degree to which a person or group is socially close, interrelated, or shares resources with other persons or groups. This definition encompasses the nature and quality of connections both within and between multiple levels of community, individuals, families, organizations, and social institutions.<sup>85</sup> It also includes a wide range of

concepts linked to social capital and could be used as a model in public health programs focusing on maternal mental health.

Third, move beyond the neighborhood by expanding traditional maternal and child health programs to incorporate social capital. Recent qualitative work suggests that neighborhood is not the most important source of most people's social connections.<sup>58</sup> A consideration of community as an entity other than a neighborhood is crucial to examining women's health in general, and mental health in particular.

Fourth, measure social capital in current maternal and child health programs. Once we begin to measure social capital in different programs and among diverse populations, we will be able to determine which components affect maternal mental health outcomes and which definitions are most appropriate for maternal mental health programming. The CDC's Pregnancy Risk Assessment Monitoring System (a system to collect state-specific population-based maternal and child health information during pregnancy and around the time of birth) would be an ideal instrument in which to incorporate questions on social capital. Such a systematic approach could generate new hypotheses and data to guide programming and policy on a communitywide level. Additionally, we are working on validating an instrument to measure maternal social capital in community settings; results are forthcoming.

## CONCLUSIONS

During the last decade, a new concept, social capital, has emerged from the social science literature into public health research and brought with it challenges to existing measurement and theoretical

models of public health and mental health. In addition, the current sociohistorical moment may allow for a broader understanding of maternal depression; the passage of federal legislation in 2010 to increase programmatic and research funding for depression in pregnant and parenting women, the Mothers Act, demonstrates that the political will to address maternal depression currently exists.<sup>86</sup>

The concepts of social capital have potential for translation into public health practice specific to maternal mental health. Social capital has been shown to affect not only disease onset but also health service use, suggesting potentially modifiable community-level mechanisms to address mental health promotion and treatment engagement. ■

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### Contributors

M. V. Smith led the conceptualization of the article, wrote the initial draft, and revised subsequent drafts. A. K. Lincoln contributed to the conceptualization of the article, read and commented on all drafts, and contributed text.

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