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Beyond Co-Morbidity: A Critical Anthropological Perspective of Syndemic Depression and Diabetes in Cross-Cultural Contexts

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Abstract

This article examines the comorbidity concept in medical anthropology. I argue that the dearth of articles on comorbidity in medical anthropology may result from the rise of syndemic theory. Syndemics recognize how social realities shape individual illness experiences as well as distribution of diseases across populations. I discuss synergistic interactions foundational to the syndemics construct through my research of depression and diabetes comorbidity in vulnerable populations from urban United States, India, and South Africa. I argue that social and economic factors that cluster with depression and diabetes alone and together exemplify the biosocial processes that are at the heart of syndemics. In doing so, I illustrate how social, cultural, and economic factors shape individual-level experiences of co-occurring diseases despite similar population-level trends. Finally, I discuss the relevance of syndemics for the fields of medicine and public health while cautioning what must not be lost in translation across disciplines.

Keywords

comorbidity; syndemics; depression; Type 2 diabetes; social inequality

Introduction

The concept of comorbidity has received surprisingly little attention in medical anthropology. In contrast, the concept has become what Good (1994) has described as biomedical “fact” in biomedicine and public health. Clinician Alvan Feinstein (1970) first defined the comorbidity as: “Any distinct additional entity that has existed or may occur during the clinical course of a patient who has the index disease under study” (cited in Valderas et al. 2009:358). Despite this early deterministic definition on indexing disease, clinical and epidemiological researchers increasingly recognize psychological, ecological, and social factors as contributors to disease and comorbid conditions (see Krieger 2001). However, prioritizing unidirectional pathologies remains pervasive in the halls of biomedicine and public health.

This article examines the comorbidity concept in medical anthropology. First, I consider the dearth of articles in medical anthropology that attend to the co-occurrence of disease. This may be due in part to medical anthropologists’ concern for how the social world influences

individual illness experiences as opposed to disease biologies. However, it also may be a reflection of the rise of syndemic theory, which critically considers synergistic interaction of social, psychological, and biological factors instead of exclusive analysis of disease–disease interactions.

Next, I evaluate the synergistic interactions foundational to the syndemics construct through my research of co-occurring depression and Type 2 diabetes in vulnerable populations residing in urban United States, India, and South Africa. I argue that social and economic factors that cluster with depression and diabetes comorbidity exemplify the biosocial processes that are at the heart of syndemic theory. In doing so, I discuss how social, cultural, and economic factors shape individual-level experiences of co-occurring diseases within each unique sociocultural context, despite comparable population-level trends. In other words, the article demonstrates that social epidemiology alone misses the concept of social determinants of disease construction, as social, cultural, and economic factors both shape and are shaped by the emergence and convergence of disease and social suffering.

Finally, I discuss the relevance of syndemics for the fields of medicine and public health while cautioning what must not be lost in translation across disciplines. I argue that syndemics should not become a gloss for comorbidity or multi-morbidity in biomedicine and public health. Rather, syndemics reveal how social and cultural factors shape individual-level experiences of co-occurring diseases, thereby challenging the notion that comorbid conditions are experienced and therefore should be treated the same cross-culturally.

Comorbidity in Medical Anthropology

Much of the anthropological scholarship around comorbidity focuses on co-occurring manifestations in psychiatry, from cultural idioms to somatization. These studies stem from the critique that while some psychiatric conditions such as schizophrenia and major depressive disorder are distinctive in their phenomenology, social origins, prognosis, and psychobiology, cultural and social processes play major roles in how people generally experience and express distress cross-culturally (Good 1993, 1997; Good and Kleinman 1985). This makes interpreting co-occurring mental illnesses complex, as they may appear differently not only in cultural contexts but also among people who suffer from multiple maladies (Maser and Dinges 1993). As such, Kohrt and colleagues (2005) contend that the notion of comorbidity is necessary to “understand the role of local biology and disease in the production of experience,” and that the role of culture in the expression of distress becomes realized after “parsing variance from comorbid disorders” (p. 128). Moreover, they go beyond focus on culture to assert that there is a need to address how living in a resource-poor context may shape comorbid epidemiology as well as experience (Kohrt et al. 2005; Shidhaye et al. 2013).

The limited attention directed to the comorbidity construct of two physical conditions or comorbid physical and mental conditions together may result from the emergence of syndemics in critical medical anthropology in the early 1990s (Singer 1994, 1996). Yet, this does not account for inattention to the concept before the 1990s, which may be a reflection of biomedical inattention (Singer, personal communication) or the youth of medical

anthropology itself. It also may reflect the fact that medical anthropologists preference scholarship around how people experience sickness and suffering in the social and emotional individual worlds as opposed to critiquing interactions of disease biologies.

I argue that a syndemics approach is fundamental for the study of comorbidity because it demands integration of social, cultural, psychological, and biological factors that come together to shape disease distribution and illness experiences in a certain time and place. Recognizing how social and cultural factors shape individual-level experiences of comorbid conditions pushes the concept of comorbidity further by demanding recognition that factors apart from biological realities or nosological categories shape illness experiences and that we must look to historic and present trends to understand why certain populations and individuals suffer. As Margaret Lock (2001) has argued: "Recognition that all medical knowledge and practice is historically and culturally constructed and embedded in political economies, and further, subject to continual transformation both locally and globally is essential" (p. 480). Such an approach is critical for the concept of comorbidity because it demands recognition of cross-cultural variance in how comorbid conditions are experienced and therefore how they must be treated.

Syndemics

Syndemics provide a critical alternative to comorbidity that recognizes how social realities shape not only individual illness experiences but also the distribution of diseases across populations. The syndemics construct is built on the belief that the epidemiology of health conditions are corollary of social context (Singer 1996, 2009a, 2009b; Singer and Clair 2003) and that social conditions contribute significantly to a biosocial negative feedback loop wherein social and economic inequalities are both a cause and consequence of disease interactions and associated morbidities and mortalities (Mendenhall 2012). Moreover, syndemic theory promotes the investigation of biological realities of disease interactions and their health consequences while emphasizing that social and economic conditions play fundamental roles in these processes. But, it is not an issue of social conditions exacerbating biological interactions that we measure in disease; rather, syndemics measure how social contexts provide opportunities for such disease interactions to occur (Singer 2009b). Thus, syndemic theory demands that biomedical conceptions of diseases at the individual- and population-levels critically examine the comorbid social problems.

In short, syndemics can be understood by three basic rules implicit to syndemic theory (Mendenhall 2012): (1) the clustering of two (or more) diseases exists within a specific population; (2) fundamental contextual and social factors are co-constructed with the cluster of these two diseases insofar as they help create the conditions in which two diseases cluster and contribute to the further emiseration of the afflicted and affected; and (3) the clustering of multiple diseases creates the potential for adverse disease interaction, increasing the burden of impacted populations. If we accept these three guiding principles for syndemic clustering, then we will be able to better understand why and how two diseases come together to form co-occurring maladies within a specific time and place.

Merrill Singer's (1996) "SAVA Syndemic," defined by its deconstruction of interaction among substance abuse, violence, and AIDS, was the first to illustrate how social ills co-occur succinctly with disease clusters. SAVA demonstrated why, at the population level, AIDS disproportionately affected low-income Puerto Ricans and other ethnic minorities living in urban centers in the United States and how substance abuse and violence were inextricably linked to AIDS in this context. This argument is based on the notion that AIDS is not best understood as a singular phenomenon but rather a result of mutually reinforcing components of a syndemic health crisis characterized by poverty, high unemployment, and structural violence, which together increase risk-taking behaviors such as substance abuse and interpersonal violence. Hence, Singer argued that the crisis in the inner city must be understood as a critical triangulation of substance abuse, violence, and AIDS, manifested at the individual level but revealed at the population level (Singer 1994, 1996).

The syndemics construct has been applied widely and used explicitly to describe the social-level factors that shape and interact with convergent diseases, although not all medical anthropologists have described such convergence through the syndemics idiom. Perhaps the most widely read descriptions of such interactions are Paul Farmer and Jim Kim's research on HIV/AIDS and tuberculosis, which underscores the inherent roles of poverty and structural violence in the clustering of these two diseases (see Farmer et al. 2001). Others have illustrated the relationship of social suffering and clustered mental and physical health problems, including exemplars of food security and HIV/AIDS (see Himmelgreen et al. 2009), tuberculosis and diabetes (see Pablos-Mendez et al. 1997), oral health among migrant workers (Kline 2013), and the food insecurity and obesity paradox (Everett and Wieland 2013). Some of these exemplars are rooted in ethnographic work; others apply social epidemiology to understand and interpret syndemics. While epidemiological analysis can provide a critical understanding to syndemic clustering, I later discuss the importance of critically examining how mutually reinforcing factors in syndemics are experienced through narratively and ethnographically rooted methodologies.

Building on this growing field and Singer's foundational work, I coined the term "VIDDA syndemic" (Mendenhall 2012) to deconstruct the complex dynamics among violence, immigration, depression, diabetes, and abuse among first- and second-generation Mexican immigrant women in Chicago. VIDDA describes how political-economic and social processes shape and interact with the clustering of depression and Type 2 diabetes (hereafter, diabetes) among Mexican immigrant women. Namely, VIDDA illustrates individual-level narrative examples of how the complex dynamics among violence, immigration, depression, diabetes, and abuse become realized in the lives of Mexican immigrant women. In doing so, VIDDA underscores the notion that diabetes is not an endpoint, nor is its overlap with depression the sole focus of the relationship as it is with comorbidity. Rather, depression and diabetes comprise a biosocial feedback loop wherein they are contributors to and consequences of a stressful life.

Recognizing that diabetes is not an endpoint but rather a fraction of the narrative that composes women's lives is a fundamental aspect of VIDDA and can be attributed to methodology. The methods were designed to respond to social epidemiological studies that indicated that diabetes afflicts the poor in the United States (Cowie et al. 2010), diabetes and

depression have a bidirectional relationship (Golden et al. 2008), and mental health and poverty are strongly correlated (Lund et al. 2010). Working through a large public hospital clinic in Chicago, I spent between two to six hours with each of the 121 women who participated in the study, conducting extensive life history narrative interviews complemented with surveys about sociodemographics and diabetes care, psychiatric inventories, and biomarkers; I measured diabetes control with finger-stick blood samples.

The goal of the project was not to understand causality of diabetes; rather, it was to understand which social, psychological, and biomedical factors were at the center of women's life stories. Indeed, in many cases women marginalized diabetes in their life stories, foreshadowing social problems. Although diabetes was particularly stressful for some, it was especially so for those with complications or those just diagnosed. Conducting extensive narrative interviews that moved beyond simply identifying co-occurrence of social and health problems epidemiologically provided unique insight into the lived experience of syndemics, or what I call "syndemic suffering" (Mendenhall 2012).

For VIDDA, specific interactions of violence, immigration, depression, diabetes, and abuse come together to frame syndemic suffering among low-income Mexican immigrant women in Chicago (Mendenhall 2012). However, it is important to situate VIDDA within a larger, complex biosocial framework because, although the findings were ethnographically centered, there was some relevance beyond Mexican immigrant women in Chicago. Figure 1 illustrates the complex biosocial framework that shapes the VIDDA syndemic.¹ Structural factors shape the ways in which people can move securely in the world, addressing issues from unemployment to laws around immigration and living in unsafe neighborhoods. Sociocultural factors shape how people live in the world through the guise of gender inequality, racism, and social networks. Both conflict and support shape relationship factors, which can further influence how people negotiate structural and sociocultural challenges. Finally, individual factors are also fundamental in VIDDA, as childhood experiences, coping mechanisms, obesity, and lifestyle play fundamental roles in how people experience and interact in the world. The larger forces surrounding VIDDA may have broader implications for the co-occurrence of diabetes and depression in other populations.

Therefore, we must attend to the issue of applying syndemic clustering, defined as the clustering together of diseases and social conditions, cross-culturally. In doing so, we must remember that the syndemics construct allows us to examine the epidemiology of health conditions alongside the experience of these conditions at the individual level. This requires a study of local expressions of suffering as well as understanding how one disease can impact the experience of another disease within an individual. By examining population- and individual-level dynamics together, we can generate more thoughtful and holistic interpretations of how and why disease and suffering are distributed among socially and economically marginalized groups.

¹Figure 1 was first published in Mendenhall (2012:106).

Does Syndemic Suffering Transcend Nations?

To begin to address this question, we must turn to the epidemiology of the co-occurrence of depression and diabetes, which has been studied extensively in the biomedical literature. There is widespread recognition in social epidemiology that obesity and diabetes incidence and prevalence is shifting from high-income to lower income populations in low- and middle-income countries (Popkin et al. 2012) and that this has contributed to increases in the diabetes–depression comorbidity among low-income populations in poor countries (Leone et al. 2012). However, how the dyad is experienced and expressed within and between populations and nations differs in significant ways. This is largely because cultural beliefs and social contexts shape the experiential dimension of comorbidity, thereby making individual-level experiences of what it means to have two co-occurring conditions different based on context. Indeed, the importance of this point is realized most significantly in clinical settings where biomedical treatment is largely considered transnational (Finkler 2004), although attending to the various ways in which social, psychological, and biological interactions shape syndemic suffering may be fundamental for good health.

Within high-income nations like the United States, diabetes interfaces with depression regularly as both chronic conditions fester in socially and economically marginalized groups. The relative import of one's impact on the other has been extensively documented, demonstrating that depression and diabetes maintain a bidirectional relationship, where diabetes contributes to depression, and vice versa (Golden et al. 2007; Golden et al. 2008; Knol et al. 2006; Mezuk et al. 2008). Not only does living with diabetes contribute to depression (Nouwen et al. 2010; Nouwen et al. 2011), but depression among those with diabetes is also associated with nonadherence to diabetes treatment (Duangdao and Roesch 2008; Gonzalez et al. 2008; Iovieno et al. 2001; van der Feltz-Cornelis et al. 2010), increased diabetes complications (de Groot et al. 2001), and poor glycemic control (Lustman et al. 2000). Biological and behavioral pathways also link depression to diabetes via neurohormonal pathways, alterations in glucose transport, increased immuno-inflammatory activation, behavioral pathways, and use of anti-depressants (Knol et al. 2006; Mezuk et al. 2008; Musselman et al. 2003; Talbot and Nouwen 2000). Specifically, there is biomedical and narrative evidence of mental health treatment functioning to spur iatrogenic diabetes (Golden et al. 2008; Mendenhall 2015b). However, because this research has been conducted in high-income countries, revealing that many of these links between depressive symptoms and diabetes problems are rooted in social and economic conditions, these findings may not be directly applicable to lower income settings.

The co-occurrence of depression and diabetes paints a very different epidemiological landscape in low- and middle-income countries. Historically, diabetes has been a disease of the affluent in these contexts and did not interface regularly with the influences of structural violence, chronic social stress, and poor access to health care. But within emerging economies, such as India, Mexico, and Brazil, marked increases in obesity and diabetes associated with changing lifestyle patterns have been observed among the middle class and working poor, while the affluent present lower incidence and prevalence of these conditions (Popkin et al. 2012). The epidemiological shifts also increase the prevalence of comorbid depression among people with diabetes in these contexts. This is because poverty and

depression are strongly correlated (Lund et al. 2010), so when poorer individuals have diabetes they are not only more likely to have depression because of their chronic illness but also because of increased exposure to stressful experiences as a result of their social and economic conditions (Leone et al. 2012). Escalating comorbidity of depression and diabetes are particularly problematic in contexts such as India, where mental health treatment programs are largely nonexistent and diabetes care for the poor is limited (Patel et al. 2011).

Shifts in disease epidemiology do not, however, directly translate into comparative syndemics. In other words, syndemic suffering must be realized within a specific context and, although there may be some important resemblances to VIDDA, there will be important differences as diabetes emerges among low-income groups in emerging economies and intersects with depression, poverty, structural violence, social problems, and other co-occurring conditions. One notable difference is that because diabetes is relatively new to some lower income communities in emerging economies, which will be discussed below, it may be less recognizable and understood at the community level. This has real consequences for how people identify, understand, care about, and seek treatment for their health. This is one example where low-income women in, for example, Delhi, India, may differ from the Mexican immigrant women in Chicago, who, I have argued with colleagues previously in this journal, use diabetes itself as an idiom of distress (Mendenhall et al. 2010). The combined newness and salience of diabetes introduces unbeknownst issues that must be contextualized and interpreted within varied health systems. Indeed, these are the aspects at the heart of syndemic suffering.

Syndemic Depression and Diabetes in Urban India

The Indian context is unique in that rapid socioeconomic and demographic changes are contributing to similar transitions in diabetes epidemiology. Significant changes in quality, quantity, and source of food consumption and physical activity patterns in the past decade have facilitated the escalation of overweight, obesity, and diabetes in India (Popkin et al. 2012). Rapidly improving socioeconomic status has been associated with increased diabetes, particularly among the affluent (Ramachandram 2007), and the subsequent rise in diabetes incidence among middle- and low-income groups (Deepa et al. 2011; Reddy et al. 2007). Thus, we are beginning to see a shift in the distribution of diabetes that represents a shift previously observed in high-income countries, such as the United States, where much of the diabetes burden afflicts the socially disadvantaged.

Such shifts in diabetes epidemiology also bring forth possibilities for increased co-occurrence of depression and diabetes. Extremely high rates of depression (15%) exist in the urban Indian population (Poongothai et al. 2009), and are observed largely among people who are older, of lower socioeconomic status, women, divorced or widowed, and in poorer physical health (Patel et al. 1998; Poongothai et al. 2009). Rapid social change, which has been observed in India and other middle-income countries, also increases likelihood of depression (Patel and Kleinman 2003) and is associated with other important social factors, such as rural to urban migration, changing family structures, social integration, intergenerational conflicts, and changing value systems (see Kielmann 2002). Such experiences are embedded within larger political-economic and social changes that shape

not only how people live and interact but also the distribution and experience of depression and, indirectly, diabetes.

Because epidemiological studies indicate increasing diabetes among lower income groups in urban Indian centers, my research team set out to evaluate how people across income groups understood and experienced diabetes, depression, and their overlap in Delhi (Mendenhall et al. 2012). In contrast to Chicago, where I conducted the fieldwork myself, the Delhi research was conducted through teamwork. We conducted extensive life history narrative interviews ($n=59$), which we paired with psychiatric inventories, surveys about sociodemographics, and biological data that were previously collected as part of a greater cohort study of cardio–metabolic diseases.

The structure of the Delhi study, however, differed from the Chicago study in significant ways. First, the men and women who participated in this study were recruited through purposive sampling by way of a cohort study from which they were previously enrolled. Second, those from the cohort who had previously been diagnosed with diabetes were contacted and invited to participate in the study; therefore, this was a community-based study as opposed to a clinic-based study. Finally, sociodemographics differed significantly: Both men and women from high-, middle-, and low-income neighborhoods were interviewed. From this sample, only 11 of the 60 people interviewed were low-income women. Nevertheless, narrative interviews were given priority in the research, with interviewers spending between one and two hours on that part of the interview and writing extensive field notes about the interaction with the participant.

The India data present important findings that shape syndemic suffering at the intersection of social inequality, depression, and diabetes in Delhi (see Mendenhall et al. 2012). First, we found a step-wise distribution of depression, with 55% of the lowest income group reporting depressive symptoms compared to 38% and 29% among middle- and high-income groups, respectively. Second, while stress associated with children's futures, financial security, and family dynamics were most commonly reported, how these subjective stresses were realized in people's lives varied across income groups. For example, while one-quarter of respondents reported diabetes distress, only those from the low-income community reported co-occurring depression, and these respondents also revealed poor access to diabetes care. Similarly, while gender-based violence, alcoholism, old age, and loneliness were stressors across income groups, they co-occurred most frequently among women with depression from the lowest income groups. These data (Mendenhall et al. 2012) suggest that depression and diabetes among the lowest income group in this study may resemble the framework laid out in Figure 1.

The most important message that I wish to convey from the Delhi study is that social context matters for interpreting the comorbidity of depression and diabetes in different social contexts—both within nations, such as across socioeconomic and cultural groups, and between nations. While a direct application of VIDDA may not be suitable in Delhi, especially for the highest income group, there are several aspects of the VIDDA framework that describe syndemic suffering among those with diabetes and depression in urban India. For example, rural to urban migration plays a major role in increased health problems

among lower income groups in our study, in addition to shifting social networks, food preferences, and access to medical care. This does not mean that the lived experiences of the depression–diabetes dyad are the same, especially because the powerful role of culture in how people perceive and experience distress and diabetes. However, my research suggests that poorer groups residing in significantly different cultural contexts may experience the depression–diabetes dyad more similarly than high- and low-income individuals within the same urban context. Thus, a syndemic perspective—specifically understanding VIDDA—may provide opportunity to predict: (1) that the burden will ultimately be greatest among the poor; (2) new social and mental health conditions that emerge with increasing diabetes incidence among the poor; and (3) elevated morbidity and mortality as social and economic factors function as both cause and consequence of co-occurring depression and diabetes.

Syndemic Depression and Diabetes in South Africa

If this were purely an economic analysis, matching wealth and health inequalities between two middle-income countries, we might expect the clustering of depression and diabetes among lower income groups in South Africa to mirror those in India. However, social and cultural realities in South Africa bring to light “meaningful forms through which distress is articulated and constituted as social reality, [and] varies in quite significant ways across cultures” (Good and Kleinman 1985:298).

On the one hand, escalating diabetes incidence among middle-class and working-poor populations in South Africa resemble the *epidemiological* trends I discussed with regard to India. As diabetes escalates in poor urban neighborhoods and increases among the rural poor, the problem of limited mental health care, poor social services, and a fragile health care system (Coovadia et al. 2009; Mayosi et al. 2009) present numerous challenges for diabetes care and the potential complications associated with depression and life’s stressors more generally.

On the other hand, the *experience* of syndemic depression and diabetes among the African women from Soweto paints a different picture (Mendenhall 2015a). In Soweto, I worked within an established structure of an ongoing cohort study known as Birth to Twenty. Among the more than 1,000 eligible women enrolled, only 73 women had been previously diagnosed with diabetes, and 27 were available and able to meet with me. All study participants were black low-income women. I conducted most of the interviews myself and relied on a local multilingual research assistant to recruit eligible women and conduct the eight interviews in Sesotho or Zulu. We conducted life history narrative interviews, sociodemographic surveys, and psychiatric inventories. Although the smallest sample, and certainly the least rigorous methodology when compared to the other two very mixed methods approaches, this study brings to light important cultural factors that must be considered not only in emerging economies where noncommunicable diseases are newer entities among low-income populations but also in societies deeply affected by the HIV/AIDS epidemic. In this way, history and social context uniquely shape syndemic suffering of depression and diabetes in Soweto as they remain in the shadow of apartheid and AIDS.

Soweto is an underserved urban neighborhood, or township, adjacent to Johannesburg that is best known to have been a fundamental part of the anti-apartheid movement and the long-time residence of Nelson Mandela and his family. Despite political and social changes that occurred post-apartheid, the severity of social, economic, and racial inequality in South Africa has shaped the structural violence observed in extraordinary incidence and prevalence of HIV/AIDS and tuberculosis and the co-occurrence of these diseases (Karim et al. 2009) as well as noncommunicable diseases (Mayosi et al. 2009), including diabetes (Crowther and Norris 2012). My research indicated not only a great burden of mental illness among women living with chronic illness, including diabetes (Mendenhall et al. 2013), but also a variety of structural, social, and interpersonal factors (Mendenhall and Norris 2015) that largely corresponded with those framing Figure 1. For example, food insecurity and residing in unsafe neighborhoods influenced women's diabetes experiences and mental health in meaningful ways; although these two factors materialize differently in Soweto when compared to Chicago, the realities and insecurities of urban life were shared.

A significant divergence from this model, however, was how HIV/AIDS framed women's interpretations and experiences with distress and diabetes (Mendenhall and Norris 2015). AIDS played both a direct and indirect role in women's lives, compelling some to care for orphaned grandchildren and shaping how many perceived health and well-being. First, the profound loss that women described in relation to AIDS was intrinsic to women's life stress, both through missing their children and carrying the burden of raising grandchildren left behind (ibid). This finding, as well as women's general familiarity with HIV, demonstrated that most women in the study were affected by HIV/AIDS in some way. Second, it was clear that HIV/AIDS framed women's perceptions of biomedical suffering, which may be explained in part by the fact that epidemiological surveillance indicates that more than one in four people in Soweto are HIV positive (Karim et al. 2009). The majority of the women explained that many people confuse diabetes and HIV, or believe that diabetes is the same or worse than HIV/AIDS because of its unfamiliarity. Moreover, diabetes had become a crutch for AIDS stigma, as women grieved that many people with AIDS would say that their daily medication was for diabetes; therefore, my interlocutors believed that others perceived that their illness was AIDS itself, as opposed to diabetes (Mendenhall and Norris 2015). This introduces a new phenomenon of a catchall "chronic illness" stigma.

What is significant about this finding is that emic frameworks for sickness that incorporate cultural reference to HIV/AIDS play a fundamental role in syndemic suffering of depression and diabetes in this context. In this way, the women demonstrate that their "semantic illness network" (Good 1977) for diabetes and distress cannot be divorced from AIDS, the prevailing form in which sickness is now communicated and understood in their community. These beliefs are rooted in local realities that cannot be transduced across cultures and must be situated within the current moment in South Africa. Thus, just as immigration stress uniquely shapes the syndemic of depression and diabetes among Mexican immigrant women in Chicago, AIDS underscores syndemic suffering of depression and diabetes in Soweto.

Conclusion

This article has demonstrated the limitations of the comorbidity construct as it is applied cross-culturally, illustrating how local realities shape syndemic suffering within and between nations. In summary, I demonstrated how the VIDDA syndemic brings together lived realities of structural violence, abuse, immigration, depression, and diabetes among Mexican immigrants in Chicago. Despite many similarities found in the lived experiences of poverty, depression, and diabetes in India and South Africa, locally determined social and psychological factors cultivate sundry realities. Food and personal insecurities in the home and street are shared across contexts, while cultural mediators such as psychologies of social mobility and what it means to be sick in the context of AIDS shape women's syndemic experiences in India and South Africa, respectively.

This argument bolsters the larger body of research in critical medical anthropology and biocultural anthropology that aims to understand how political-economic and social processes shape health inequalities. Indeed, the syndemic model moves our understanding of disease clusters beyond nosological categories into a comprehensive, integrated interpretation of disease and suffering. Such an approach is more useful for clinical medicine and public health than comorbidity, which fails to recognize the intrinsic role of "the social" in how people understand and experience disease.

Yet, there is some concern for the appropriation of the syndemics construct into the health sciences and clinical medicine. This is because there is a risk of using syndemics as a heuristic, much like comorbidity, without critical review of the social, cultural, and economic factors that may shape the convergence of two diseases. What's at stake is an uncritical application of syndemic theory to the interpretation of disease clusters in public health and medicine (e.g., Conant and Kaleeba 2013), instead of pushing the health sciences to recognize the role of social factors in disease clustering. In other words, if syndemics is used to describe disease clusters in lieu of comorbidity, then there is potential that the syndemics construct will lose its fundamental tenet of scrutinizing the underlying role of social and political-economic processes in disease clustering among the poor. Alternatively, if biomedicine and public health accepts the syndemics construct and embraces the conception of comorbid social problems, then such an approach can help predict patterns of risk, disability, and health care challenges in the future, thereby pushing their analysis beyond comorbidity.

Nevertheless, throughout this article I have referred to the overlap of my research in India and South Africa with my study in the United States. The argument is not, therefore, based on the fact that a completely new syndemic orientation is necessary to evaluate disease clusters, beginning with a clean slate in each population. I have argued elsewhere that the VIDDA syndemic concept may be somewhat transferable to Puerto Rican and African American populations in urban contexts in the United States (Mendenhall 2012). It is fundamental to recognize the relative meaning of the lack of stress associated with undocumented immigration for Puerto Rican populations and the historical legacy of racism and mistrust of U.S. medical institutions for African Americans. As such, while it is imperative to examine how unique social and cultural factors shape individual experiences of

co-occurring diseases, there may be similarities in what social and structural factors co-occur with disease clusters within and between nations. It is important, however, that one syndemic orientation is not applied cross-culturally without critical review.

The challenge of syndemics is nowhere more evident than in public health and medicine. Singer (2009b) states: “Addressing syndemics requires public health, biomedical, and health development models that move beyond individual risk, individual diseases, and individual behavior change” (pp. 199–200). This requires us to attend to the “big picture” of disease and suffering through public health education campaigns, social science and epidemiological research, and clinical medicine. In doing so, we must recognize, for example, the social and cultural variants that shape the depression–diabetes dyad in primary care to provide holistic care that attends to the material, mental, and physical factors that shape sickness. Such an approach speaks not only to the movement for global mental health that promotes integrated mental health care into primary care in resource-poor settings (Prince et al. 2007), but also the emerging dialogue about how to redefine the post–millennium development goals agenda, which aims to recognize that suffering should not be individuated into silos of diseases but rather holistic biosocial experiences rooted in a unique time and place.

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Figure 1.
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