A Community-Based Participatory Approach in Applying the Sociocultural Resilience Model in US-Mexico Border communities

Maia Ingram, MPH [1], Ada M. Wilkinson-Lee, PhD, MS[2]

Namoonga M. Mantina, MSPH, MBA[1] Maria Velasco, MA[3]

Gloria Coronado, MA[4] Mark Gallegos, BA [5] and Scott C. Carvajal, PhD, MPH[1]

[1]Department of Health Promotion Sciences, University of Arizona

[2] Department of Mexican American Studies, University of Arizona

[3]El Rio Community Health Center, Tucson, Arizona.

[4]Yuma County Public Health Services District, Yuma, Arizona.

[5]Maricopa County Health Department, Phoenix, Arizona

Maia Ingram, MPH ORCID: 0000-0002-6517-7697

Ada M. Wilkinson-Lee PhD MS ORCID: 0000-0003-0203-4792

Submitted 12 September 2022, revised 11 January 2023, accepted 20 March 2023.

Ingram, M., Wilkinson-Lee, A.M., Mantina, N.M., Velasco, M., Coronado, G., Gallegos, M., Carvajal, S.C. (2023) A Community-Based Participatory Approach in Applying the Sociocultural Resilience Model in US-Mexico Border communities. *Progress in Community Health Partnerships*. (Forthcoming.) 11 April 2023.

ABSTRACT

Background: Behavioral models play a key role in identifying pathways to better health and provide a foundation for health promotion interventions. However, behavioral models based in epidemiological research may be limited in relevance and utility in practice.

Objectives: We describe a participatory approach within a community-based participatory research (CBPR) partnership for integrating epidemiological and community perspectives into the application of the sociocultural resilience model (SRM). The SRM posits that cultural processes have a symbiotic relationship with health-promoting social processes, which contribute to the health advantages among Mexican-origin and other Latinx populations.

Methods: Community action board members engaged with academic partners to interpret and apply the SRM to a community-clinical linkages intervention, implemented in the context of three US-Mexico border communities. In a two-day workshop, partners engaged in a series of iterative discussions to reach common definitions and measures for SRM constructs.

Results: Partners described daily cultural processes as the food they eat, how they communicate, and a collectivist approach to getting things done. For intervention activities, the partners opted for intergenerational storytelling, sharing of food, and artistic forms of expression. Partners included measures of cultural nuances such as border identity and the complexities that often arise from navigating bicultural norms.

Conclusions: Collaborative approaches within CBPR partnerships can facilitate the adaptation and measurement of conceptual health behavior models in community practice.

KEYWORDS: health promotion; community-based participatory research; sociocultural resilience model; Mexican-origin; US-Mexico border, conceptual model, qualitative methods, participatory methods

Introduction

Health promotion is defined broadly as those processes and activities that are designed to help people control and improve their health.[1] Behavioral models play a key role in the development of health promotion interventions by conceptualizing and organizing pathways to better health on an individual and community level. Behavioral models help ground intervention activities in evidence, while proposing structures for complex and interacting ideas.[2] However, behavioral models are generally developed within the realm of academic research, which may limit their relevance and utility in practice.[3] There is value in a synergistic approach between research and community experience in applying behavioral models to health promotion interventions. Community-based participatory research (CBPR) offers an approach to integrating diverse perspectives and knowledge into interpretation of behavioral models and thus ensuring that they have implications for practice.[4] In this process paper, we describe a participatory method for applying the sociocultural resilience model (SRM) within the context of Arizona-Mexico border communities with the aim of providing a practical approach for CBPR partners to use in identifying and utilizing health behavior models to develop and evaluate health promotion interventions.

The Sociocultural Resilience Model

People of Mexican origin comprise the largest group of Latinxs in the US and account for the greatest percentage of the immigrant population.[5] More than half of these individuals live in US-Mexico Border states, with many concentrated communities located in border counties. Border populations enjoy a rich and varied culture and history, but they also experience challenges in several social determinants that negatively affect their health. Border residents are twice as likely to live in poverty, attend fewer years of school, and experience higher rates of

unemployment than the population of any individual U.S. state.[6] Immigration status is a major risk for border-dwelling families, increasing stress and creating barriers to health and other services.[7]. Mexican-origin individuals fare worse than other Latinx populations with respect to health insurance and utilization of medical and preventive care.[8,9]

The relationship between these structural inequities and the health of border-dwelling Mexican origin individuals is complex. While diabetes morbidity and mortality is high,[10] their rate of CVD mortality is lower than expected,[11] for example, and life expectancy is higher than non-Hispanic whites.[12] Recent research to disentangle factors related to health advantages among Latinx populations more broadly, also known as the Hispanic Health Paradox, has suggested that the ethnic concentration of Mexican-Americans living on the border may serve as a buffer against negative health effects.[13] This health advantage might also be described as a form of resilience, or the capacity to thrive in the face of inequitable economic, community, and societal burdens in and beyond health care systems.[14]

The SRM is an asset-based health behavior model based in epidemiological evidence that seeks to investigate sources of resilience that may have implications for the overall health of the Latinx population. In the SRM, Ruiz et al (2016) posit that there are cultural processes common across Latinx populations, including Mexican-origin individuals, that have a symbiotic relationship to health promoting social processes, which together create the foundation of health resilience.[15-17] (Figure 1) Cultural processes are values, traditions, and knowledge of a cultural group. These include *familismo,* a focus on the collective needs of the family over those of the individual, *simpatía,* a preference for harmony over confrontational interactions, and *respeto,* or affirming attitudes towards the social roles that individuals, particularly elders, hold within the social structure.[17-19] Social networks stem from and reinforce cultural processes, but also refer to

friends, acquaintances, and neighborhood and community networks. These SRM constructs are theorized to contribute to the health advantage among Latinxs.[15]

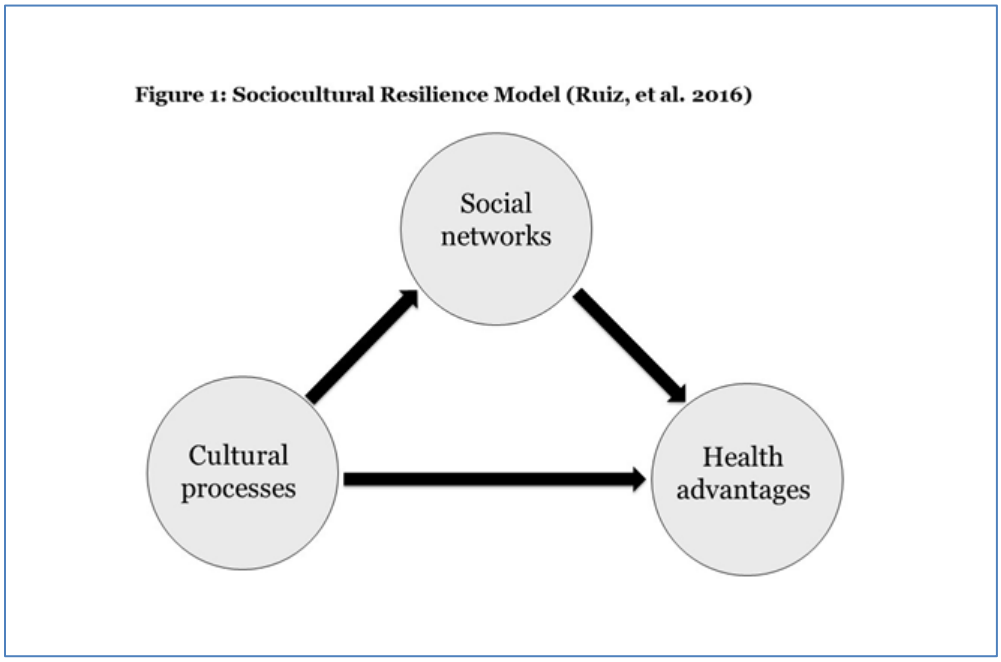

Figure 1. Sociocultural Resilience Model (Ruiz, et al. 2016)

Recent research explores the relationship between the cultural processes, social networks and health outcomes theorized in this fairly new conceptual model. Mercado and Venta (2022) are considering the influence of trauma in the SRM among immigrant mothers and children.[20] A review of stress research suggests that the SRM may explain low levels of general parenting stress among Latinx parents of children with autism spectrum disorder.[21] One area of concern expressed in these and other studies is the use of ethnicity as a proxy for cultural processes,[15,22,23] given that the culture of a particular group is complex, involving norms, rituals, values, shared history, health and relationships.[24] Similarly, social networks, as measured by the size and strength in improving access to resources, may not capture cultural significance of cross-border networks in US-Mexico communities.

The hybrid model of concept development proposes that grounding theories in evidence is the first of three stages of development.[25] As shown in Figure 2, the model proposes a trajectory that begins with epidemiological research, then incorporates field work as the second stage, and application of the theory in practice as the third, or analytic stage. We demonstrate how we integrated participatory processes into the fieldwork stage within the context of Arizona border communities. In collectively interpreting the SRM concepts, we describe how we integrated aspects of the SRM into the development of our health promotion intervention and its evaluation. We describe plans for ongoing CBPR approaches in the subsequent analytical stage.

Figure 2. Hybrid Model of Concept Development

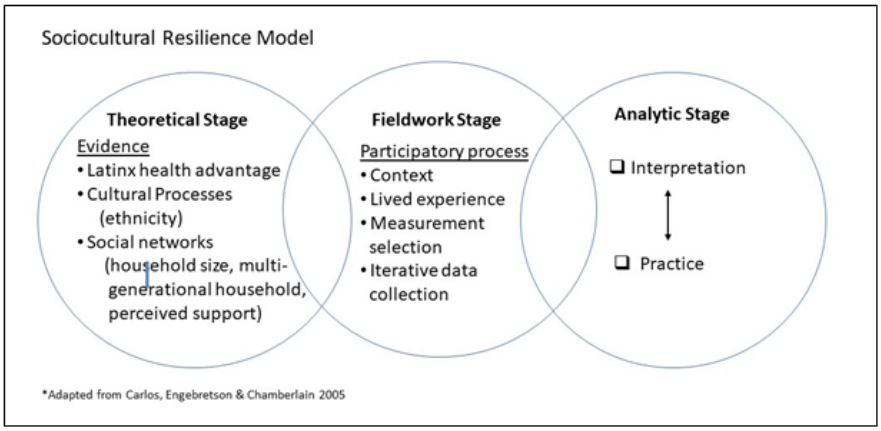

Figure 2. Hybrid Model of Concept Development

Methods

The opportunity to conduct "field work," on the SRM constructs unfolded within the context of a 30-year CBPR partnership between academic researchers and a community action board (CAB) made up of representative members of community organizations, federally qualified health centers, and county health departments throughout Southern Arizona.[26] A fundamental characteristic of our CBPR partnership is the shared and equitable decision-making in the

research process and a community-driven approach to developing solutions to community challenges.[4] CAB members guide the research agenda based upon their personal and professional experience. CAB members work alongside the academic researchers across the stages of intervention design, implementation, data analyses, interpretation and dissemination. The CAB includes community health workers (CHWs) from the border communities who are integrally involved in the development and evaluation of interventions that address chronic disease risk across the social-ecological spectrum.[27,28] As members of, and often leaders in, the communities they serve, CHW CAB members also represent community perspectives and interests in research decisions.[29,30]

The field work took place as part of UNIDOS, a CHW-driven community-clinical linkage (CCL) intervention designed to create a continuum of clinical, health promotion and social determinant services (i.e., housing and employment assistance) for people of Mexican-origin in the partner communities. CHWs in clinical settings connect individuals with chronic disease risk with CHWs in county health departments who provide emotional and tangible support for six months. CAB members regularly share projects, ideas and expertise, and during the conceptual stages of UNIDOS, the academic partners invited Dr. John Ruiz, an author of the SRM, to present the model with CAB members. The CAB members recognized the cultural and social processes in their communities and appreciated the affirming nature of the conceptual model. As the partners began to develop a research application for the UNIDOS intervention, we agreed to use SRM to conceptualize the intervention and outcomes. In incorporating the SRM, we included plans to collect longitudinal survey data on the social support and social networks, as well as emotional and physical health outcomes.

Once funded, we engaged in a participatory process to adapt the model to border communities, or more specifically to reach common understanding of the constructs underlying the model, to interpret them based on our lived experience, and to develop intervention strategies to leverage sociocultural resilience. Additionally, we created an evaluative questionnaire that measured our understanding of cultural processes and social networks, so that we could measure their impact on health outcomes over the course of the intervention.

The application of SRM for UNIDOS was initiated in 2019, six months before the emergence of COVID-19, allowing the partnership an opportunity to convene an intensive two-day in-person planning workshop. On the first day, we engaged in a consensus process to establish contextual meanings of cultural processes and social networks in border communities and potential health outcomes. In small groups we discussed four questions: What does the concept mean to you? How do you think it is related to health? What questions would you ask to measure it? What activities would you engage in to enhance it? The lived experiences of these border residents and service providers informed our understanding of how the SRM constructs might operate in the border context. After the first discussion, we re-formed groups to ensure that all partners had the opportunity to engage with each other. The partners documented their discussions on poster board and presented them after each round, thus co-creating and analyzing the data together. On the second day, the partners reviewed research instruments that best matched the questions produced through the previous discussion. We reviewed questionnaires that we had utilized in our previous study, but also identified others that had been associated with the constructs in other research projects.

With the emergence of COVID-19 after our initial in-person meeting, the research team continued to meet monthly over web-conferencing to finalize the intervention questionnaire.

When partners hired new CHW staff, the research team conducted workshops that included a discussion of the SRM and how we were applying it in the development and evaluation of UNIDOS. Consistent with the CBPR approach, as the CHWs began engaging in intervention activities and using the questionnaire in the community, we integrated additional feedback into the evaluation instrument. More information on the adaptation of UNIDOS is published elsewhere.[31] No IRB was required for this process because all participants were contracted partners on the research study and no human subjects data was collected.

Results

Participants in the 13-person workshop included five academic research staff made up of the two CO-PIs, one investigator and one doctoral student. One of the research team identifies as Mexican-origin and a member of a border community, three investigators identify as Anglo, and the doctoral student identifies as Black. The community partners included eight individuals from three communities. Six identify as Mexican-origin, four as CHWs, and four as CHW supervisors and program managers. The academic researchers planned the workshop and facilitated and documented the small group activities and the community partners generated the content.

Sociocultural constructs

Table 1 provides a synthesis of the discussion generated from the small groups. The partners described their understanding of cultural processes as the synergy between the beliefs, behaviors, religion, food, family, language, support and traditions that define a group of people. They also described it as the ways that people adapt to culture and/or become a part of a culture. Cultural processes included how they communicate, both with each other and with service providers, and a collectivist approach to getting things done. In thinking about UNIDOS intervention activities, the partners felt that fostering an exchange among participants would leverage cultural processes,

such as intergenerational storytelling, sharing of food and artistic forms of expression such as dance.

Partners described social networks as the support system for a specific ethnicity within communities. Social networks included family members, friends or coworkers that could interact in formal ways (e.g., in workplace settings) or informal ways (e.g., walking groups). Notably, while the partners believed that social networks create a sense of belonging and accountability, they saw them as both health promoting and health adverse depending on the activities. To leverage the health promoting aspects of social networks, partners suggested that the UNIDOS intervention focus on creating social opportunities and encouraging intergenerational communication. Partners also discussed the dissipation of social networks due to the COVID-19 pandemic and the importance of encouraging participants to re-engage and strengthen their existing social networks and make the time to connect with the people they care about.

Table 1 here

Measuring SRM Constructs

The community partners created research questions related to the SRM, such as 'what does culture mean to you?' and 'what does your network look like?' We reviewed research instruments that we had used in past interventions and considered how well these captured our construct definitions. The partners felt that culture was not well represented and selected questions from the Mexican American Cultural Values Scale that they felt reflected the definitions that they had discussed collaboratively.[32] They also drew questions from the Family Adaptability and Cohesion Evaluation Scale.[33]

For social networks, the community partners were interested in both the size and strength of networks, as well as the distinct contribution of each of these in sociocultural resilience. We

weighed the benefits of capturing a range of potential sources of support against the complexity of asking participants to "quantify" their social networks using existing instruments. The partners selected questions from the Social Networks Inventory[34] and the Berkman-Syme Social Network Index[35] to capture both quality and quantity. For health outcomes, the partners included the Centers for Epidemiological Studies Depression Scale[36], and the Health-related Quality of Life scale[37], as well as questions from the Behavioral Risk Factor Surveillance System for self-reported health status.[38] (Table 2)

Table 2 here

The final questionnaire was refined over several subsequent monthly meetings. The academic researchers tried to narrow down the options in more frequent monthly meetings, however they remained consistent with the articulated interests of the partners to measure subjective and objective perceptions of social networks. These conversations contributed to ongoing partnership discussion of the components of the UNIDOS intervention because it allowed us to ensure the services being provided were related to the outcomes we sought to measure. Where possible, we chose instruments that had been used in Latinx populations and were already translated (or created) in Spanish. However, in our final translation, we had extensive discussions about language expression in the border communities and came to consensus using a process that focused on the intended meaning of a question rather than the literal translation.[39]

Discussion

Studying processes to integrate behavioral health models into community practice has important implications for conceptualizing and organizing pathways to better health in health promotion efforts. Our CBPR partnership built upon a hybrid model for concept development by incorporating community engagement strategies that centered field work on the SRM within the

community context. A participatory approach was essential to the initial application of the SRM to the UNIDOS intervention. Through a collaborative workshop and ongoing discussion, partners developed a common understanding of the SRM which we then applied to intervention development and measurement. A history of sharing of mutual expertise within our partnership facilitated a participatory process, particularly with CHWs, who have cultural and contextual experience with the proposed SRM constructs. The CCL partnership had not previously engaged in contextualizing a behavioral health model, and as equal partners in the research process, the partners did not hesitate to draw on their expertise and personal experience in discussing the applicability of the SRM constructs to their communities and the intervention.

The asset-based and culturally grounded SRM constructs cultivated initial and ongoing interest among our partners, particularly in their capacity to respond to challenges presented by COVID-19 during implementation. As we moved forward with the intervention were confronted by the fact that the cultural processes that are the foundation of the SRM exacerbated the risk of COVID-19 transmission in the community. Social connections became limited to immediate family members, and these were often stressed by the economic and emotional impact of the pandemic. The partners found that they had to be much more intentional about providing social support as the emotional wellness of community members declined. As service providers, they often had to step in where social networks would have previously responded. As an example, the social network of a disabled client living in substandard housing fell apart in the face of COVID-19, compelling the partner organization to become her actual social network in ensuring she could access services. Organizational partners thus became more embedded in the community, as well as more connected to each other, as they worked together to meet basic and complex needs.

The partners also found that the pandemic highlighted the importance of having community advocates working at the decision-making level of their organizations.

Even as the pandemic undermined community capacity to leverage the SRM, partners expressed interest in how SRM constructs might operate under this type of stress. Thus, while COVID-19 altered our data collection phase, this fact did not undermine the participatory process of field work that preceded it. We are incorporating qualitative methods with UNIDOS participants to capture how they negotiated both social networks and cultural processes over two years. For example, in one county UNIDOS strategies included the expansion of neighborhood associations to address healthy food access and increased transportation support for stressed communities.

A second opportunity to study the SRM introduced by partners was to learn how social networks may have facilitated the adoption of technology by elders. In one case, a community member who lost her vaccination card contacted a friend at the fire department who referred her to her wife, an employee of the health department, who helped her resolve the issue. This example demonstrates the unspoken way community members used social networks to identify a person in the community who could help facilitate access to online services.

Partners also identified ways in which cultural processes played a role in the sharing of COVID information. Community members joined Facebook groups so that they could stay abreast of what was happening in the community and to identify or become part of a social support system. The information that was carried through social media platforms involved humor, such as memes about combatting and protecting oneself against infection and a pro-vaccine *corrido* (Mexican ballad). When partners came across a good meme, they would turn it into a poster because they felt it resonated more with the culture and the community. The

creation of social networks has increased the communities' capacity to work with each other. Food drives, celebrations and other social events that bring people together are typically advertised and shown through Facebook live, giving a sense of inclusion to the older residents of the community.

As with many health promotion efforts, we run the risk of de-emphasizing the application of the underlying conceptual model as UNIDOS moves into practice. Now in the third year of the intervention, project partners face the ongoing challenge of keeping the conceptual underpinnings relevant as the project engages new partners and CHWs. The academic research staff continue to facilitate collaborative workshops with new and existing partners in which we re-introduce and discuss the SRM. While challenging, the incorporation of new partners has contributed to an evolving understanding of model constructs as they are applied in counties with distinct attributes. One county is more urban, for example, and another is largely agricultural. New partners have also raised new questions about sociocultural resilience, such as the intersection of Mexican and Indigenous histories. We are finding that this iterative process expands and strengthens our understanding of the SRM.

Process evaluation of the UNIDOS implementation, pre/post data from the UNIDOS questionnaire, and qualitative data collection with UNIDOS participants will contribute to the third, or analytic stage of the hybrid model of theory development. In this stage, the triangulation of these data will clarify how well our instruments captured social networks and cultural processes, and whether these are related to participant emotional and physical outcomes. CBPR processes will be essential to interpreting these findings and refining the SRM within the role of Mexican-origin border communities.[25]

Conclusion

The SRM proposes that cultural processes and social networks contribute to the health advantages among Latinx populations. Our CBPR partnership sought to adapt the model for practice through the application of the SRM constructs in the UNIDOS study within the context of US-Mexico border communities. The collaborative process of construct definition and measurement between academic and community partners was essential to reaching common understanding of model and operationalizing the constructs through proposed intervention activities, even while confronting the COVID-19 pandemic.

Acknowledgements

The academic and community partners who authored this paper thank our Community Action Board members who in the collaborative creation of UNIDOS. This journal article was supported by the grant or cooperative agreement U48DP006413 under the Health Promotion and Disease Prevention Research Centers Program, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services. No copyrighted materials were used in this research. We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O'odham and the Yaqui. Committed to diversity and inclusion, the University strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.

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Table 1. Adapting constructs of sociocultural resilience to Arizona-Mexico Border communities

Construct	Meaning based on lived experience	How it relates to health	Enhancement activities
Cultural Processes	• Respecting values and beliefs based on how and where you were raised • Becoming part of or adapting to a culture • Those beliefs, behaviors, religion, food, family, language, support, traditions which define a group of people and the practice of those beliefs, daily activities, food, communication • Specific to the Latinx community ▪ Support: value of being physically present ▪ Collectivistic mindset in how things are done	• Going back to the roots of indigenous knowledge to remember our health • Achieving adaptation and balance • Guides perceptions and interactions and how they interact with health systems • Navigating bi-cultural (border) norms • Influences health behaviors having either positive or negative outcomes • Influences body image	• Food related events: Let's cook, eat and play, cafecitos. • Intergenerational story telling • Gardening • Dance-Music • Developing advocacy skills (how to talk with doctor)
Social Networks	• A support system for a specific ethnicity within communities • Family is a traditional network • Fosters health within a group with common interests (religious, therapeutic, intergenerational mentorship) • Made up of different constituents: family, friends • Has levels or a continuum, both formal (work settings) and informal (walking group) • Active and passive, those you interact with vs. friends on social media) • Communication with people who are confidants	• Create accountability • Create a sense of place and belonging. • Can create peer pressure or social influence • Both beneficial and detrimental to health (friends who drink vs friends who work out) • Fortify cultural practices to improve health • Create resilience, the ability to withstand obstacles • Affect support: ▪ Availability of people you can talk to, who listen, share experiences with ▪ Caretaking roles ▪ Assistance in navigating healthcare	• Create opportunities to gather • Invite to community and social events • Teach ways to communicate-intergenerationally, culturally, language • Make and foster activities that are respectful to culture • Encourage participants to strengthen existing network(s) • Use support groups to create networks: ▪ Create shared experiences (structured vs unstructured) ▪ Share resources ▪ Have ground rules and objectives ▪ Have a collective purpose

Table 2. Measuring contextually adapted constructs of sociocultural resilience

Construct	Ways to measure construct	Potential instruments
Cultural Processes	• What is important to you about your culture? • Who do you go to when you're not being well? • Has moving across the border affected your sense of belonging? • Emotional wellbeing	• Mexican American Cultural Values Scale • The Family Adaptability and Cohesion Evaluation Scale (FACES II)
Social Networks	• Map the network "what does your network look like?" • Questions on having someone you can trust • Subjective vs objective perceptions of social network • Quantify network: range (e.g at least 1 person, more than 5 people), "a lot", "a few" • Distinguish who: family, extended family, friends • Rate value of their social network	• The Social Networks Inventory • Berkman-Syme Social Support Scale
Health Outcomes	• Life Simple 7 (smoking, diet, exercise, hypertension) • Self-Rated Health	• Centers for Epidemiological Studies Depression Scale-10 • Health-related Quality of Life Short Form 8 • Behavioral Risk Factor Surveillance System